**ENVIRONMENTAL AND SOCIAL MANAGEMENT REPORT *(ESMR)***

**of the**

**Modernization of agricultural health and food safety public services Program *(HA-L1094)***

***April 2014***

**Summary**

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# List of acronyms

|  |  |
| --- | --- |
| **AES** | Environmental and Social Analysis |
| **BAC** | Municipal Bureau of Agriculture |
| **IDB** | Inter-American Development Bank |
| **CIPV** | International Convention for plant health |
| **DEFI** | Value Chain Development Program |
| **DPV** | Plant Health Directorate |
| **DSA** | Animal Health Directorate |
| **EES** | Environmental and Social Assessment |
| **EPI** | Personal Protective Equipment |
| **ERBT** | Task Based Risk Assessment |
| **FAO** | Food and Agriculture Organization (United Nations) |
| **GSB** | Animal Health Group |
| **IEC** | Information-Education-Communication |
| **LNBTP** | National Laboratory of Building and Public Works |
| **LVCQAT** | Veterinary and Quality Control Laboratory of Tamarinier Nutrients |
| **MARNDR** | Ministry of Agriculture Natural Resources and Rural Development |
| **MCI** | Ministry of Commerce and Industry |
| **MDE** | Ministry of Environment |
| **MEF** | Ministry of Economy and Finance |
| **MSP** | Sanitary and Phytosanitary Measures |
| **MSPP** | Ministry of Public Health and Population |
| **OIE** | International Organization of Epizootics |
| **OMS/WHO** | World Health Organization |
| **ESMP** | Environmental and Social Management Plans |
| **PNUE** | United Nations Environment Program(me) |
| **POPs** | Persistent Organic Pollutants |
| **PPRC** | Strategic Program for Climate Resilience |
| **PTTA** | Agricultural Technology Transfer Program |
| **PVC,** | Polyvinyl Chloride |
| **RESEPAG** | Strengthening Agricultural Public Services Project |
| **RGES** | Environmental and Social Management Report |
| **SPS** | Program of modernization of Agricultural Health and food safety public services |
| **RSE** | Environmental Monitoring Officer/Manager |
| **UPS** | Sanitary Health Unit |

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# I.-INTRODUCTION

## 1.1.-Context/background

Haitian authorities believe that agriculture is a fundamental axis of the country’s economic and social development. This sector can provide food/nutrients essential to local consumption and in order to reduce dependence on imports, it creates jobs in the rural sector, contributes significantly to the gross domestic product and can generate foreign exchange through exports. It is on the basis of these assumptions and as part of the National Food Policy that the Agricultural Policy 2010-2020 and a 2010-2022 Investment Plan were formulated/developed. All national policy documents emphasize/focus on the importance of agricultural health and food safety services. Recommendations were issued to contribute to their strengthening and modernization, under the principles of the Agreement on Sanitary and Phytosanitary Measures (MSP), coming/arising from the World Trade Organization and guidance of international reference institutions such as the OIE, the CIPF and the Codex Alimentarius.

In response to these recommendations, the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) and the Inter-American Development Bank (IDB) in Haiti are currently formulating a Program of modernization of Agricultural Health and food safety public services, HA- L1094 (hereinafter the "Program" or " SPS Program"). This program will be funded by the ease of the Bank and executed by the MARNDR. It will exclusively fund investments in the 2014-2019 investment plan for the modernization of agricultural health and food safety public services of the MARNDR ("SPS Plan"). Four (4) of the MARDNR’s services will benefit directly from the program. These are: (1) the Directorate of Plant Health (DPV), (2) the Directorate of Animal Health (DSA), of which, the Animal Health Groups (GSB), (3) the Directorate of Quarantine and (4) the Directorate of the veterinary and quality control laboratory of Tamarinier nutrients (LVCQAT).

This program aims to strengthen the capacity of animal, plant health and quarantine public services, not only with the aim of boosting/revitalizing domestic agricultural production but also to respect the compliance requirements of international trade and public health.

It is structured in four parts. These are: **Component 1**: Institutional Strengthening. **Component 2**: Strengthening of Plant Health and quarantine services. **Component 3**: Strengthening of Animal Health Services. **Component 4**: Strengthening of the Veterinary Laboratory and quality control of Tamarinier nutrients.

## 1.2.-Environmental classification and safeguard policy

The environmental assessment has noted/observed that very few risks of significant adverse impacts on the environment and communities have been identified. The potential adverse impacts have thus been evaluated from minor to moderate and manageable, through the implementation of mitigation measures. The project is therefore classified as "B", in accordance with the Bank’s environmental policy (OP- 703). An environmental and social assessment (EES) was prepared/developed, which resulted in an Environmental and Social Management Plan (ESMP). The specific policies and directives of the Bank that are considered relevant to the project are: OP-102 (*availability of public documents*), OP-704-A-2 (*natural disasters risk management*); B.02 (*compliance with the national environmental legislation and international ratified conventions*), B.03 *(assessment and classification of activities according to their potential environmental impacts*), B05 (*environmental and social analysis* ) B.06 ( *public consultation*), B 0.07 (*monitoring of the implementation of environmental and social measures*). The way in which the project meets the above principles is presented in Section VI.

1.3.-Implications of the classification in category « B »

**This categorization involves/implies the following measures/steps:**

* Identification of potential impacts or environmental and social risks, as well as mitigation measures required;
* Analysis of the national, legal and institutional framework related to the environment;
* Analysis of the potential effects of natural disasters and climate change on infrastructure to be financed by the Bank and the identification of mechanisms to minimize risk;
* Identification of the institutional responsibilities, the schedule/timetable and the budget for the implementation of proposed mitigation measures;
* Development of a monitoring mechanism for environmental and social indicators;
* Public consultation to gather/retrieve input from people who may be affected by the program activities. The Bank, in fact, requires that projects classified in category "B" should at least be subject to a public consultation on the potential environmental and social impacts among those likely affected or likely to be affected.

## 1.4.-Activities carried out during the environmental and social analysis (AES)

The environmental and social analysis (AES) was designed to assess the environmental and social impacts and risks associated with the implementation of the HA-L1094 program. This involved the following activities:

* The evaluation of the environmental monitoring mechanism/system within the MARNDR.
* Visits to the sites where infrastructure will be installed.
* The consideration/review of the program(s) and project(s) reports related to the SPS including the reports of the DEFI, RESEPAG II and PTTA programs;
* Discussion with resource persons involved in the conception/design, the structure and the implementation of the program at the central level and on the field;
* Analysis of the national, legal and institutional framework and of the international pesticide regulation
* Identification of risks related to natural disasters and climate change;
* Analysis of management and disposal of hazardous waste practices
* Analysis of the Program’s technical aspects: analysis of the potential direct and indirect impacts and of the socio-environmental risks in the short and long term risks, related to the program.

## 1.5.-Objective and organization of the report

This Environmental and Social Management Report (RGES) provides a summary of the results of the environmental and social analysis (AES) of the Modernization project of agricultural health and food safety public services (HA-L1094). As such, it reaffirms/presents the main impacts and risks identified, the mitigations measures proposed, and presents an indicative implementation budget. It is structured as follows:

* Introduction;
* Description of the project;
* Summary of the analysis of environmental and social impacts of the project, and proposed mitigation measures in the PGED;
* Summary of the legislation, the national and international standards relative to agricultural products;
* Summary of the ESMP;
* Analysis of the compliance of the ESMP with the environmental and social safeguard policies of the IDB/BID;

# II.-Description of the program

## 2.1.-Objective

The HA-L1094 program aims to improve the performance and efficiency of agricultural health and food safety services, in conformance with the country's agricultural policy and international standards. In order to achieve this end result, it will contribute to the strengthening of public health, the increase in the production of quality nutrients/food and to environmental protection.

## 2.2.-The components

### *2.2.1.-Component 1. Institutional strengthening*

It includes the following activities: (i) infrastructures and equipment to establish five administrative and technical decentralized agricultural health and food safety centers in selected departments; (ii) design and implementation of modern administrative and operating procedures applicable to central and departmental agricultural health services; (iii) design and implementation of cost-recovery mechanisms in five key functions of the agricultural health services; and (iv) design and implementation of an integrated information system.

### *2.2.2.- Component 2. Strengthening of Plant health and quarantine services*

This component includes: (i) initial preparation and subsequent annual update of the list of plant pests and diseases present in Haiti; (ii) training of 5,500 farmers, members of the voluntary plant surveillance network; (iii) preparation and dissemination of monthly plant health surveillance bulletins among farmers; (iv) implementation of a pilot Fruit Fly control program; (v) implementation of a pilot “Crazy Ant” control program; (vi) phytopathology and virology equipment, biosecurity and quality plans and laboratory protocols, as well as staff training for the Plant Health Laboratory; and (vii) training and technical assistance required for the creation of a Plant Health Risk Analysis Unit.

### *2.2.3.- Component 3. Strengthening of Animal Health services*

It comprises the following activities: (i) training of 5,500 breeders, members of the voluntary animal surveillance network; (ii) collection of animal blood and tissues samples for analysis; (iii) Classical Swine Fever (CSF) and Teschen disease epidemiological surveys; (iv) preparation and dissemination of monthly animal health surveillance bulletins among breeders; (v)  initial training of 1,250 veterinary private paraprofessionals; (vi) One CSF and Teschen disease vaccination campaign, combined with a pig identification (tag) campaign [the proceeds of this first campaign, obtained through the cost recovery mechanism, will finance subsequent campaigns]; (vii) implementation of a maintenance service for the national solar energy cold chain system currently under installation (viii) training and technical assistance required for the creation of an Animal Health Risk Analysis Unit; and (ix) implementation of a registering, accreditation and regulation system of the veterinary private professionals.

