REPUBLIC OF SEYCHELLES

A Strategic Approach to the Management of Chemicals and the Implementation of SAICM in Seychelles

PART 1: NATIONAL CHEMICALS PROFILE PAPER

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(a) INTERNATIONAL POLICY FRAMEWORK

The call for a global symposium begun on 22 December 1989, whereby the United Nations General Assembly called for a meeting that would devise strategies to halt and reverse the effects of environmental degradation "in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries". The call requested a far-reaching effort from Heads of States and Government alike to address key issues relating to environmental sustainability in the context of

- Patterns of production — particularly the production of toxic components, such as lead in gasoline, or poisonous waste
- Alternative sources of energy to replace the use of fossil fuels which are linked to global climate change;
- New reliance on public transportation systems in order to reduce vehicle emissions, congestion in cities and the health problems caused by polluted air and smog;
- Greater awareness of and concern over the growing scarcity of water.

At the climax of the resulting Rio-1992 Earth Summit, facilitated by the United Nations Conference on Environment and Development (UNCED) secretariat, the formulation of an action plan took place, which formed the key principles of Agenda 21. Agenda 21, adopted by UNCED on 14 June 1992, served as the international community's response to that request.

This wide-covering blueprint for action, aimed to achieve sustainable development worldwide, entailed the Rio Declaration on Environment and Development, the Statement of Forest Principles, the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity.

Chapter 19 of this agenda underscored the fact that thousand of chemicals are used in every aspect of human endeavour with little knowledge of their long-term health and environmental risks. With ninety-five per cent of chemical manufacturing involving only 1,500 chemicals, it was recognized that crucial data for risk assessment are lacking for many of them. The Agenda made recognition of the fact that international labelling standards exist but are not yet available in the workplace or the home in all parts of the world.

Chemicals banned in one country as hazardous are routinely sold and shipped to other countries, often to developing nations. It was stipulated that some industrial areas have been grossly contaminated by chemicals, resulting in damages to human health, genetic structures and human reproduction. Lack of information and information-sharing mechanisms may have a serious impact on human health, the environment and on future generations.

Agenda 21, chapter 19 thus made proposals to:

- An improved risk assessment strategy such as to build knowledge within the communities when dealing with toxic chemicals.

- The reduction of risks by using less hazardous chemicals or non-chemical technologies such as substituting biological pest controls for pesticides.
- Initiation of risk reduction programmes, which would take into account the entire life cycle of chemicals.

- The taking of specific action in areas such as emission inventories, labelling, safe handling and exposure regulations and phasing out chemicals that are especially toxic or persistent in the environment.

- The adoption and usage of the international labelling standards, so that they exist in the workplace and the home in all parts of the world. This involves a multilingual system of pictograms. Labelling should not be used to restrain international trade.

- The establishment of chemical accident response centres and national poison control centres to ensure prompt diagnosis and treatment of poisonings;

- The encouragement of capacity building in the context of national management of chemicals;

- Strengthening of government policies to improve monitoring, detection and prevention measures as well as the enhancement of regional and international cooperation.

Chapter 20 of the same Agenda made attempts to address the uncontrolled production and disposal of hazardous wastes, which often leads to problems such as high environmental cost to air, water, land, health and human productivity. It was noted that countries produce and dispose of hazardous wastes on an increasingly large scale. Many — especially developing countries — are unaware of the hazards. Too often hazardous wastes have been shipped to nations that are unfamiliar with the dangers. Industrialized countries spend billions of dollars to clean up hazardous sites and evacuate residents from areas that have become health hazards.

Chapter 20 thus made proposals to:

-The Setting up of hazardous waste reduction schemes, which shall include the setting of goals for using cleaner manufacturing technology, recycling, substituting for hazardous materials and improving the transfer of clean technology.

-Urging of governments to make use of domestic handling and recycling facilities for their own hazardous wastes.

-The improvement of procedures for handling, storage, disposal and destruction of hazardous wastes over their entire life cycle.

-The enactment of improved information exchange at national, regional and international level in the context of cost/benefit guidelines for hazardous waste production and management. International cooperation is required to disseminate information on risks, to control trans-boundary shipping and to spread information on new technologies that will reduce the amount of hazardous wastes produced or improve methods for handling and disposal. Cooperation is also required to design, develop and strengthen individual nations' hazardous waste programmes and centres.

-The enactment of legislation that supports source reduction through the “polluter pays” principle, through which Governments will be requested to adopt regulations that treat wastes in a manner consistent with regulations in the country of origin.

-A ban on exporting wastes to nations that do not have the capacity to deal with them in an environmentally sound way is proposed. Cooperation on regional waste recycling, reuse and recovery programmes is proposed. Several existing international agreements and conventions on traffic in hazardous wastes were proposed to be strengthened. Governments are encouraged to preventing illegal traffic in hazardous wastes by use of proper legislation, monitoring and enforcement programmes to ensure that penalties are in place and enforced.

The pre-implementation planning process of chapter 19 of Agenda 21 was set in 1994 in Stockholm, Sweden, whereby the conference saw representatives from more than 100 countries. The conference saw the establishment of the Inter-governmental Forum on Chemical Safety (IFCS), through which countries now regularly discuss their activities and priorities for the sound management of chemicals.

The forum discussed Programme Area E of Chapter 19 which deals with "Strengthening of National Capabilities and Capacities for Management of Chemicals". It recommended that "national profiles to indicate current capabilities and capacities for management of chemicals” be made available by all countries for a better assessment of the national capacity needs. The IFCS saw three more meetings in 1997, 2000 and 2003 at which further priority activities were adopted. At the fourth IFCS meeting held in Bangkok, Thailand in 2003, it was noted that 71 countries had prepared national profiles based on a multi-stakeholder approach and an additional 27 were in the development process.

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) originally opened for signature in 1989, entered into force on 5 May 1992 and serves as an international treaty designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs). Article 4 of this Convention called for an overall reduction of waste generation by encouraging countries to keep wastes within their boundaries and as close as possible to its source of generation. As a SIDS, Seychelles acceded to the Convention in 1993 and it has been implemented into the national law through the Environment Protection Act, 1994.