### *2.2.4.- Component 4. Strengthening of the Veterinary Laboratory and of the quality control of Tamarinier*

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The laboratory will provide services to animal health (Component 3), but also to food safety. This component will finance all investments required to allow the accreditation of LVCQAT, including (i) infrastructure upgrading; (ii) equipment; (iii) preparation of procedures and protocols on topics such as biosecurity and quality assurance; and (iv) staff training.

## 2.3.-Geographical coverage/scope

The program will be deployed primarily in the departments of the West and the Artibonite (1st year), targeted as priorities by the MARNDR. Thereafter, it will be extended to the departments of the South and the Centre (2nd year) and the Northwest and Nippes (3rd year).

## 2.4.-Execution of the program

The program will be implemented by the Ministry of Agriculture, Natural Resources and Rural Development, through its Health Protection Unit (UPS). This unit includes the four (4) directorates of Plant Health (DPV), Animal Health (DSA), of Quarantine and the Veterinary Laboratory and the quality control of food/nutrients (LVCQAT). Finally, the program anticipates in component I, the design/creation of an independent agency that will consolidate/regroup all these services, and will support the coordination of the program.

# III.- summary of the results of the environmental and social assessment of the program

The potential direct environmental and social impacts and risks, at the short and long terms, related to the implementation of the program were assessed. It seems that, following the execution of the program, no significant adverse impact will persist. However, there are certain environmental and social risks that can be managed through mitigation measures, as presented below. On the other hand, this program will result in ​​a positive environmental and social impact, particularly through increased producers’ incomes. The assessment of impacts and risks related to the SPS program and the development of the management plan (ESMP), which subsequently followed, required the realization/carrying out of the following activities:

* An inventory of the legislation and of the institutional framework;
* Interviews with resource persons of the MARDNR
* An analysis of the activities of all entities involved in the management of phytosanitary products at the MARNDR and its decentralized directorates (DPV, DSA, Quarantine, LVCQAT);
* Interviews with people involved in the management and/or commercialization/marketing of these products in Haiti (traders, agricultural producers and farmers, etc.);
* The site visit of the MARNDR facilities, particularly border crossings.

In regard(s) to the identification of impacts as well as risk management, we have adopted the ERBT technique (*Task based risk assessment, which provides a priority order in safeguarding activities to reduce risks gradually with their execution*) that aims to identify hazards that may affect human and natural resources, identify persons who may be concerned or affected by these hazards.

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## 3.1.-The positive social impacts of the program.

* ***Qualified available and operational human resources.***

Training activities (universities, research centers, workshops, conferences) will have positive social impacts, particularly because they involve associations of producers, particularly smallholders and women involved in the various areas targeted by the program. The planned training courses include:

* Training through the use of refrigerate plants and in identification of problems/issues.
* Ongoing training of officials
* Epidemiology
* Risk analysis
* Information campaigns and workshops on the agricultural health system and procedures in all departments
* ***Increase in revenues, and job creations***

We anticipate an increase in income for farmers who will adopt new techniques to fight against pests, due to improvement in the business productivity of their activity, the reduction of production costs due to the adoption of good practices and the improvement in quality of their products. The program directly provides support to Fruit fly and the Coffee Borer, and since many producers of mangoes and coffee are smallholders, including women's associations; the program will have a significant social impact on these social categories.

* ***Increased propensity to invest in the production activity.***

The introduction of new tested technologies will increase the attractiveness of the agriculture and livestock sectors and will attract new investors. This will result in the increase in food self-sufficiency, creation of jobs, a better equilibrium in the balance of payments.

## 3.2.-Positive environmental impacts

### *3.2.1.-Construction of multipurpose centers equipped and endowed with human resources*

The grouping of animal and phytosanitary services in only one place (multipurpose centers) will allow for a better control of products, thus a more efficient and less polluting use thereof. The collection of empty packaging and expired products will obviously be facilitated. In particular, the endowment in portable equipment hazardous for/of waste collection will facilitate better management

### *3.2.2.-Production of procedure and control*

The procedure and control manuals that will be produced within the program will be a good step forward in the standardization of tasks in the different multipurpose centers. In addition to describing in detail how to execute tasks and how frequently these documents will specify the measures for monitoring and evaluation practices within the six (6) multi-purpose centers and at the Tamarinier laboratory. However, I order to facilitate their full implementation, awareness sessions should be organized, leaflets summarizing the different procedures steps and posters (in French or Creole) shall be printed and installed in strategic locations within the centers. A control and sanction system, in case of non-application of these procedures should also be established.

### *3.2.3.-Installation of incinerators*

The epidemiological surveillance and control activities will generate a large volume of hazardous waste that will need to be eliminated with respect to the health of the population and the environment. The program includes the purchase and installation of 7 incinerators to facilitate the full disposal of hazardous waste. These incinerators will be installed in 6 multipurpose departmental centers and at the central Tamariner laboratory. These incinerators will include a main chamber where the waste will be burned and a post-combustion device that will allow maximum destruction of organic hazardous products.

**HOWEVER**, organic pesticides containing mercury and lead should not be incinerated. They will be burned at relatively high temperatures (+ 1100 0C), and the gas will be held in the flame for at least four seconds.

For more information on specific operating and design techniques of incinerators, refer to *The safe disposal of Hazardous wastes: the Special Needs and problems of Developing Countries: Volume III (World Bank / WHO / UNEP, 1989) and Draft technical guidelines on incineration on land (D10) (UNEP / SBC, 1994c).*

## 3.3.-Environmental and social risks

**environmental risks:**

* Production of waste of several categories (construction, laboratory waste, hazardous waste, etc.).
  + ***Waste coming from the construction activities*** *(Stone, Concrete, Cement, Concrete block, Terracotta-Clay/Brick, Soil / Pebbles-Stones, Slate, Earthenware, Porcelain, Ceramic, mixtures of these different waste (also called Carve- Rubble), plain Glass, Metals, Packaging , insulating composite, Textiles, plastic compounds: PVC, polystyrene, PE ... ; Gypsum-plaster, untreated wood, water-based paints, aqueous-solvent adhesives and sealants-mastics, complex-compounds combining several materials (plaster, polystyrene, cardboard, wood, steel ...)*
  + ***Waste related to epidemiological surveillance, pest control*** *and analysis and research (syringes, empty packaging, animal carcasses, needles, etc.) activities; analysis sample, effluents of any kind, all sharp or cutting objects exposed to organic products or not, blood products for therapeutic uses, partially used or arrived at expiry; anatomical animal waste not easily identifiable;*
* Development of resistance of certain strains of diseases due to improper use of the products, particularly for diseases treated with antibiotics-based medication
* Appearance of disease symptoms in domestic animals and humans due to improper disposal of empty packaging
* Dispersion in the environment by volatilization or wind transport of dust and contaminated soil particles
* Alteration of air quality in the border areas of construction sites (dust, odors, etc.).
* Contamination of soil and infiltration into groundwater by accidental or intentional spills, pollution of water bodies (oil spill fuel, paint and other solvents, ...)
* Flights and looting of expired stocks leading to their use;
* Risk of loss of access (temporary or permanent) to some natural resources and/or moving of the population due to construction sites

**NB: in the event that the various waste categories are not separated, all waste from research and analysis activities must be considered dangerous/hazardous and infectious.**

**Social/sanitary risks**

* Development of a parallel market if stocks are not properly managed
* Case(s) of death or poisoning/intoxication
* Probability of contamination of water sources through the washing/cleaning of empty containers
* Probability of Ingestion of products through the reuse of containers
* Probability of accidental contamination, discomfort, nuisance/harm of nearby populations
* Skin contact, contamination of wells

***3.3.1.-Risk related to sharp objects and Professional risk***

During waste handling, injections are possible when the syringes/needles and other sharp objects have not been collected in rigid and rigid/puncture-proof containers. The risk exposure is increased by the use of inappropriate containers and/or that overflow, and even more through the use of unprotected pits. The risk exposure to skin wounds increased for the laboratory staff, for the one/those assigned to the collection of waste and the surrounding community.

### *3.3.2.- Risk for the general population*

The reuse of contaminated needles is a major risk for public health. Based on previous estimates (Kane et al., 2000)[[1]](#footnote-1) and recent updates, the WHO estimated that in 2000, 23 million infections by the hepatitis B, and hepatitis C viruses were caused by injections with contaminated syringes. Such situations areprobable when waste research and analysis are deposited in uncontrolled garbage/dumps, which the public has easy access to: children are particularly exposed to contact with infectious waste. Contact with toxic chemical products such as disinfectants, may be the cause of incidents when they are available to the public.

### *3.3.3.- Risk for the environment*

In addition to health risks due to direct contact, the waste stemming from research and analysis laboratory activities can have a negative impact on human health, through the contamination of water sources during the waste treatment and by the air pollution due to the emission of highly toxic gases during the incineration. When the waste is disposed in a pit that is not insulated, or that is too close to water sources, the water may be contaminated. If the waste is burned in the open or in an incinerator whose emissions are not controlled (which is the case with most incinerators in developing countries), there may be air emissions of dioxins, furans and other toxic pollutants, which can cause serious illnesses in people who inhale this air. When choosing a course of treatment or disposal of hazardous waste, protecting the environment is a key criterion.

**only well trained and motivated staff will apply the required and simple measures to improve the safety of hazardous waste management.**

## 3.4.-Risks related to natural disasters

Mountainous country - the relief is very rugged: slopes greater than 20 % cover 60 % of the territory - Haiti has been regularly hit by hurricanes and floods throughout its history. Besides these, the country is subject to droughts becoming more and more frequent. Intense deforestation plaguing much of the country is causing/causes accelerated soil erosion and a greater impact for both urban and rural populations, downstream of the country’s main watershed is estimated that 85 % would be damaged. The acceleration of the flow of stream causes major devastating effects on agricultural production which are on their way/path, to homes and national infrastructure (roads, bridges, etc.). The HA - L1094 program anticipates the construction of 6 agricultural health multipurpose centers and the rehabilitation of the LVCQAT national laboratory. To minimize the vulnerability of buildings to natural disasters, the following points should be observed:

1. The realization of a soil analysis (*by the National Laboratory of Building and Public Works/construction. - LNBTP*) that will determine the definition of the natural state of basements, the estimation of the free surface of the water table, estimating the resistance of the various soils encountered, on the bearing capacity of the subsoil, the soil class of the construction site according to the IBC code and will determine the frequency of the soil.
2. To mitigate the risk associated with hurricanes or design of infrastructure plans, in compliance with the national building code available on <http://uclbp.gouv.ht/download/cicps-2014-cnbh-fusion.pdf>
3. The strengthening of existing infrastructure and of those that are planned and adaptation in order to be able to adjust to the increase of temperature, to the multiplication and intensification of extreme meteorological events, rising sea level, to the worsening of sand movements and to the changing hydrological and pluviometric patterns.

## 3.5.-Implications of climate change.

Haiti is considered one of the most vulnerable countries in dealing with climate change, due to the significant environmental deterioration resulting from the excessive exploitation of forest resources, soil, water, quarries and coastal waters. This deterioration reduces the country’s ability to mitigate the effects of extreme meteorological events and demonstrations of climate change, of which the expected impacts include *reduced water resources, increased soil erosion, and an increased of coastal erosion and deterioration of coastal ecosystems.* In order to assist the country in addressing the urgent and immediate needs with regard to its vulnerability and adaptation to the adverse effects of climate change, adaptation options have been identified, characterized and defined following eight (8) of steps of action:

1. watershed management and soil conservation
2. Coastal zone management
3. Valuation and conservation of natural resources
4. Preservation and strengthening of food safety
5. Protection and Conservation of water
6. Construction and rehabilitation of infrastructure
7. Waste management
8. Information, education and sensitization

In the Framework of the Pilot Program for Climate Resilience (PPRC), several interventions have been identified to contribute to the country's adaptation to climate change[[2]](#footnote-2).

These interventions will fund:

1. The strengthening of the management of hydrometeorological, climatic data and water resources (***$ 8M, World Bank***);
2. The improvement of agriculture resilience to climate in the Center and Artibonite Loop ***($ 4.5 million BID/IDB***);
3. The climate management and adaptation in urban communities in the arc of the Gulf of Gonave, from Elegance to Saint-Marc ***($ 7M, World Bank***).;
4. The strengthening of capacity, generation and dissemination of knowledge and maintenance of the dialogue in regard to policies about resilience to change ***($ 5.5M, World Bank).***

At its level, the HA- L1094 program will contribute to the country's adaptation to climate change. Indeed, by strengthening plant health and animal health services, it will contribute to a better availability of foodstuff/commodities, which is consistent with the priority " ***Preservation/conservation and strengthening of food safety."*** The construction of multipurpose departmental centers is integrated/built in the priority " ***Construction and rehabilitation of infrastructure***." The installation of incinerators in the multipurpose departmental centers should contribute to better **waste management**, particularly hazardous waste. Finally, as part of its institutional strengthening component, the program expects not only the training of qualified resources to make departmental centers operational, but also an ***information, awareness and education (IEC )*** campaign, which should contribute to a better understanding and better management of pesticides in Haiti .

# IV.-Applicable legislative and normative framework

## 4.1.- National legislative framework

### *4.1.1.-The applicable laws*

One of the most important sources of laws regarding environmental matters in Haiti and applicable to the program is the 1987 Constitution. Indeed, this constitution was the first among the many versions, twenty-seven (27) experienced by the country since 1803, to include a chapter entirely (Title IX - Chapter II) devoted to the environment (see sections 253, 254, 255, 256, 257 and 258).

It should also be noted that the environmental sector is directly concerned by other sections of this Constitution, particularly: Section 8 (Title I - Chapter II) related to the Republic’s territory, Sections 22 and 23 (Title I, Chapter II, Section A) related to the right to life and health; Section 52-1 h) deals with the citizen’s civic duty to respect and protect the Environment; Sections 36-3, 36-4, 36-5, 36-6 and 37 (Title I, Chapter II, Section II relate to property); and Sections 248, 248-1, 249 and 251 (Title IX, Chapter I) deal with the economy and agriculture.

Unfortunately, since the publication of this constitution, no implementing text of wishes expressed in the above-mentioned sections has been adopted[[3]](#footnote-3). However, several draft legislation were submitted to Parliament and a certain number, particularly/notably on the use of pesticides are waiting to be deposited at the Parliament (see Annex 1) by the MARNDR, the MDE, the MCI, the MAST particularly. The program, in the context/framework of its component I "Institutional Strengthening" will contribute to the evolution of the situation.

Many extracts of the 1962 and 1964 Rural Code, reviewed by the Ministry of Justice and Public Safety (1984) are still valid today. We can particularly mention Sections 56 and 57 on the spread of infectious diseases, insect invasions (...) on a plant species (***Chapter I, Section I: Crops***).

In the **disease prevention and slaughtering** section, we can refer to:

* Sections 91 to 93 on the elimination methods of dead animals that are infected or suspected to be infected by an infectious disease
* Sections 94 and 97 of the obligation to report to the authorities any sign of contagion from infectious diseases to the authorities, notably anthrax and hog cholera.

Finally, Chapter 15, which deals with rural health, provides various paths on the methods: *waste disposal (Article 297), the disposal of dead animal carcass (Art 299), the incineration of animal carcasses (Art 300) and the prohibition to commercialize the flesh of animals dead from unknown causes (Art 301)*

**Other sources**

* The March 3rd 1981 decree governing the management and disposal of waste.
* The August 21st 1983 Presidential Decree defining the ​​intervention area of the Solid Waste Collection Metropolitan Service.
* The April 21rst 1983 Presidential Decree stating that a portion of land located at TRUITIER residence, rural section of Varreux in the municipality of Delmas, metropolitan area and its immediate surroundings

### *4.1.2.-The applicable standards*

### ***a.-*** ***Standards and regulation of terrestrial soil and ecosystems***

Any site (mine, quarry, depot or discharge) having been the subject of an exploitation by mining, dumping or landfill should be restored. This rehabilitation is the responsibility of the operator and is done according to the conditions laid down by the competent authorities.

### ***b.-Standards on air quality***

Any air pollution, beyond the standards set by the laws and regulations, is prohibited. The standards relative to air quality are set by the Ministry of the Environment.

### *c.-Standards on the cultivation/exploitation of Quarries*

All non-metallic substance(s) sites are considered as quarries. According to the March 2nd 1984 decree, the quarries are part of the public domain of the State and their utilization/development is considered a commercial act. The exploitation of a quarry is subject to an authorization by the Bureau of Mines and Energy (BME). To this end, simply fill out/complete the BME 96-001 and BME 96-002 Form. The March 3rd 1976 Decree, assures the Haitian government to ensure the perceived value of 25 cents per m3 gourdes of quarries and river sands, to the special account of the National Institute of Mineral Resources

### *d.- National Building code of Haiti (2012)*

The infrastructure to be built within the program fall into the category 4 **Civil protection buildings**. These are buildings where essential services, in case of natural disasters, are provided : hospitals, multi-purpose service centers to the population, telephone exchanges, power stations and distribution sub-stations, control centers for all types of public transportation, stations for pumping, for the treatment and storage of water, buildings that perform critical national defense functions, intervention installations in case of an emergency (fire stations, police stations, rescue station and facilities that /accommodate their vehicles), communications facilities (radio and television stations).

## 4.2.-International conventions and regulations

Haiti is a signatory of the 1998 Rotterdam Convention on hazardous chemical products and pesticides, organized by the FAO and PNUE, but not yet ratified by the parliament. The convention emphasized that the International Code for the distribution and use of pesticides was adopted by the Conference in the 23rd session in 1985. That one has been amended to take into account of the **prior consent procedure** knowingly during the 25th session of the Conference in 1989. The conference noted that this revision was necessary because of the adoption of the Rotterdam Convention and to take into account a number of new concepts on the integrated protection against pests and pesticide management. Members have emphasized the relevance of the Code and the importance of this reference instrument of global scope for the management of these dangerous products, especially in developing countries such as Haiti.

Several other recent international agreements of great importance should also be mentioned, signed by the Haitian Government, but whose ratification tools have not yet been deposited. These are among others:

* The Convention for the Protection of the Ozone Layer and the various amendments and protocols to this Convention. (signed in 1998);
* The Convention on Persistent Organic Pollutants (POPs) signed in 2001;
* The Cartagena Protocol on the prevention of biosafety risks related to the Convention on Biological Diversity on (January 29, 2000).

The regulation of the distribution and use of pesticides has greatly evolved and great efforts are made by the various ministries involved in pesticide management so as to ensure the implementation of an appropriate legal framework (***Appendix 1).*** But this constitutes a serious problem of update, vulgarization, and especially the application of these texts at the national level. The HA-L1094 program, through its Institutional Strengthening component, will finance the creation of a health protection unit (UPS) that will federate services of animal and plant health. This unit will comply with the directives of the international reference agencies, will support agriculture to produce more quality food/nutrients for domestic consumption and external markets; it will intervene in the protection of public health, increasing producer profits and environmental protection.

# V.-Environmental and social management plan of the program

## 5.1.-Objective/purpose

In the context/framework of the implementation of the modernization of public services of agricultural health and food safety program (HA-L1094), the management plan is designed to minimize potential adverse effects on human and animal health and on the environment, which may result from program activities. One objective of this plan is to assess the capacity of Haiti’s institutional and regulatory framework to promote and support safe, efficient and rational management of pesticides, construction sites multipurpose centers and to integrate safeguard proposals in the program. Specifically, the ESMP:

* Identifies risks to the environment and society associated with pesticides, construction sites, and their management method;
* Determines mitigation measures;
* Provides an implementation budget of mitigation activities;
* Provides a monitoring plan of activities.