The enactment of the Basel Convention, serving as an enforcing tool of chapter 20 of Agenda 21 of the Rio Summit, was also intended to minimize the amount and toxicity of wastes generated, to ensure their environmentally sound management as closely as possible to the source of generation, and to assist LDCs in environmentally sound management of the hazardous and other wastes they generate.

In 1995, the Governing Council of the United Nations Environment Program (UNEP) called for a global effort to be undertaken in dealing with persistent organic pollutants (POPs), which are defined as "chemical substances that persist in the environment, bio-accumulate through the food web, and pose a risk of causing adverse effects to human health and the environment". Following this, the IFCS and the International Program on Chemical Safety (IPCS) prepared an assessment of the 12 worst offenders.

Negotiations for the Convention were completed in Stockholm, Sweden on the 23 May 2001 and the resulting agreement was consequently termed as the Stockholm Convention. The convention entered into force on 17

May 2004 with ratification by an initial 128 parties and 151 signatories, which by end of 2008, had increased to 168 parties. Co-signatories agreed to outlaw nine of the "dirty dozen" chemicals, limit the use of DDT to malaria control, and curtail inadvertent production of dioxins and furans. On the 8th of May 2009, the first set of new chemicals to be added to the Convention was agreed at the Geneva Conference.

In 2001, The Global Environment Facility (GEF) was selected as the interim financing mechanism for the Stockholm Convention on persistent organic pollutants and the GEF Council approved guidelines for enabling activities for the Convention which, *inter alia,* recommended the preparation of a National Profile as a key output of a National Implementation Plan for the Convention.

On September 10, 1998, the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides (Rotterdam Convention) in International Trade was ratified and adopted by 165 countries. Jointly administered by the UNEP and United Nations Food and Agriculture Organization (FAO), the Convention promotes the shared responsibilities and cooperative efforts among the Parties for the international trade of certain very hazardous chemicals, in order to protect human health and the environment from potential harm. The convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labeling, include directions on safe handling, and inform purchasers of any known restrictions or bans. Parties can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged make sure that producers within their jurisdiction comply.

The Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by Parties and which have been notified by Parties for inclusion in the PIC procedure. One of the main provisions of the Convention is the obligation to inform other Parties of any national decision prohibiting or strictly regulating a product, and if a Party intends to export a product, it must inform the importing Party that this export is planned, prior to the first shipment and every year thereafter. This means that formal permission must be obtained to export to a particular country; the exporting Party must also ensure that a material safety data sheet is sent to the importer, and every export shipment must be clearly labelled.

At the turn of the Millennium, the Millennium Summit was a held three days from 6 September lasting to 8 September 2000 at the United Nations headquarters in New York City. By the end of the Summit, world leaders ratified the United Nations Millennium Declaration, from which the Millennium Development Goals (MDG) were particularly promoted in the years following the summit. The delegates at this summit agreed on the following eight chapters:

1. Values and Principles
2. Peace, Security and Disarmament
3. Development and Poverty Eradication
4. Protecting our Common Environment
5. Human Rights, Democracy and Good Governance
6. Protecting the Vulnerable
7. Meeting the Special Needs of Africa
8. Strengthening the United Nations

A decade after the UNCED's adoption of Agenda 21 in the first World Summit in 1992 in Rio, the second World Summit on Sustainable Development, (WSSD) was held in Johannesburg, South Africa from 26 August to 2 September 2002. It built on the achievements made since UNCED and recognised the potential for synergy

across the implementation of the various chemicals-related international agreements and the need for related coordination within countries, and agreed on a Plan of Implementation.

The Johannesburg Plan renewed the commitment, as advanced in Agenda 21 and thus presents an exciting opportunity for today's leaders to adopt concrete steps and identify quantifiable targets for better implementing the same agenda, which *inter alia* entailed the sound management of chemicals throughout their life cycle and of hazardous wastes (*Chapters 19 and 20 respectively*).

It aimed to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent science-based risk assessment procedures and science-based risk management procedures, taking into account the precautionary approach, as set out in principle 15 of the Rio Declaration. The plan also aimed at supporting developing countries in strengthening their capacity for the sound management of chemicals and hazardous wastes by providing technical and financial assistance.

The first session of the International Conference on Chemical Safety (ICCM-1) and the process to develop the Strategic Approach to International Chemicals Management (SAICM) were co-convened by the United Nations Environment Programme (UNEP), the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) and the IFCS. Held Dubai, UAE, from 4 to 6 February 2006, ICCM-1 saw a gathering of governments, intergovernmental and non-governmental organizations as well as other stakeholders, whereby the finalization and adoption of the SAICM took place.

The participating organizations of IOMC were the Food and Agriculture Organization of the United Nations (FAO), the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), UNEP, the United Nations Industrial Development Organization (UNIDO), the United Nations Institute for Training and Research (UNITAR) and the World Health Organization (WHO).

The Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the World Bank joined the IOMC participating organizations and IFCS in a steering committee established to oversee the Strategic Approach (SA) development process.

Forum VI also considered proposals for the future role and functions of the IFCS, options for its institutional arrangement, its possible relationship to the ICCM, and its contribution to the implementation of the SAICM and the work of other chemicals-related organizations and institutions and adopted the Dakar Resolution on the Future of IFCS.

The Dakar Resolution defined the future role and functions of the Forum and invited ICCM to decide, at its second session, to integrate the Forum into the ICCM-1 by establishing IFCS as an ICCM advisory body. In addition, the Conference requested UNEP to establish responsibility for the SA secretariat and assume overall administration. Both UNEP and WHO have lead roles in the secretariat in their respective areas of expertise. The ICCM shall serve as the platform to undertake periodic reviews of the SA through the receipt and review of reports from all relevant stakeholders on progress in implementation of the SA. This is with a view to weigh progress against the 2020 target and taking strategic decisions, programming, prioritizing and updating the approach as necessary as well as to disseminate information as appropriate.

During its Third Session in Bahia, Brazil, October 2000, the IFCS recommended that countries should increase their efforts to systematically develop an integrated and coordinated approach to manage chemicals safely. Countries should therefore prepare and regularly update National Profiles (NP), identify capacity building

priorities, and develop sound national action plans for them. SAICM is thus a policy framework to promote chemical safety around the world, building on the IFCS Bahia Declaration and Priorities for Action Beyond 2000, which constitutes the Dubai Declaration on International Chemical Management, the Overarching Policy Statement and the Global Plan of Action (GPA). SAICM has as its overall objective the achievement of the sound management of chemicals throughout their life cycle so that, by 2020, chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment. This "2020 goal" was adopted by the WSSD in 2002 as part of the Johannesburg Plan of Implementation. This objective is set to be achieved, among other ways, through the implementation of activities set out in the GPA. Along with some 150 other countries, Seychelles is a party to SAICM, signing the Memorandum of Agreement (MoA) in June 2011 (refer to part C).