This Plan is integrated within the framework of the action plans and other operational measures already developed/elaborated and proposed in the existing or prospective/prospect national strategies, thus strengthening the synergies and complementarities while avoiding duplication.

## 5.2.-Proposed environmental and social mitigation measures

### *5.2.1.-The infrastructure(s)*

* The 5 multipurpose centers as well as the rehabilitation works of the Tamarinier Laboratory will be carried out in compliance with the national building code available <http://uclbp.gouv.ht/download/cicps-2014-cnbh-fusion.pdf>, page 7/;
* During the construction phase, the firms will sensitize and inform their staff on safety and health at work. They should aim at preserving the health of workers, by taking appropriate measures against certain diseases including (i) respiratory diseases due to the large volume of dust and gases emitted during the works; (ii) cholera, (iii) gastroenteritis, diarrheal diseases and illnesses due to the changes in area and social habits related to the moving of workers and the quality of food and water consumed
* The totality of solid and liquid waste produced by the construction site, including packaging, food waste, etc…, will be collected and moved to an appropriate landfill and/or garbage. In particular, the used oil will be carefully collected in sealed containers, deposited in places where they do not threaten the environment and shall in no event be discharged into the lateral/side ditches or roadside in water bodies;
* If the work is not carried out during the rainy season, the soil should be watered during the work to avoid excessive dust emissions;
* In borrow areas, the surface topsoil will be cleaned and set aside prior to extraction of usable materials. Borrow areas should be redeveloped after the exploitation to restore as much as possible the morphology of the natural environment by filling excavations and restoring the topsoil in reserve/standby;
* The construction site machines and vehicles will have to use existing tracks, as much as possible, to access the construction site and avoid cutting through the surrounding soil. They must absolutely respect the cultivated land and the trees located outside the influence zones and circulation lanes, and avoid getting too close to residences;
* The firms will take into account the concerns of farmers during the drawings of access roads to the construction site and the quarries, in order to minimize the deterioration of agricultural land. The deviations’ layout will be made by the firm under the supervision of the local management committee. The RSE will be responsible for ensuring compliance with the residents rights with respect to the limitation of access;
* The companies will be encouraged to organize awareness campaigns on the management of work-related conflicts, the exploitation of quarries and natural resources of the locality and induced development. This activity should support the implementation of the project at all stages in order to manage the outbreak of potential conflicts between the workers and the population.

*(see appendix 2 for the mitigation measures of environmental and social risks)*

### *5.2.2.-Equipping the centers and laboratories*

The measures we recommend reflect the recommendations generally formulated for this type of building, more specific measures may be taken by the future health protection unit (UPS). For more information, the reader may/can refer to the document produced by the OIE available on the link: <http://web.oie.int/fr/normes/mmanual/pdf_fr/Volume%201_pdf/Chap%201.1.3._Gestion%20de%20la%20qualit%C3%A9_2008.pdf>

* The premises must be designed and equipped according to the organization of the facility;
* Necessary measures must be taken to ensure good lighting, sufficient ventilation of the premises and local evacuation of gases. The heating and lighting facilities must be appropriate to the type of activity of the establishment;
* All necessary measures must be taken to ensure safety, order and hygiene;
* The fire prevention measures are set by the MARNDR against fire and natural elements, according to the regulations in force;
* **All multipurpose departmental centers will be equipped with a poison control service and toxicovigilance**
* The storage of flammable liquids and materials must be made in resistant cabinets resistant to fire for at least 30 minutes;
* The chapels will be joined on ventilation ducts, which will be protected outside the establishment, by materials with a fire resistance of at least 90 minutes;
* The electrical installations must comply with the requirements for internal electrical installations;
* Installations using gas will conform to the guidelines in this matter for the gas and water industry;
* The access of unauthorized personnel will be controlled;
* A laboratory that performs analyzes beyond the scope of the fight against animal diseases is, in principle, operated by a veterinarian or under his supervision.
* If analyses in the context of meat inspection must be carried out, they will be assigned to a veterinarian who has training and sufficient practice in terms of veterinary bacteriology.

### *5.2.3.-Waste from control and research activities*

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* The waste from vaccination campaigns, epidemiological surveillance activities, laboratory analyses (***see section 3.3)*** will be collected immediately and confined by categories, using pure color codes to properly identify them.
* The people involved in the handling activities of phytosanitairy products will be provided with Personal Protective Equipment (PPEI)
* Prevent children and pregnant women’s access to phytosanitary products;
* The incinerators (built with refractory brick[[4]](#footnote-4)) will be installed in suitable locations on flat land, at least at 30 m of water bodies, with a chimney at least 3 m, equipped with filter and located at least 15 meters of residences.
* The fuel stored for the operation of the incinerator will be disposed in a dry place, in the shade, away from the residences and the incinerator itself, placed in a metal reservoir buried or raised on stilts to avoid spillage or leakage,
* All multipurpose centers and the laboratory, once rehabilitated, will be provided with a contingency plan for hazardous waste management and personnel trained for this purpose.
* It will be necessary to equip the Tamarinier laboratory with a micro disinfector for effluent treatment (150 liters/day at least) turnkey (ACTINI model or same category)

### *5.2.4.-Waste collection and transportation on-site*

To avoid the accumulation of waste used by officers in charge of the epidemiological surveillance and control, they must be regularly collected and transported to a central point of deposit inside the multipurpose departmental centers, to be eliminated there. We propose a disposal phase with the following 3 steps:

* ***Step 1*** : Agents involved in vaccination or epidemiological surveillance campaigns, will have a container where they will dispose of hazardous waste (infectious, sharp). These containers will be sent to a collection center at the municipality (particularly BAC). The sharp objects require that measures be taken to prevent injuries and infections during their manipulation within or outside of health facilities. They must be collected and managed separately from other categories of medical care waste: collection containers (safety boxes) must always be resistant to perforations and fluid leakage. The storage of sharp objects, to be disposed of, must always be in a place accessible only to qualified personnel. Once the safety boxes are sealed, they can be disposed of with other infectious waste incineration for example).

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* ***Step 2***: According to a timetable, to be defined or based on the importance of the volume collected, the BAC will send their stock to the multipurpose departmental center, from where they will be collected, and to be discarded.
* ***Step 3***: In the multipurpose center, the waste will be disposed in a confined area, sheltered from water, from sun, rodents, inaccessible to the general public. Incineration will be done preferably at night and special attention will be paid to the wind direction (*see Annex 4 on safety distances*).

### *5.2.5.-Special provisions on needles and syringes*

* All syringes, light bulbs, and disposable needles should be discarded immediately after use. Syringes, with or without needles should be considered (as) unsafe. Needles should never be covered. In addition, previously used needles and syringes or safety boxes should, in no circumstances, be disposed of, with regular garbage or in a hazardous manner without any prior treatment.

There are currently two ways to dispose of needles and syringes : ([*http://www.who.int/water\_sanitation\_health/medicalwaste/mw\_injections\_fr.pdf*](http://www.who.int/water_sanitation_health/medicalwaste/mw_injections_fr.pdf) ):

1. They can be collected in safety boxes that will be eliminated with infectious waste such as: incineration, which is the most common method since it minimizes the handling of syringes and needles. Other options include grinding or autoclaving;
2. They can be "treated on site." The treatment involves either the destruction of the needles by the use of a needle grinder or the separation of the needle from the syringe, by using equipment, drop directly into a puncture-resistant container

### *5.2.6.-Personal hygiene*

* + The basic personal hygiene is important to reduce the risks that may arise from the handling of waste from epidemiological surveillance activities. Administrators of the multipurpose centers and the people in charge of the planning should ensure that the cleaning facilities are made at the disposal of the people who handle these types of waste. This is particularly important in the processing and storage units.
  + One of the most basic measures of hygiene maintenance and one of the most important in the environment of centers is cleaning. The hands being the most common nosocomial infection vectors, hygiene is the primary preventive measure. A thorough washing of the hands with a sufficient quantity of water and soap eliminates over 90% of microorganisms thereon.
  + However, the effectiveness of the cleaning process depends entirely on this mechanical action, since neither soap, nor detergents possess antimicrobial activity and can have the opposite effect if applied superficially. Hand washing should, therefore, be performed in a standardized way.

### *5.2.7.- Procedures in case of accidental spill of phytosanitary products or waste*

*(*[*http://biogeosciences.u-bourgogne.fr/documents/hygiene\_securite/procedure\_deversement.pdf*](http://biogeosciences.u-bourgogne.fr/documents/hygiene_securite/procedure_deversement.pdf)*)*

The spillage of plant/agricultural health products or waste is probably the most common emergency involving substances, or infectious or hazardous waste category. The response procedures are essentially the same as the accidental spill/spillage involving waste or substances currently in use. These procedures should ensure that:

1. The contaminated areas are cleaned and, if necessary, disinfected;
2. The risk exposure of workers must be limited to a maximum during cleaning operations;
3. Impact on the establishment’s staff (multipurpose centers, laboratories, BAC) and the environment is as limited as possible.
4. A person responsible for emergency management should be appointed. His/her obligations will include the coordination of actions and the presentation of reports to managers and regulators. The staff must be trained to respond to emergencies and necessary equipment must be available at all times to ensure that the necessary measures can be implemented quickly and safely. Written procedures for different types of emergency situation(s) must be drawn up.
5. The accidental spillage of waste often only requires the cleaning of the place where the waste was spilled. However, in case of a spillage of infectious substances, it is important to determine the type of infectious agent; in some cases, an instant discharge may be necessary. In general, accidental spills/overturns of the most hazardous substances are held in laboratories rather than in services of the health facilities.