The Dubai Declaration on International Chemicals Management makes expressing high-level political commitment to SAICM, whereas the Overarching Policy Strategy sets out the scope, needs, objectives, financial considerations underlying principles and approaches and implementation and review arrangements for SAICM. Objectives are grouped under five themes: risk reduction; knowledge and information; governance; capacity-building and technical cooperation; and illegal international traffic.

The Declaration and Strategy are accompanied by the GPA that serves as a working tool and guidance document to support implementation of SAICM and other relevant international instruments and initiatives. Activities in the plan are to be implemented, as appropriate, by stakeholders, according to their applicability. The GPA of the SAICM initiative is structured into 36 main work areas and associated activities that may be undertaken voluntarily by stakeholders in order to pursue the commitments and objectives expressed in the Dubai Declaration on International Chemicals Management and the Overarching Policy Strategy, which in turn, reaffirms the commitment expressed at the WSSD in the Johannesburg Plan of Implementation. The GPA is set as a guidance document to be reviewed, as appropriate, and the activities to be considered and implemented, as appropriate, by stakeholders during the implementation of the SA, according to their applicability.

The GPA thus aims to ensure that, by 2020, chemicals or chemical uses that pose an unreasonable and otherwise unmanageable risk to human health and the environment based on a science-based risk assessment and taking into account the costs and benefits as well as the availability of safer substitutes and their efficacy are no longer produced or used for such uses;

Table I-1 provides a summary list of the 36 work areas and the numbers of the possible activities associated with them. The activities set in Table 1 are as appear in the SAICM GPA text.

WORK AREA	ACTIVITY
Assessment of national chemicals management to identify gaps and prioritize actions	1, 165, 207
Human health protection	2–6
Children and chemical safety	7–10, 150–153, 245–246
Occupational health and safety	11–21, 138–149, 255
Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	22, 99–101, 168, 248–250
Highly toxic pesticides risk management and reduction	23–30, 114–117
Pesticide programmes	31
Reduced health and environmental risks of pesticides	32–42
Cleaner production	43–46, 118, 238–242
Remediation of contaminated sites	47–48, 243
Lead in gasoline	49, 156, 244
Sound agricultural practices	50–53, 158–160
Persistent, bioaccumulative and toxic substances (PBTs); very persistent and very bioaccumulative substances; chemicals that are carcinogens or mutagens or that adversely affect, inter alia, the reproductive, endocrine, immune or nervous systems; persistent organic pollutants (POPs)	54–56
Mercury and other chemicals of global concern; chemicals produced or used in high volumes; chemicals subject to wide dispersive uses; and other chemicals of concern at the national level	57–60, 157
Risk assessment, management and communication	61–67, 127–137, 247
Waste management (and minimization)	68–73, 161–162, 258–262, 272–273
Formulation of prevention and response measures to mitigate environmental and health impacts of emergencies involving chemicals	74–79, 237
Research, monitoring and data	80–87
Hazard data generation and availability	88–97
Promotion of industry participation and responsibility	98, 189–192
Information management and dissemination	102–113, 256
Life cycle	119–123
Pollutant release and transfer register (PRTRs) creation of national and international registers	124–126, 177–180
Education and training (public awareness)	154–155
Stakeholder participation	163–164
Implementation of integrated national programmes for the sound management of chemicals at the national level in a flexible manner	166–167
International agreements	169–176
Social and economic considerations	181–188, 257
Legal, policy and institutional aspects	193–198
Liability and compensation	199
Stock-taking on progress	200–201
Protected areas	202–203, 253–254
Prevention of illegal traffic in toxic and dangerous goods	204, 263–271
Trade and environment	205, 251–252
Civil society and public interest non-governmental organization (NGO) participation	206
Capacity-building to support national actions	208–236

Table I-1: Possible work areas and their associated activities

As recognized within the SAICM Overarching Policy Statement, the extent to which developing countries, particularly LDCs, Small Island developing States (SIDS) and countries with economies in transition can make progress towards reaching the 2020 goal depends, in part, on the availability of financial resources provided by the private sector and bilateral, multilateral and global agencies or donors.

Financial arrangements for the SA thus include, among other things:

i. Integrating SA objectives in relevant programmes, plans and/or strategies at various levels;

ii. Assessing current laws, policies and regulations to identify changes that may be needed to advance implementation of the SA objectives, including an assessment of funding needs where appropriate;

iii. Assessing and where necessary adopting appropriate policies at the national and sub-national levels, which could include economic instruments, that can help to cover the cost of sound chemicals management;

iv. Where appropriate, assessing and adopting at the national and sub-national levels economic instruments intended to internalize the external costs of chemicals, bearing in mind that such instruments need careful design, especially in developing countries and countries with economies in transition;

v. Governments and other stakeholders exchanging information on experience and studies in the national use of economic instruments and submitting such information to UNEP to make it broadly available;

Financial arrangements also include the mobilization of additional national and international financial resources, via the Quick Start Programme (QSP) as envisaged in paragraph 19 of the SAICM Overarching Policy Strategy, on financial considerations, to accelerate the strengthening of capabilities and capacities for the implementation of the SA objectives. The decision to establish the Quick Start Program Trust Fund (QSPTF) for the implementation of SAICM objectives was attained in resolution I/4 of ICCM-1, building upon the Bali Strategic Plan for Technology Support and Capacity building.

The QSPTF contain a voluntary, time-limited trust fund, administered by UNEP and may include multilateral, bilateral and other forms of cooperation, with an objective to “support initial enabling capacity building and implementation activities in developing countries, least developed countries, SIDS and countries with economies in transition.”