**Special provisions for needlestick injuries**

***(***[***http://www.who.int/water\_sanitation\_health/medicalwaste/en/manuel1.pdf***](http://www.who.int/water_sanitation_health/medicalwaste/en/manuel1.pdf)***)***

1. Due to their high potential for injury and contamination, (the) needles are one of the most dangerous elements that are handled in health facilities. All accidents must be reported to the veterinarian in charge or to a hospital and a reporting system should be established in each health facility. This information should be reported to the competent authorities at the central level.
2. Cuts with sharp objects or needlestick injuries should always be disinfected immediately. It is highly recommended that blood tests after such an injury to ensure that the person has not been infected by pathogens, especially hepatitis B and C in particular....

**Emergency measures to be taken in case of an accidental spillage**

* Evacuate the contaminated area.
* Immediately decontaminate the eyes and skin of exposed staff.
* Inform the person designated to coordinate the required actions.
* Determine the nature of spilled substances.
* Evacuate all persons who are not involved in the cleaning.
* Immediately alert the emergency poison control and toxicovigilance center
* Provide first aid and medical care to injured people.
* Secure the area to prevent the exposure of additional people.
* Equipping staff involved in cleaning with adequate protective gear.
* Limit the spread of spilled substances.
* Neutralize or disinfect spilled or contaminated substances if indicated.
* Collect all spilled or contaminated materials. [*Sharp objects should never be picked up by hand; brushes and collecting containers or other suitable instruments should be used]*. The spilled substances and contaminated disposable items/objects used for cleaning should be placed in garbage bags or suitable containers.
* Decontaminate or disinfect the area, wiping with squeeze stones absorbents. The squeeze stones (or other absorbent materials) should never be twisted during this process, because they can be contaminated again. Decontamination should be done starting from the least contaminated to the most contaminated portion, with changes in squeeze stone at each stage. Dry squeeze stones should be used in cases of strong spillage, use squeeze stones permeated with water (acidic, basic or neutral depending on the case).
* Rinse the area and wipe to dryness with squeeze stones absorbents.
* Decontaminate or disinfect all tools that have been used
* Remove the protective gear and decontaminate or disinfect them if necessary.
* Seek medical attention if exposure to hazardous materials occurred during the operation

### *5.2.8.- Capacity building*

To be effective, a policy for managing medical waste must be applied carefully, in a relevant and universal manner. Training is a crucial aspect for a successful improvement of management practices of medical waste. The overall objective of the training is to develop awareness on health, safety and environmental issues, related to the management of hazardous waste. It must focus on the roles and responsibilities of each actor involved in the process of waste management.

All the weaknesses in the handling of pesticides during field visits, demonstrates the interest of the preparation and implementation of a cascade training plan that will allow the different actors to acquire the minimum knowledge required to use and handle pesticides, (by) minimizing risks to/for health and the environment

To do this, the following topics are proposed and can be developed by certified trainers of the MARNDR. These are:

1. Pests
2. The pesticides and their applications;
3. The organization of a phytosanitary campaign;
4. The storage, handling and the transportation of pesticides;
5. Information on the risks and health and safety advice;
6. Basic knowledge on Handling and risk management procedures;
7. Port of Personal Protective and safety Equipment (PPE);
8. Risks related to the transportation pesticides;
9. Handling, loading and unloading procedures;
10. Equipment of vehicles;
11. Main points of the treatment and operation process;
12. Health and safety related operations;
13. Emergency and rescue procedures;
14. Technical procedures;
15. Maintenance of equipment;
16. monitoring of emissions;
17. monitoring of processes and residues;
18. Biological monitoring and exposure pesticides;

**The recommendations contained in Appendices 3 and 4 will undergo awareness sessions, printed on posters and placed in points of sales and storage of products.**

***The employees that need to be trained***

Separate training programs, but of equal importance, must be designed for the following categories of staff: *1)* *The directors of the multipurpose centers and of the BACs and the administrative staff responsible for the implementation of regulations on hazardous waste management, 2 ) veterinary staff (doctors, agents, nurses), 3) the cleaning staff, the carriers, the service personnel and the waste handlers, 4) municipal workers of solid waste collection and waste pickers.*

### *5.2.9.-The information and awareness/sensitization of the population*

In order to use pesticides with the support of farmers and ranchers, it is necessary to elaborate long-term strategies and effective approaches to inform and educate all stakeholders. The education and communication for health purposes should aim to get the people involved in the awareness of the challenges, to understand and change their behavior in order to obtain support for the effective use of pesticides and supports embedded in good conditions. It is therefore essential to develop active programs to provide accurate information on the activities (in the fight) against the vectors. In this regard and in addition to the prior recommendations, efforts concerning education of the population should be based on the following guidelines:

* Elaborate a communication plan;
* Use methods of media communication to educate farmers about the importance of the use of pesticides, embedded supports and inform him/her about possible risks, while showing him/her what might occur if we did not use these products;
* Disseminate the information throughout the year and not just during the launch of control operations;
* Provide farmers with the reasons for the choice of pesticides in the strategy of the fight against pest control;
* Train managers and field staff to communicate with the public and teach them how to provide educational messages in the population.

The information and awareness programs, especially towards the public in general and users, in particular, are essential to reduce the risk of disease and pesticide poisoning, and ultimately, lead to a real change in behavior. These programs must take a multifaceted characteristic and rely on multiple media. They will be delivered by trustworthy and respectful people. Wherever possible, information and awareness programs on pesticide management should be linked to the broader anti-vector control campaigns conducted at the community, departmental or national level. Whenever possible, the campaigns should be integrated into other existing programs, including the Ministries of Public Health and Population (MSPP), of the Environment (MDE), of Agriculture and Rural Development (MARNDR).

## 5.3.-The monitoring indicators proposed

**5.3.1.-Health and Environment**

* Available quantity of protective equipment;
* Level of knowledge of good management practices (***Appendix 3***);
* Level of safety at work for the people handling and using the products (***Appendix*** ***3,*** sections: Emergency procedures, Personal Protection of the staff, Fire Safety)
* Percentage of Handling staff having been subject to a medical checkup;
* Concentration level of residues on non-target (sample);
* Amount of domestic and aquatic animals affected;
* Respect the distance from the water bodies, the residences, communal areas (***appendix 4***)

**5.3.2.-Storage Conditions / management of pesticides and empty containers**

* Percentage of available and adequate storage facilities available and adequate facilities;
* Respect of measures associated with the transportation and storage (***Appendix*** );
* Number of installed fire extinguishers;
* Available quantity of suitable spraying equipment;

**5.3.3.-Training of staff/staff training - Information/sensitization** **of the population**

* Number of elaborated modules and guides;
* Number of training sessions carried out;
* Number of developed IEC tools;
* Number of agents trained by category;
* Percentage of the population touched by the awareness campaigns;

## 

## 5.4.-Implementation of the ESMP

The implementation of the plan will be provided by the Head of the Environmental and Social Monitoring (RSE). Under the supervision of the program coordinator and close collaboration with MARNDR’s environmental cell, the DDA, and the BAC, its focus will be on:

* Conduct field visits as many times as necessary to ensure proper implementation of proposed mitigation measures
* Identify the most sensitive phases in terms of environmental protection;
* Monitor continuously the conditions under which the infrastructure works are carried out
* Serve as a spokesperson to the various entities involved on the field on the implementation and monitoring of environmental measures;
* Ensure the proper management of the program’s documentation and archives for the Environmental and Social component;
* Anticipate the information and provide clear instructions to prevent or minimize nuisance;
* react early enough when certain activities are conflicting *a priori*;
* Conduct spot checks at regular intervals depending on the environmental effects of the different phases of the program;
* Certify all nonconformities with photos and written notes (*keep an updated list of outstanding issues*);
* Participate in coordination sessions, to appraisal-program meetings;
  + On the other hand, the RSE must be available to respond quickly to any unforeseen event that arise during the ongoing execution;
  + It will organize site visits for specialized units of the MARNDR and other ministries, the donor and/or environmental protection organizations, local, departmental and national authorities, and will support the implementation of an open public policy of information about the project in the environmental field;

As a guide, it will operate in a tracking device consisting of:

1. At the national level, by:

* DG/MARDNR (strategic supervision)
* DPV-DSA-Environmental/MARNDR Quarantine/Cell (operational supervision)

1. At the departmental and municipal level (in areas of the program), by:

* DDA
* BAC and GSBP (*closely followed/monitored*)

The close monitoring will be conducted in conjunction with the BAC and GSBP. The frequency of the use of alternative control methods against pests will also be evaluated. Finally, a particular emphasis should be focused on the monitoring and evaluation of the following: the control of non-targeted groups to know whether treatment operations against pests and parasites do not affect other living beings in this fight; entomological surveys to control the vector population and the effectiveness of treatment programs; health monitoring of handlers; and the choice of pesticides on the basis of environmental risks.

In environmental control and monitoring of pesticides, **the DPV in accordance with the MARDNR environmental cell** will be responsible for the control of distributors and applicators to ensure that only approved products are sold and used. The verification of the contents of components and pesticide residues and their adequacies to standards, particularly international, will be scheduled.

Finally, two (2) evaluations will be conducted; a mid-term internal one and external another external one during the month following the end of the program’s implementation (HA-L1094) to maintain the objectives of the action plan. The mid-term assessment will be carried out by the environmental unit, with the support of the DPV and the DSA. The purpose will be to determine the appropriate development of the management plan and the mid-term results. The financial partners, project beneficiaries, and other partners involved will participate in this assessment. The final evaluation of the pesticide management plan is to measure the effectiveness of its implementation and its performance and identify lessons learned. This assessment will be incorporated into the final evaluation of the modernization program.

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## 5.5.-Estimated budget for the implementation of the ESMP

**The estimated cost of the implementation of the ESMP is U.S. $ 488.430.** A good portion of this budget will come from Component I: Institutional Strengthening. The costs of supervision, monitoring, and audit will come from the Monitoring and Evaluation section of the program budget. The cost of managing waste generated in the construction phase of multipurpose departmental centers, will be supported by the construction firm and stated/mentioned in the delegate general contracting agreement.

*Table 3.-Indicative execution budget of the ESMP*

| **Activities** | **Budget ($US)** |
| --- | --- |
| 1. ESMP sharing workshop (3 days\*20 people) | 2,700 |
| 1. Development of procedures for managing hazardous waste on behalf of the LVCQAT and multipurpose departmental centers (Recruitment of a specialist consultant, 4 months) | 17,250 |
| 1. Acquisition and installation at the LVCQAT, of a micro disinfector the treatment of effluents[[5]](#footnote-5) (150 liters / day at least ) turnkey in hand ( ACTINI model or same category ) + training of technicians | $55,000 |
| Staff training in hazardous waste management, and in the assessment of health and environmental risks ( 35 people for 4 days) | $6,380 |
| 1. Strengthening of the poison control and toxicovigilance center and at the national level, each cell in a multipurpose departmental center. | $8,500 |
| Recruitment of a manager of the environmental and social monitoring (RSE to monitor the implementation of the ESMP to be provided in the Resources section of the program ( 12 months \* 1.350 \* 4.5 years) | $72,900 |
| 1. Strengthening of the environmental cell of the MARNDR’s environmental cell (training, equipped with logistics). | $15,700 |
| 1. Acquisition of small equipment: Personal Protective Equipment (PPE) for staff (envelope) | $13,500 |
| The management of various categories of waste (construction phase) (installation of bins, water points for workers, storage of fuel and oils in an elevated and secure location) $ 2,750 + 4,500 \* 6 centers for Tamarinier. | $21,000 |
| 1. 7 Installation of incinerators for the disposal of waste (infectious, sharp, cutting, etc.). (5\* 30,000) and (1 \* $ 100,000) | $250,000 |
| 1. Awareness campaign on the dangers associated with the use of phytosanitary products | $38,000 |
| 1. Regional coordination and monitoring of the implementation of the ESMP (entire length of the project) | $22,500 |
| 1. Environmental and social audit of the program (end of the 4th year) | $20,000 |
| **TOTAL** | **$488,430** |

# VI.-Compliance of ESMP with idb’s safeguard policies

Safeguard policies of the Bank whose recommendations are taken into account in the elaboration of the ESMP are the following:

## *6.1.-OP-704-A-2 –Risk and disasters management.*

The report includes an analysis of Haiti’s growing vulnerability to natural disasters and considers the need for buildings to be financed by the Bank, to be designed accordingly (section 3.4.).

## *6.2.-OP-102 – Availability of the documentation to the public.*

The ESMP will be available on the website of the MARNDR www.agriculture.gouv.ht/.

## *6.3.-B.02. Compliance with the national environmental legislation* and the international conventions approved

An analysis of the national legislation and of the international regulation, related to the program has been completed. The provisions of the 1954 Code of Hygiene and Public and Social Assistance of the 1987 constitution, the January 26th 2006 and Operational Plan MDE Decree (August 2006) were put to work in the ESMP (*see Appendix I for a detailed presentation*). Similarly, the provisions of certain conventions, of which Haiti is signatory, were discussed. These conventions include:

* ***The Stockholm Convention on Persistent Organic Pollutants (POPs),*** which aims/targets, among others, the elimination or restriction of 12 persistent organic pollutants (POP), of which several organochlorine pesticides that are no longer in use in many countries (aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene) (*United Nations Environment Program(me), 2004*).
* ***The ILO Conventions on safety in the use of chemicals at work (2001), which*** requires the establishment of a appropriate national system predicting/forecasting specific criteria applicable/relevant to the importation, classification, packaging and labeling of chemical products used in agriculture and for their banning or limitation.
* ***The International Code of Conduct for the Distribution and Use of Pesticides*** which sets voluntary standards for all public and private entities involved in the trade and use of pesticides, particularly in the absence of regulation.

## *6.4.-B.03–Environmental classification*

The program is classified in category B, which requires an assessment of environmental and social impacts and the elaboration of an Environmental and Social Management Plan (ESMP). This report summarizes the results of the environmental assessment and the main points of the ESMP

## *6.5.-B.05 – Environmental and Social Assessment. Identification of mitigation measures to control and/or eliminate the impacts.*

The environmental and social analysis of the potential impacts of the program was conducted in accordance with the safeguard policies of the IDB. This analysis has an important place in the evaluation of health and safety risks of persons for manipulating phytosanitary and zoosanitary products and mitigation and monitoring measures have been proposed.

## *6.6.-B.06 – Public consultation*

The program design has been the subject of several meetings between private and public actors and the donor community involved. At the central level, meetings were held between the Ministries of Trade and Industry (MCI), of Economy and Finance (MEF), of Health and Population (MSPP), of the Environment (MDE), of Agriculture, Natural Resources and Rural Development (MARDNR). On the field, meetings were conducted with the Departmental Directorate and the BAC

The private sector actors met were: the service operators services (OPS/PAHO), the animal health groups (GSB).

## *6.7.-B.07 – Monitoring of the implementation of the Bank’s safeguard policies.*

In the implementation device section, the ENVIRONMENTAL AND SOCIAL management Plan defines the monitoring and reporting of environmental mechanism of indicators and measures advocated.

## *6.8.-B.17- Precaution in the acquisition of goods and services*

The ESMP includes recommendations on the management methods of both liquid effluents, which will not be produced by the analytical laboratories and by incinerators to be installed in multipurpose departmental centers and at the central level.

***Appendix 1: The legal instruments/tools related to pesticides.***

|  |  |  |  |
| --- | --- | --- | --- |
| **Purpose of the legislation** | **Legal instruments/tools, type,**  **Reference** | **Ministries or agencies**  **Responsible/in charge** | **Categories of chemical products**  **covered/guaranteed** |
| Approval Committee (toxicology, ecotoxicology, Biology) | Legislation under consideration | Ministry of Agriculture  (MARNDR) | Pesticides used in agriculture |
| "Phytosanitary Legislation " | Legislation in preparation | Ministry of Agriculture  (MARNDR) | Pesticides used in agriculture |
| "Suspension and restriction of the use of some agro pharmaceutical products "(Chlordane, Dieldrin, Endrin, Aldrin, BHC, DDT, heptachlor..... as an active ingredient) | Legislation in preparation | Ministry of Agriculture  (MARNDR) | Pesticides used in agriculture |
| "Storage and conditioning of the products" | Legislation in/under preparation | Ministry of Agriculture  (MARNDR) | Pesticides used in agriculture |
| Codification of legislative texts concerning public health | Legislation in preparation | Ministry of Health | All chemical products |
| General regulation of the prevention suppression of food fraud by Food Code? Codex Alimentarius FAO/WHO Food Poisoning | Law in/under preparation | Ministry of Health | Food additives |
| Organic laws of the Ministry of Environment | Law in preparation | Ministry of Environment | All chemical products |
| ""law on the lives of animals" (Measures to protect animal health) | Law in preparation | Ministry of Agriculture | Veterinary medicines |
| Maritime regulation of facilities and other devices Pollution of the Sea) | Law in preparation | Ministry of Public Works | Petroleum products |
| Packaging, transportation and handling regulations of explosive substance " | Legislation in preparation " | Bureau of Mines and Energy | Explosives |
| Sanitation; safety and the working environment Code; | Law in preparation | Ministry of Social Affairs and Employment | Chemical products used in the workplace |
| Social security code on occupational diseases | Legislation in preparation | Ministry of Social Affairs and Employment | Chemical products used in the workplace |

***Appendix 2: Environmental and social risks related to the construction sites of the multipurpose departmental centers***

| **Environmental risks associated** | **Prevention or mitigation measures** | **Monitoring indicators / means of verification** |
| --- | --- | --- |
| **RISKS LINKED TO THE SITE/ TO THE LOCATION OF THE LAND IN RELATION TO NATURAL RISKS** | | |
| Land/field highly vulnerable to natural disasters | Strengthen the fence (if appropriate, with biomechanical structures (fences, quickset hedges, railings/ramps) | History of disasters that hit the site (frequency, damage) |
| Ensure/make sure that the construction firm is imbued with the principles of earthquake-resistant constructions |
| Flood risks | Inquire about the history of the site/field in regard to flooding (flood periods, water level, recorded damage, etc..) in order to adapt the construction in terms of the risk | History of floods that hit the site |
| **RISKS RELATED TO ACCESS TO THE SITE** | | |
| Atmospheric pollution due to the use of motor vehicles by the company’s staff to get on the site | Limit the use of motor vehicles. Designate a resident team that would work with the school’s management committee | Number of motor vehicles used by the firm to visit/access the site |
| **RISKS ARISING FROM THE DESTRUCTION OF ANIMAL AND PLAN RESOURCE BASE** | | |
| Deforestation: Destruction of vegetation to establish the building or as wood for cooking | Strengthen the perimeter of the land by planting trees, particularly fruit-trees | Quantity of destroyed trees relative to the amount of trees planted |
| Adapting whenever possible, the architecture of the building, according to the distribution of trees on the site |
| Risk of extinction/migration of bird species by destroying their ecological niche for deforestation | Avoid cutting endangered tree species. If this is the case, you must replant twice in other places on the site to protect rare species | Quantity and quality of species of extinct tree species |
| Deforestation due to the demand for local plant species (timber) | Use of imported wood in construction | Origin and type of wood used in construction |
| Purchase or lease of iron posts for formwork instead of using 2x4 wood made ​​with local species, which would reduce the pressure exerted on local natural resources (wood). |
| **RISKS RELATED TO AIR QUALITY** | | |
| Pollution by the release of unpleasant odors | Build temporary latrines during the construction phase for the workers.  Provide a toilet block for schoolchildren | Number of latrine outlets |