The strategic priorities defined by the ICCM-1 highlight that the QSP should mobilize resources for national priority initial enabling activities in keeping with the work areas set out in the strategic objectives of section IV of the Overarching Policy Strategy, in particular:

(a) Development or updating of national chemical profiles and the identification of capacity needs for sound chemicals management;

(b) Development and strengthening of national chemicals management institutions, plans, programmes and activities to implement the SA, building upon work conducted to implement international chemicals-related agreements and initiatives;

c) Undertaking analysis, interagency coordination, and public participation activities directed at enabling the implementation of the SA by integrating – i.e., mainstreaming – the sound management of chemicals in national strategies, and thereby informing development assistance cooperation priorities.

One of the key steps in strengthening national systems for the management of chemicals is the development of a comprehensive assessment, called a "National Profile (NP)", which covers

- the national infrastructure and capacity, relating to the legal, institutional, administrative and technical aspects of chemicals management, along with

- the nature and extent of chemicals availability and use throughout their life cycle in the country.

Furthermore, the NP is intended to provide a recognised country information reference base that can be used to judge progress in meeting specific national or international targets, in implementing SAICM as well as the WSSD (Johannesburg 2002) goal of sound management of chemicals by 2020 and United Nations (UN) 2015 MDG as they relate to achieving environmental sustainability.

In February, 2006, ICCM-1 thus endorsed the SA, setting the stage for continued assistance to countries to meet the SAICM's 2020 goal of sound chemicals management. UNITAR's Chemicals and Waste Management Program oversees the support of capacity building in developing and transition countries in a wide range of SAICM-related areas to protect human health and the environment from toxic chemicals and wastes, including:

National Chemicals Management Profiles and Capacity Assessment (CA), which providing guidance, training and technical support to assist countries in assessing their existing legal, institutional, administrative and technical infrastructures for sound chemicals management;

National SAICM Pilot Projects/Integrated National Programmes for Chemicals and Waste Management, which assist countries to establish and strengthen a collaborative framework at the national level, which can provide a foundation for effective and coordinated action to address national chemicals and waste management priorities as well as the implementation of international chemicals and wastes-related agreements and initiatives;

Specialised training and capacity building addressing, for example, the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Pollutant Release and Transfer Registers (PRTR), Risk Management Decision Making, and Stockholm Convention implementation

Though its expertise and involvement in Chemicals and waste management programs, UNITAR is one of the international executing agencies for projects being funded under the SAICM QSPTF. Many of the projects comprise developing/updating of a NP, development of a National SAICM CA and holding of a National SAICM Priority-Setting Workshop. Other activities, *inter alia*, include: development of National Chemicals Management Databases, SAICM implementation plans, national policies for SAICM implementation, PRTR's, and enabling activities for implementation of the GHS.

To support national SAICM implementation and enabling activities, UNITAR has developed, reviewed and tested a number of key guidance materials, including the " Preparing a NP to Assess the National Infrastructure for Management of Chemicals"; "Developing a CA for the Sound Management of Chemicals and National SAICM Implementation" ; "Developing and Sustaining an Integrated National Program for Sound Chemicals Management" (which forms the basis for the development of further guidance for SAICM implementation) and "Guidance for Developing SAICM Implementation Plans". With the input of all other IOMC organizations,

UNITAR developed the document on National Implementation of SAICM: A Guide to Resource, Guidance and Training Materials of IOMC Participating Organizations.

By 2009, over 100 countries have completed or are developing National Chemicals Management Profiles as a basic tool to assist with achieving sound chemicals management. Consistent with the 2020 goal of SAICM and WSSD, UNITAR assists countries to ensure that National Profiles provide a solid first step in SAICM implementation.

The second session of the International Conference on Chemicals Management (ICCM-2) was held in Geneva, from 11 to 15 May 2009, immediately before the 62nd World Health Assembly and preceded by the 4th meeting of the Conference of the Parties of the Stockholm Convention. ICCM-2 was set to review progress in the implementation of SAICM since its adoption in 2006. ICCM-2 evaluated SAICM implementation so far and achieved an 'omnibus resolution' on four emerging policy issues with specific actions on nanotechnology, chemicals in articles, lead in paint and electronic waste.

The second session also considered long-term financing of SAICM, took strategic decisions on the future direction of SAICM, determined future reporting arrangements, finalized certain outstanding institutional matters, exchanged scientific and technical information and decided on the budget and activities for the next inter-sessional period.

ICCM-2 established SAICM's status as a voluntary and inclusive multi-stakeholder process. Progress was achieved on various procedural aspects that strengthen the SAICM framework and will enable it to focus on more substantive issues going forward. Policy outcomes, especially on financing and emerging issues, were in line with ICCM's broad objectives, and are not expected to result in significant additional burdens being placed on industry.

ICCM-2 also saw the drafting of a preliminary strategy for strengthening the engagement of the health sector in implementation of SAICM, requested through resolution II/8 of ICCM-2 and in consultation with the World Health Organization (WHO),. The strategy shall, after receiving feedbacks from SAICM national focal points, be formally considered and endorsed in the third session of the Conference in May 2012 and will be submitted to the meeting of the Conference's Open-ended Working Group and in preparation for the Conference.

(b) IMPORTANCE OF THE NATIONAL PROFILE

Sound management of chemicals is recognised as essential to achieve sustainable development, including eradication of poverty and disease, the improvement of public health and the environment and the elevation and maintenance of the standard of living in countries at all levels of development. Involvement of all relevant sectors and stakeholders, including a the local, national, regional and global levels are seen as key to achieving the SAICM objectives, while respecting human rights and fundamental freedoms, understanding and respecting ecosystem integrity and promoting environmental governance and democracy.

A national chemicals profile assessment is regarded as the first step in the process of chemicals management as it provides a comprehensive overview and assessment of the existing national legal, institutional, administrative, and technical infrastructure related to the sound management of chemicals within a country. In developing countries and countries with economies in transition, NPs have served as a useful basis for identifying national chemicals management priorities and for initiating targeted and coordinated follow-up actions. In countries with advanced national chemical management schemes, NPs have pulled together, into one single document, a wide

range of information about national activities and programmes in the area of national chemicals management and thus contribute both to the national and international exchange of information about these activities. A NP, and the process of its preparation with input from all concerned parties, serves as an important national objective to strengthen the national chemicals and related waste management systems as well as to facilitate important national economic and trade objectives.

Within the Seychelles context, the drafting and regular updating of a national chemicals profile brings about a number of benefits and provides the country with a solid foundation in which to make proposals to and eventually implement strategies that look to strengthen the national chemicals infrastructures, within a reasonable and real-time economic and chronological framework. Seychelles as a SIDS with a fragile economy heavily marshalled around the tourism sector, namely coastal and marine tourism has a main challenge in ensuring sustainability in the development of this sector. This is turn, is heavily dependent on the conservation of the Seychelles fragile environment. In this light, the proper management of chemicals and waste on a national level is of utmost importance and of key priority for Seychelles.

Some of the key benefits of the establishment of a regularly-updated national chemicals profile are underscored as follows:

- **Governmental Operations**

It is firmly believed that the formulation, adoption and establishment of a sound chemicals profile will enhance the efficiency of chemicals information exchange processes with regards to chemicals nationally, thereby encourages inter-ministerial and inter-sectoral dialogues within the Government, in a bid to improve co-operation in regards to the management of chemicals. In addition, the national profile shall serve as a common tool for the encouragement of liaisons between Government and non-governmental sectors in Seychelles for the same purpose.

The chemical profile, adopted as a national living document shall serve as a springboard for more effective international cooperation between Seychelles Government and regional/international policy framework dealing with chemicals safety across the board. The profile in this context provides a snap-shot of chemicals status of countries, which promotes learning processes between countries.

In this line, the national chemicals profile provide core information and an evidence-base analysis of the Seychelles chemicals status for the development of situation analyses for actions required to implement Multi-lateral Environmental Agreements, such as the Rotterdam Convention on PIC procedure, the Stockholm Convention on POPs, and the GHS for classification and labelling among others. The NP shall thus ease compliance with international/regional reporting schemes in a consistent and efficient manner, e.g., reporting to the Commission on Sustainable Development and the preparation of background documents for international meetings and workshops.

In the same line, the NP document aids at provision of a basis for identifying needs for technical and financial assistance, and for mobilizing assistance resources available from international and bilateral sources.

As chemicals management is active within a number of governmental agencies and ministries in Seychelles, the NP shall provide practical information on ongoing programmes and activities in the country which are concerned with the management of chemicals throughout their life cycle. Additionally, the profile shall enhance the formulation of new programmes concerning the same.

As with many countries, management of chemicals in Seychelles is somewhat fragmented over a diverse number of sectors and institutions. This, in a way is understandable as the management of chemicals at various stages of their life cycles, touches such a wide scope of stakeholders. In the light of the birth and implementation of the SA within countries, it is strongly believed that one particular sector cannot have a leading role alone. The drafting of a NP shall serve as a useful tool from which the allocation of resources can be computed and distributed efficiently within the Government, based on the recognized gaps and loopholes as per the profile.

With the current on-going readjustment of the structure of the Seychelles government, the national chemicals profile is timely in the fact that is provides a clear picture of the potential gaps and overlaps within the governments in regards to chemicals management on a national basis. This information shall assist in the influence of the readjustment process within the government for more effective management of chemicals in all aspects throughout their life cycles.

Thus the evidence-based profile shall lead to the strengthening of national decision-making capabilities related to the management of chemicals throughout their life cycle, thereby touching the legislative branch of the Seychelles Government for approval of certain and amendments to bills and by-laws in regards to the sound management of chemicals and related waste.

The availability of national chemicals profile will certainly encourage synergy between the various sectors of the Seychelles Government in further efforts to strengthen the national system for the management of chemicals throughout their life cycle through involvement of all concerned parties.

- **Social Benefits**

One of the most beneficial effects of having a national chemicals profile within the social sector is the identification and recognition of gaps in regards to the education and sensitization of the public on chemicals safety. For example, the management, handling and usage of chemicals on a social and domestic level in Seychelles is somewhat done with little consideration of the potential hazards of such activities. The national profile shall thus aids in the provision of a basis for improved awareness on chemical risks among workers as well as the general public and helps to develop a national safety culture in regards to chemicals. The result of an improved understanding of potential chemicals-related problems and means for addressing them presents a basis for improved worker, public and environmental protection. This will directly lead to an improved productivity of workers through improved worker safety.

As with the government sector, the presence of a national chemicals profile will definitely assist to trigger national dialogues on chemicals safety/management involving all concerned parties and sectors of society, which will reflect as a direct benefit to the social sector such as consumer protection and more awareness on a domestic level.

- **Economy**

The presence of national chemicals profile within the Seychelles economic sector serves as a means to facilitate trade in chemicals, and agricultural, domestic and industrial products which rely on chemicals.

The NP shall also compliment the economy, financial and trade sectors with the health sector by helping to ensure that chemicals produced and imported are supporting economic goals and economic reforms and are not creating economic side-burdens through health, environmental and safety problems.

Information on domestic chemicals usage such as petroleum products shall assist the Seychelles Government through its appropriate institution on the long-term projections for effective planning of processing and storage facilities and distribution, which will minimize running cost, and have a direct economical benefit.

Data from a national chemicals profile shall also serve the Seychelles economy by improving awareness of potential pesticide and other chemical residue problems which could have long-term environmental and thus economic effects.

At this end, it is to be noted that the key milestones leading to the successful implementation of SAICM in Seychelles, following the preparation and updating of a national chemicals profile, entails a number of processes such as the assessment of the local capacity and the development and coordination of priorities when dealing with chemicals, directly or indirectly. Though it is understood that SAICM is not a legally-binding international framework, the Seychelles through this national chemicals profile, underlines its commitment for the safeguarding of its unique environment and its firm stance in the guaranteeing of the well-being of the health of its people, which prevails over all legal bounds.

(c) INVOLVEMENT OF SEYCHELLES IN SAICM

It goes without saying that the successful implementation of the QSP for SAICM will require a high-level commitment of the Seychelles decision-makers as well as a well-coordinated approach from the various stakeholders that forms the engine of the Seychelles' development course; thus the need for a integrated national program for the implementation of SAICM nationally. It is therefore of national priority of Seychelles to ensure the setting up of a National Forum on Governance and Priority Setting for SAICM Implementation.

The responsibility for preparing the NP for Seychelles was taken up by the Seychelles SAICM national secretariat, having its head office at the Seychelles Department of Environment Head Office. The Seychelles national SAICM secretariat entails personnel either already attached with the Seychelles Department of Environment or having past working experiences and expertise in the environment and health field.