| **Environmental risks associated** | **Prevention or mitigation measures** | **Monitoring indicators / means of verification** |
| --- | --- | --- |
| **RISK OF ACCIDENTS/ACCIDENT RISKS DURING CONSTRUCTION WORKS** | | |
|
| Accident risk (injuries, fractures, etc..) For workers/laborers during the construction | Implementation of prevention measures/measures to prevent accidents and to comply strictly with the safety instructions and standards on the construction site | Existence and implementation of safety instructions on the construction site |
| Information and training session for workers / laborers on the use of tools and construction equipment/materials | Number of injured workers |
| Provision of materials and appropriate security tools to workers (clothing, helmets, scarves, gloves, goggles, boots, etc.). | Supervision and regular evaluation of construction Works |
| Accident risks related to the establishment of formwork structures during concreting | Verification on a regular basis of the strength of scaffolds and formwork to avoid the risk of accidents during construction | Assessment of the strength of the structures put in place by a competent third party |
| Accident risks for people attending/visiting the sites during the works | Prevent access to others on the site during construction. Delimitation/definition by a temporary fence of the site during construction (perimeter security) | Presence of a security perimeter on the construction site |
| Risk of diseases/disease risks related to air pollution during construction (respiratory diseases, risk of allergies) | Provision of materials and security tools (helmets, mufflers, gloves, goggles, boots, ...) to workers | Availability of and compliance with the security plan |
| Contamination risks associated with the use of chemical products (varnishes, paints, solvents, glues, etc....) | Wear Scarves/mufflers and gloves when handling chemical products that may cause contamination risks | Availability of safety instructions during use of products |
| Choice of the least toxic products and respect/conformance of doses and safety instructions dictated by the manufacturers before applying the product |
| **RISKS OF NUISANCES/NOISE** | | |
| Noise generated during the construction that could harm/affect people living in the vicinity of the construction site | Inform/advise the persons concerned of the noise that can be generated during construction works. | Number of complaints for nuisance/ presence of protective structures |
| Choice of appropriate times to perform construction works that can generate a lot of noise in the population. |
| Boundary/delimitation of the worksite by a protective structure capable of reducing noise generated during construction works. |
| **RISKS RELATED TO AIR QUALITY (POLLUTION)** | | |
| Degradation/deterioration of the air quality caused by dust and other particles generated during the handling and transportation of building/construction materials | Replanting and conservation of forested areas to purify the air and the surrounding environment. | Rate of plant cover |
| Use of protective equipment (masks, gloves, scarves/mufflers, etc.) by workers, against dust and the spraying/watering of the site, every morning before the opening of the sites. | Availability of security tools for workers |
| Choosing an appropriate period for the construction (ideally at the end of the rainy season) | Availability of a calendar for the construction |
| Release of harmful pollutants for the health of people attending/visiting the site | Minimize the use of harmful products during the construction (glues, varnishes, etc.). | Availability of safety instructions for each product |
| Risk of diseases related to the inhalation of dust generated during the construction | Wear mufflers/scarves to avoid inhalation of toxic substances during construction. | Availability of protective equipment/material |
| **RISKS RELATED TO POOR MANAGEMENT OF CONSTRUCTION WASTE** | | |
| Contamination and accident risks related to improper/inappropriate handling of construction waste | Limit the risks associated with the handling of waste generated by the construction, by putting in place a waste management and safety measures to help workers | Control of the salubrity/hygiene conditions of the environment/field |
| Achievement/realization of leaflets suggesting/proposing the actions to be taken/measures to take by workers to better manage hazardous waste | Training plan for workers |
| Pollution related to/associated with waste generated during the construction excavation (land/soil, rocks, etc.). | Use and recovery of waste generated/produced during excavations for backfill and for the rehabilitation of holes at certain stretches/sections of the road. | Implementation of a plan for using/the use of waste during excavations |
| Pollution of the construction site by construction waste during the works (cement bags/pouches, waste of unused wood, wire/barbed wire, etc.). | Implementation of a recycling/use plan of cement pouches to cover/conceal school supplies and as an energy source, | Recycling plan for cement bags |
| Recycling cement bags for the manufacture of briquettes | Recycling plan for cement bags |
| Avoid the use of cement pouches for the packaging of products intended for nutrition, which could result in a risks of poisoning and contamination | Recycling plan for cement bags |
| **RISKS RELATED TO ION TO THE POLLUTION OF GROUND WATER AND SURFACE WATER (see previous phase)** | | |
| **RISKS RELATED TO AIR POLLUTION** | | |
| Pollution due to smoke from cigarettes consumed by people working in the building and/or in the immediate vicinity | Booking/reservation of a little airy space/area for smokers, provided/equipped with an air purifier/ employee awareness on the risks associated with tobacco use in order to discourage them | Number of smokers from the total number of employees |
| Pollution due to the release of unpleasant odors from latrines and septic tanks | Establishing a structure to evacuate odors generated from latrines and pits/ditches | Air quality of the environment/field |
| Regular cleaning and maintenance of latrines using the disinfectants suitable for this purpose. | Calendar for cleaning latrines |
| Poor air renewal/poor ventilation causing the growth of bacteria, mold | Willingness of devices to facilitate proper/adequate ventilation inside the building which provides thermal comfort and reasonable humidity / brightness in the building | Disposal/disposition plan of devices |
| **RISKS RELATED TO NUISANCE/NOISE POLLUTION AND NOISE GENERATED DURING CONSTRUCTION** | | |
| Noise generated during the repair works of the building and car traffic/circulation | Choosing the right time to perform the work to minimize the disruption of neighborhoods | Number of complaints received |
| Informing/giving notice to people living near the building on the potential noise created during the works | Number of persons informed/aware out of the amount of people involved |

**Health effects (construction site phase)**

| **Component** | **Positive and negative impacts** | **Enhancement and mitigation measures** |
| --- | --- | --- |
| Transmitted diseases | Modification of the exposure to the following diseases:   * Waterborne diseases, such as diarrhea and cholera, related/due to poor sanitation and poor use of water for domestic purposes, leptospirosis associated with rodents’ urine. * Water-related diseases, such as malaria, onchocerciasis and filariasis, associated with increased breeding/reproduction of disease and contact vectors. * Diseases caused by poor hygiene, such as scabies and skin infections, related to poor sanitary and hygienic conditions. * Sexually transmitted infections, such as HIV / AIDS, associated with migration, construction and economic changes. | * Ensure an adequate supply of potable water so as to meet additional needs. * Facilitate the establishment of temporary latrines and other adequate sanitation facilities. * Inform, educate and communicate with respect to safe water use and safety measures at work. * Encourage environmental management to control disease vectors; * Have/dispose of first aid kits to respond to early signs of diseases and ensure that there is a health center nearby; * Strengthening of health services to ensure prompt diagnosis and treatment. * Implement the disease prevention of HIV/AIDS for men and women through the promotion of health, a wide distribution and use of condoms, offering employment opportunities to women affected by the project and family housing for construction workers. |
| Injuries | * Increased risk of accidents for the local population due to the presence of construction sites and a greater circulation. * New or increased violence within the households and the community, for example due to conflicts over water. * Work Injuries caused by a lack of attention to safety. | * Develop, communicate and implement safety and prevention measures for the population (such mechanisms to force speed reductions) and control access to the construction site * Provide stabilization and evacuation of the injured/injured persons. * Preventing violence within the community and households through education and conflict resolution related to the granting of temporary jobs. |
| Psychological disorders and wellbeing | * Well-being associated with improved/enhanced income, stability, employment opportunities, facilities, health, delegation of power, education and training. * Temporary stress and anxiety related to the presence of the construction site, rapid social change, the loss of traditional authority, uncertainty and the loss of control, loss of employment, exclusion, etc. | * Refer to the proposed measures on the other cross-cutting themes because they include several measures relating to psychosocial disorders and factors contributing to well-being. |