SAICM QSPTF PROJECT IN SEYCHELLES

In June 2010, the Seychelles national SAICM secretariat thus signed a Memorandum of Agreement (MoA) with UNITAR for grant support for the Implementation of the SA Nationally through the QSPTF. The MoA pledges financial and technical resources to the national SAICM secretariat through UNITAR, being the SAICM executing Agency, for the "Development of an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles".

Upon signature of the MoA, The Seychelles National SAICM Secretariat also established the national coordinating team, which formed the Steering Committee (SC) for the overseeing of the implementation of the SA nationally. The Seychelles SAICM SC entails key personnel from the following institutions:

- Department of Environment (DoE)
- Division of Risk and Disaster Management (DRDM)
- Seychelles Petroleum Company (SEPEC)
- Division of Public Education and Community Outreach
- Seychelles Farmers' Association (SeyFA)
- Seychelles Fire and Rescue Services

- Public Health Services
- DoE legal branch
- Employment Department
- Seychelles Land Transport Agency (SLTA)
- University of Seychelles (UNISEY)
- Public Utilities Corporation (PUC)
- Seychelles Agricultural Agency (SAA)
- Seychelles Bureau of Standards (SBS)
- Occupational Health Services
- Seychelles Customs services

As part of the signed MoA between Seychelles and UNITAR, the implementation of SAICM nationally was required to be undertaken by stages, through the adherence to an agreed work plan. The MoA thus takes into account the formulation and setting in place of a series of steps for the successful implementation of the strategic approach nationally. The series of activities entails meeting with stakeholders, workshops and presentations that forms part of the entire process.

The first national SAICM SC meeting in Seychelles was consequently held in July 2010, and saw the approval of the SAICM national secretariat and SC and their memberships. It was agreed by all that as the first SA implementation was to a longer extent environmental-based, drawing from the 2002 WSSD action plan, the national secretariat and SC would see a stronger influence of personnel of an environment and environment-related background. However, the SC and the national secretariat also saw good representatives of other key institutions and sectors such as health and industrial sectors.

The first SC meeting also saw the establishment of a list of institutions and key stakeholders/partners that was used for preparing the Seychelles NP. The list of stakeholders formed the network of key personnel through which the bulk of information for the NP would be drawn out. The exhaustive list at *Annex 4* provides details of the national secretariat, SC membership and identified key stakeholders for the implementation of the SA in Seychelles.

In order to achieve a solid and consistent stakeholder network for the entire duration of the SA implementation nationally, it was vital that the commitments of the identified key stakeholders as well as other decision-makers were sought through a formal process. This, in turn ensures that the implementation of the SA in Seychelles is a country-driven procedure by Seychelles for Seychelles, which calls for commitments from the highest level. It is well foreseen that the implementation of SAICM nationally could shed more light on the chemicals status at policy level and thus influence the passing of certain legislative bills and by-laws by the Seychelles National Assembly for better management of chemicals throughout various stages of their life cycle. The formal stakeholder endorsement process of SAICM implementation in Seychelles was thus carried out with copies of the signed forms of declaration attached at *Annex 5*.

The main SAICM inception workshop in Seychelles took place on the 25th and 26th August 2010, facilitated by Dr. John Haines of UNITAR. The workshop saw the attendance of over 50 stakeholders from various sectors, as identified by the SC as well as other invited guests and Heads of Departments and Divisions. The workshop was opened by the Principal Secretary for Environment of Seychelles, Mr. Didier Dogley and also saw the attendance of the WHO National Focal Point. During the inception workshop the key stakeholders, lead stakeholders and other partners were briefed on the outline of a national profile on chemicals management by UNITAR, through the document entitled “Preparing a National Profile To Assess the National Infrastructure For Management of

Chemicals". This includes the contents of the 14 chapters of this documents and the type/depth of data needing assembling for the formation of the country's national chemicals profile paper.

The 2-day working session was thus aimed primarily at familiarizing the country's key chemical stakeholders with the various stages of the implementation of the SA in Seychelles namely the NP, CA and Implementation Plans. The workshop served as a platform for open dialogue on chemicals-related issues such as components of the existing institutional framework, including both state bodies and Non-Governmental Organizations (NGOs); the legal framework and existing policies for chemicals management in Seychelles; the types of inspection and monitoring services available and the range of risk factors and risk assessment mechanisms in place, among other items on the agenda. All the involved government authorities/departments/agencies concerned with chemicals management, as well as the non-governmental organizations, submitted their views on issues of their responsibility for the preparation of the Seychelles NP.

From the inception workshop, the next major activity on the agenda was the allocation of the 14 chapters of the NP guidance documents to identified lead stakeholders. These lead stakeholders, in turn, were required to establish a sub-network with a certain group of key partners as was assigned to them by the SAICM national secretariat and SC, whereby these groups would assemble the required information as appear in their respective chapters, with a final aim of achieving the national chemicals profile for Seychelles. The final allocation of the NP chapters to lead stakeholders and stakeholder teams are portrayed in Table I-2.

Section of the National Profile	Allocated Group	Proposed Lead Stakeholder	Proposed Team Composition
Executive Summary to the National Profile			
Chapter 1: National Background Information	Group 1	Public Health	Customs Agriculture LWMA SEPEC
Chapter 2: Chemical Production, Import, Export, Storage, Transport and Use			
Chapter 3: Priority Concerns Related to Chemicals at All Stages in Their Life Cycle	All Groups		
Chapter 4: Legal Instruments and Non-Regulatory Mechanisms for Life Cycle Management of Chemicals	Group 2	DoE (Legal)	Employment Dept. SLTA PUC Occupational Health
Chapter 5: Ministries, Agencies and Other Institutions Managing Chemicals and Related Waste			
Chapter 6: Relevant Activities of Industry, Public Interest Groups, Professional Bodies and the Research Sector			