***Appendix 3 : Recommendations on the storage conditions of phytosanitary products and other chemical products***

| **Activities** | **Recommendations** |
| --- | --- |
| **Storage of pesticides** | Pesticides must be stored in compliance/according to with the following minimum standards:   * The pesticides should be stored in an *appropriate, well lit, well ventilated, non-flammable, safe, away from other materials, away from heat sources* place * All storage shelves should be of non- absorbent material * The storage area of pesticides should be able to retain any overflow (to prevent any running water contamination) * Adequate devices for measuring and mixing pesticides must be available * Emergency devices (collyrium/eyewash, running water, sand bucket) must be available to treat the workers in the event/in case of contamination or spillage. * The keys and access to the storage location must be limited to personnel with appropriate training to handle pesticides * A procedure, in case of an accident, a list of telephone numbers as well as an indication of the location of the nearest phone (within 10 m of storage) must be available at the storage area and close to the nearest phone * Inventories must be kept/saved and available at any time in the operation office operation * All pesticides must be stored in their original packaging * Only allowed phytosanitary products for the protection of arable crops should be stored on farm * The powders have to be stored on shelves above the fluids * Danger warning signs should be placed on the access doors |
| **Location of the Storage area/site** | • **The site must be situated/located away (from)**   * Residential buildings, schools, hospitals, commercial areas, premises provided/planned for the manufacture or storage of foods * water streams/sources * floodplain/flood area * fuel depots * Products intended for human or animal consumption * power lines * sensitive crops   • **In a one-storey/ground level building**   * Prohibition of housing above the facilities * The premises must be located at best to enjoy the natural ventilation |
| **Access to the premises** | * Easily accessible to all vehicles (supplier, customer, emergency) * At least two entrances, of which, one leading directly to the outside * Must be protected against intrusions /trespassing * Metal doors equipped with security locks * Windows with metal grids/gratings * Anti-intruder/ break-in fence * Panels, for example: no admittance signs/closed to the public |
| **Main design criterion of the storage area** | |
| **Outside the premises/area:** | * There should be/make sure to provide easy access to the premise for the delivery trucks and waste disposal * A door opening outwards * A water source equipped with a sink provided with soap and a towel * A closet for your own protection equipment/protective equipment * All-purpose/Multipurpose * Visible signs/icons: safety instructions (eg. skull, no trespassing, no smoking, eating and drinking) |
| **Inside the premises/area:** | * A visible emergency number and a list of approved products in stock (updated) * A locked cabinet for highly toxic products * Marked tools having a specific use, reserved exclusively for the treatment * Absorbent materials (specific sand, cat litter, vermiculite, sawdust, etc.) * There must be a clean and solid table for the dosage equipment for table (balance, cups, buckets) * Keep a space available for storing empty containers |
| **The floors must be** | * Non-combustible and smooth * Consisting of a concrete slab/paving stone * Each entry must be provided with a retention threshold of at least 20 cm (of height) |
| **The roof** | * must be able to collapse in case of fire * consists of lightweight/light materials * must be overflowing/to prevent potential water entries * Where the roof is of solid construction, the evacuation of smoke and heat must be ensured. * The storage area/premise must not have a ceiling for ventilation and allowing the escape of combustion fumes and gases |
| **The walls (and the bearing elements of the roof) must be** | * In combustible materials * Reinforced concrete or solid brick or solid/full concrete block * Coated/covered with a coating/primer of cement mortar |
| **Ventilation of the storage area** | Given the risks related to the inhalation and importance of emissions/fumes in/under warm climates,   * The storage area must be thoroughly ventilated * All underground storage areas/premises should be avoided/prohibited; * Natural ventilation is provided by three types of air vents placed perpendicularly to the prevailing wind direction: (1) at the roof level, (2) in the upper part of the walls, (3) in the lower part of the walls * These vents may be formed by screen walls in concrete, lined with a protective wire against the pests. * For better ventilation, it is recommended to replace the higher vents above by air extinguishers that must function 24/24 hours. * Do not place the goods/merchandise before/ahead of the extinguishers, so as to not reduce their effectiveness |
| **Electric facilities** | **The electric equipment:**   * Must be put in place and maintained by a qualified electrician * Must be properly grounded and protected against overloads * The electrical wiring must be embedded * For safety reasons, you must disconnect the power supply from outside the building * No switch nor electrical outlet should be installed within the local /premise * The lighting should be sufficient/adequate to conduct the management of the store, ease to read product labels and other technical manuals * Natural lighting is provided by windows equipped with panes/glass or Naco * In the case of a storage area without power, it is recommended to provide for translucent areas in the roof * Artificial lighting can be installed above the aisles of the local/premise * Lamps should never risk being damaged during the handling or heating of stored products * Forbidding/banning incandescent bulbs in favor of fluorescent tubes |
| Storage of products, inventory management and safety  According to their function  Insecticides, fungicides, herbicides, etc.  This classification is preferable for small inventory | **Receipt of products/receiving products**   * During discharge, you must check whether the nature, the quantity and conditioning/packaging of the products correspond to the order * Ensure the compliance of products with the official permission/authorization * All defective packaging shall be refused if the repackaging is not available on site * Save the products entered * Do not let products stay on the unloading/discharge area   By risk categories: inflammable, combustible, corrosive, combustive, etc. In this case, the different groups must be clearly separated from each other/one another:  • Highly toxic products in a locked cabinet  • Store the most toxic products at the bottom of the shelf  • Store liquid products below the powders  The direction of arrows and positioning of the packaging must be respected during the storage:  • Place the older products ahead of the latest/most recent products  • No product shall be stored on the ground because of the risks of damage/deterioration to the packaging as a result of moisture/humidity  • Before beginning with the storage of phytosanitary products, it is necessary/essential to carefully examine the information concerning the labels and the packaging |
| **Staff/personnel safety** | It is recommended to permanently/continuously provide:  • Work gear/clothing that covers the whole body, arms, legs  • A PVC apron  • Impervious/waterproof gloves (nitrile, neoprene)  • Rubber boots  • Goggles/eyewear or a safety visor  • Anti-dust masks  • A respiratory mask/respirator  This equipment must be maintained and cleaned |
| Management of the stock | * The good management of the stock is essential for both the management and the safety of the premise/place * Input/outputs notebook * Periodic inventory and inspection procedure |
| Hygiene equipment | The Storage place must be equipped close to/near  • Sanitary facilities/toilet blocks  • A shower  • A washbasin/sink |
| **Fire safety** | • Absolute prohibition of smoking and of using open flame  • Understandable, permanent and maintained signs  • The room must have extinguishing means, adapted to its size and to the stored products  • The extinction measure/means must be adapted to the type of fire: inert powder, water sprayed with additives, carbon dioxide  • At least one water source |
| **Emergency procedures** | |
| **Reaction/response in case of accidental spillage/spreading** | **The room must dispose of a minimum equipment**   * Put on the full/complete protective clothing/gear * Separate/alienate the staff that might be contaminated * Separate/split up other packages that might be contaminated/sullied * Try to stop or reduce the spreading * Provide the disposal equipment on-site * Capture the spreading/ * Pour the absorbing material on the spilled product * Collect the contaminated packaging * Rinse the contaminated soil and removal equipment thoroughly with water * Collect the rinse water into a barrel/keg and label the barrel carefully * Remove/eliminate the entirety |
| **Reaction in case of poisoning** | * It is recommended to provide the staff in charge of the premise with a minimum response equipment * The staff should be able to wash themselves as necessary, and decontaminate their equipment * Staff should be trained and should know how to dispense/distribute first aid * The poisoned/contaminated person must be directed to the nearest medical center |
| Practical recommendations | * Emergency plan * Equipment implementation plan * Training   All staff /personnel should be familiar with the use of protective equipment and practice on how to deal with emergencies/emergency situations   * Fire drills |
|  |  |

**Appendix 4.-Recommendations on distances**

***Storage of pesticides (November 16, 1953 decree)***

In terms of storage, it is forbidden to store a pesticide:

* to/within less than 30 meters of a water stream/waterway or water body
* to less than 100 m from a water catchment facility for the production of spring water or mineral water or power of an aqueduct (...).
* to less than 30 m from all facilities of surface water catchment/abstraction for human consumption or any facilities of groundwater catchments.

***The preparation of pesticides, it is prohibited to prepare a pesticide (Pan American Sanitary Code signed in Havana November 14, 1924):***

* to less than 30 meters of a water stream/waterway or waterbody
* to less than 100 m from a water catchment facility for the production of spring water or mineral water or power of an aqueduct, (...)
* to 30 m of all surface water catchment facilities for human consumption or any facilities of groundwater extraction.

***Application of pesticides/Pesticides application (Pan American Sanitary Code signed in Havana November 14, 1924****)*

It is prohibited to apply pesticides for agricultural purposes:

* to less than 3 m of a watercourse or body of water or a ditch where the air flow is> 2 m²
* to less than 1 m from a water stream/waterway or water body or a ditch whose air flow> 2 m²

***Protection of buildings (FAO, 2010, International Code of Conduct on the Distribution and Use of Pesticides)***

The building is protected in the absence of the development plan/scheme or outside of the urban perimeter (case of Haiti) when:

* a residential house and 30 m all around corresponds to the protected building. This is certainly the most common case in most agricultural areas.

However, if the property line is less than 30 m from the house, 20 m for example, the protected building becomes:

* the residence/house plus 20 m ;
* a public building/edifice and the 30 m strip around the perimeter;
* a tourist accommodation establishment and 30 m strip around the perimeter;

***This is also the location/site***

* of a recreational, leisure, fitness or cultural center;
* of a campground;
* of a municipal park or a public beach;

1. *Transmission of the Hepatitis B virus and Hepatitis C viruses and human immunodeficiency by injections risks in developing countries: Modeled regional estimates. Bulletin of the WHO, Collection of articles # 2, 2000, 44-49* [↑](#footnote-ref-1)
2. [*https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR\_SC.12\_presentation.2Haiti\_SPCR.pdf*](https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR_SC.12_presentation.2Haiti_SPCR.pdf)[*https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR\_SC.12\_4\_Strategic\_Program\_for\_Climate\_Resilience\_for\_Haiti.pdf*](https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR_SC.12_4_Strategic_Program_for_Climate_Resilience_for_Haiti.pdf). [↑](#footnote-ref-2)
3. *Jean André VICTOR, Jean André Victor, Haitian Code of Environment laws, UNDP, Port-au-Prince Haiti, 1995, P.12*

   [↑](#footnote-ref-3)
4. [www.who.int/water\_sanitation\_health/medicalwaste/gestiondesdechetsguide.pdf](http://www.who.int/water_sanitation_health/medicalwaste/gestiondesdechetsguide.pdf) page 6 [↑](#footnote-ref-4)
5. *For blood samples (in particular) contaminated with B. anthracis/anthrax, if the culture is not done quickly, the bacteria will disappear after a few moments (Coal guide, levies, www.invs.sante.fr/publications/ page 25 2005/guide\_charbon/guide\_charbon.pdf*

   [*www.invs.sante.fr/publications/2005/guide\_charbon/guide\_charbon.pdf*](http://www.invs.sante.fr/publications/2005/guide_charbon/guide_charbon.pdf) *page 25* [↑](#footnote-ref-5)