Chapter 7: Inter-ministerial Commissions and Co-ordinating Mechanisms	Group 3	DRDM	Seychelles Fire and Rescue Services SeyPol SBS Seychelles PA
Chapter 8: Information Management Capacity, Data Access and Use	Group 1		
Chapter 9: Technical Infrastructure	Group 3		
Chapter 10: Chemical Emergency Preparedness, Response and Follow-up			
Chapter 11: Awareness/Understanding of Workers and the Public; Training and Education of Target Groups	Group 4	DoE (Education)	LUNGOS UNISEY SeyFA NATCOF
Chapter 12: International Linkages			
Chapter 13: Resources Available and Needed for Chemicals Management			
Chapter 14: Conclusions and Recommendations	All Groups		
ANNEX 1 to the National Profile: Glossary	All groups to provide		
ANNEX 2 to the National Profile: Available National Reports and Papers Addressing Various Aspects of Chemicals Management	All groups provide copies		
ANNEX 3 to the National Profile: Names and Addresses of Key Individuals and Organizations	All groups provide a list + statement of endorsement		

Table I-2: Final allocation of NP chapters to Lead stakeholders and teams

The data collection process was overseen by a SAICM national consultant working with the national SC. Preliminary reporting of the findings was carried out during the second Steering Committee meeting, held during the first week of November 2010, and final presentation of the chapters was carried out in a 1-day workshop held on the 17th December 2010, whereby each group were required to submit their findings. Also present were other stakeholders and decision makers to act as critics to the data found.

The Third SC meeting held in the third week of December 2010 was mainly governed by the assembling of the presented data for the finalization of the Seychelles national chemicals profile paper. The third SC also saw follow-up discussions on the SAICM national CA through the presentation of the worksheets of the UNITAR documents entitled "Developing a Capacity Assessment for the Sound Management of Chemicals and National

SAICM Implementation". The final NP presentation and validation workshop was held in January and the final edition of the NP paper forms the main contents of this document.

(d) PREAMBLE TO SEYCHELLES NATIONAL PROFILE

In the preparation of the NP, guidelines were used as given by UNITAR (in the document entitled "Preparing a National Profile to Assess the National Infrastructure for Management of Chemicals." It was prepared under the umbrella of the IOMC, a cooperative agreement of FAO, ILO, OECD, UNEP, UNIDO and WHO and in close cooperation with the secretariat of the IFCS.

For purposes of this NP, the term "chemical" is used in a broad sense to include the following:

Fertilizers and other agricultural chemicals;

Chemicals used in industrial processes;

Petroleum products; chemicals marketed for consumer use;

Pharmaceuticals; cosmetics; food additives;

Chemicals of natural inorganic and biological origin;

Unintended chemicals, such as produced in combustion processes and those appearing as residues in food, biota and consumer goods etc.

Throughout this NP paper, the term "chemical" is used as a general term which includes chemical substances, chemical mixtures as well as any other articles containing dangerous chemical substances. Furthermore, the present study does not cover the management of chemicals such as food or drugs. The effects of chemicals or group of chemicals in this document include persistent, bioaccumulative and toxic substances (PBTs); very persistent and very bioaccumulative substances; chemicals that are carcinogens or mutagens or that adversely affect, inter alia, the reproductive, endocrine, immune, or nervous systems; persistent organic pollutants (POPs), mercury and other chemicals of global concern; chemicals produced or used in high volumes; those subject to wide dispersive uses; and other chemicals of concern at the national level.

In the context of chemicals' life cycle, the profile entails management of chemicals at the production stage to their disposal after use that forms unwanted by-products from various processes and become wastes that need to be managed in an environmentally sound manner either recycled or ultimately disposed.

As per the GPA adopted by ICCM-1 for the implementation of the SA, the NP constitute Activity 1 of Work Area 1, which is set towards the achieving the 2002 Johannesburg Declaration that by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent science-based risk assessment procedures and science-based risk management procedures, taking into account the precautionary approach, as set out in principle 15 of the Rio Declaration. The formulation of the NP is also the main activity recommended for a number of the GPA work areas.

This profile, being the first of its type for Seychelles, is intended to be a living document, which will require regular updating, in line with the country's development trend and economic transitions. It has been proposed

that this profile be updated every 3 years to reflect the country's real-time chemicals status and for a more realistic plan towards the strengthening of the Seychelles national chemicals management institutions, plans, programmes and activities to further the implement the SA nationally.

II. EXECUTIVE SUMMARY

(a) BACKGROUND INFORMATION

Chemical production, import/export and usage globally have been increasing over the years. Whilst the increase in production reflects a stimulated economic development; there are serious concerns in the area of chemicals safety across the board, especially in the areas of occupational and environmental health.

The development of a national chemicals profile to assess the local capacity and infrastructures for the proper handling of chemicals within country level is an obligation initiated under the Agenda 21 - Chapter 19 of the United Nations Conference for the Environment and Development (UNCED), which was held at the city of Rio in Brazil in 1992 and aimed at the environmentally sound management of chemical substances.

A decade after the UNCED's adoption of Agenda 21, the second World Summit on Sustainable Development, (WSSD) was held in Johannesburg, South Africa from 26 August to 2 September 2002. It built on the achievements made since UNCED and recognised the potential for synergy across the implementation of the various chemicals-related international agreements and the need for related coordination within countries, and agreed on a Plan of Implementation.

The WSSD aimed to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent science-based risk assessment procedures and science-based risk management procedures, taking into account the precautionary approach, as set out in principle 15 of the Rio Declaration. The plan also aimed at supporting developing countries in strengthening their capacity for the sound management of chemicals and hazardous wastes by providing technical and financial assistance.

The Intergovernmental Forum on Chemical Safety (IFCS) established in 1994, by the United Nations Environment Programme (UNEP), the International Labour Organization (ILO) and the World Health Organization (WHO) has a main role to direct through recommendations the governments as well as the international organizations-members to adopt methods for the safer management of chemical substances and products.

In February, 2006, the first Session of the Inter-governmental Conference on Chemicals Management (ICCM-1) took place and made use of a Strategic Approach (SA) to the safe management of chemicals internationally. The SA was drawn out from the session's high-level declaration on chemicals safety, the Overarching Policy Strategy and Global Plan of Action. This set the stage for continued assistance to countries to meet the 2020 goal of sound chemicals management and this gave birth to SAICM.

ICCM-1's Global Plan of Action (GPA) includes "Implementation of integrated national programs for the sound management of chemicals at the national level in a flexible manner" as a key work area. This entails primarily the development of a comprehensive national profile to assess the present infrastructure of countries to deal with chemicals.

Financial arrangements for the implementation of SAICM in SIDS such as Seychelles include primarily the mobilization of additional national and international financial resources, via the Quick Start Program (QSP), to accelerate the strengthening of capabilities and capacities for the implementation of the SA objectives. The decision to establish the Quick Start Program Trust Fund (QSPTF) for the implementation of SAICM objectives

was attained in resolution I/4 of ICCM-1, building upon the Bali Strategic Plan for Technology Support and Capacity building. Though its expertise and involvement in Chemicals and waste management programs, UNITAR is one of the international executing agencies for projects being funded under the SAICM QSPTF.

The responsibility for preparing the National Chemicals Profile of for the Republic of Seychelles was under taken by the Department of Environment, being the core department through which the SAICM national secretariat was established. The secretariat as well as the national steering committee for the implementation of SAICM in Seychelles entailed key stakeholders and representatives of relevant Ministries, sectors, all of which has a strong say on chemicals management in their daily duties.

Seeing the benefits of the implementation of SAICM in Seychelles, the national secretariat signed a Memorandum of Agreement (MoA) with UNITAR for grant support for the Implementation of the SA Nationally through the QSPTF. The MoA pledges financial and technical resources to the national SAICM secretariat through UNITAR.

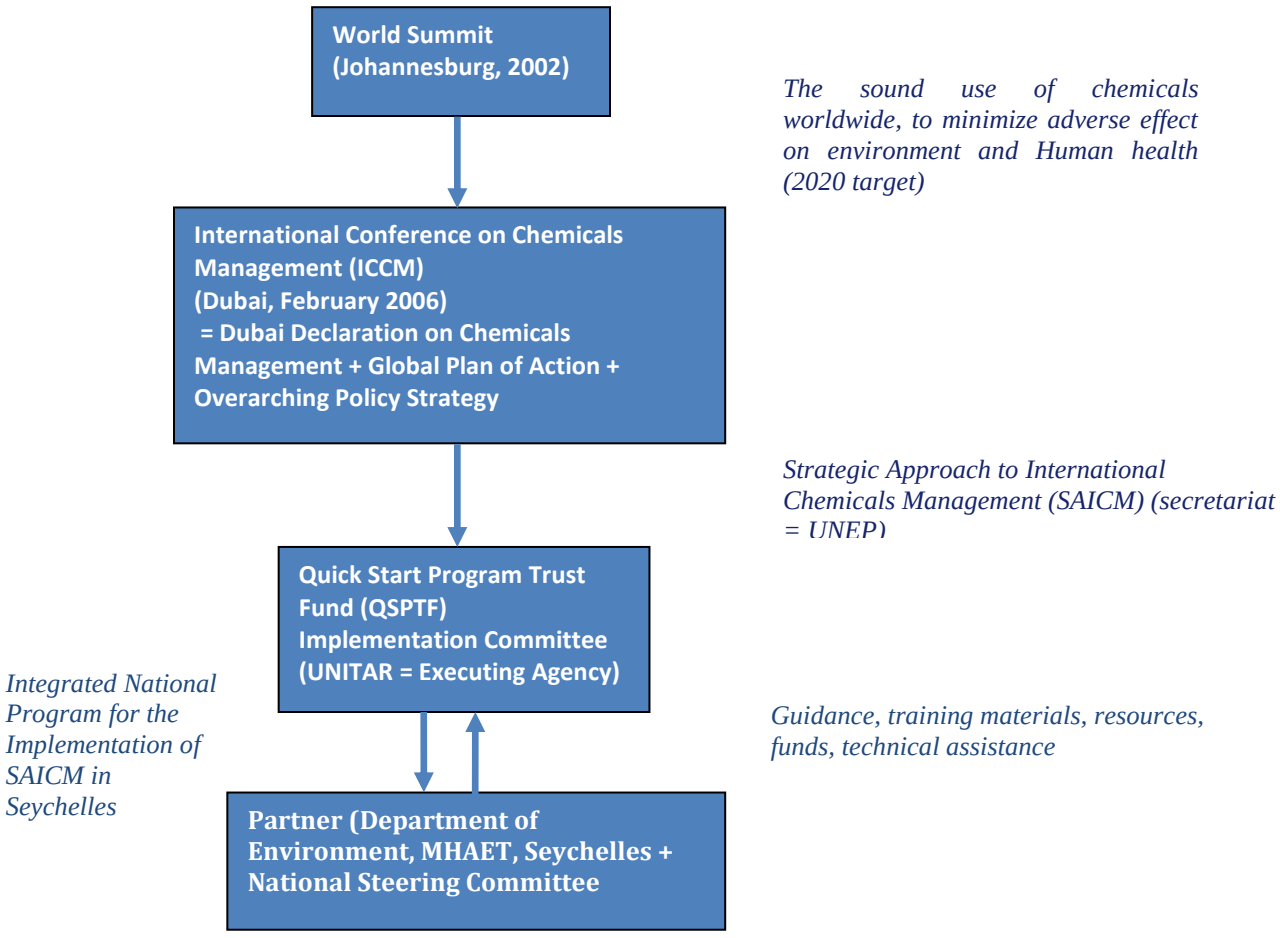

Fig II-1: Initiation of SAICM by ICCM

In the context of Seychelles, a national chemicals profile brings about a number of benefits and provides the country with a solid foundation in which to make proposals to and eventually implement strategies that look to strengthen the national chemicals infrastructures, within a reasonable and real-time economic and chronological framework.

Seychelles as a SIDS with a fragile economy heavily marshalled around the tourism sector, namely coastal and marine tourism has a main challenge in ensuring sustainability in the development of this sector. This is turn, is heavily dependent on the conservation of the Seychelles fragile environment. In this light, the proper management of chemicals and waste on a national level is of utmost importance and of key priority for Seychelles.

Thus the preparation of the National Profile for Chemicals of the Republic of Seychelles is generally expected to contribute:

- To a better coordination of the involved governmental departments in the management of chemicals nationally;
- To provide more complete information to the public and the other sectors on the issues related to chemicals safety;
- To provide scope for initiation, enactment and undertaking of chemicals safety programs at all levels within the various national sectors;
- To better dialogues within the government as well as the government and private sectors for the implementation of regulations and by-laws in regards to chemicals management;
- To better management of the Seychelles economy;
- To better sensitize the public at domestic level on the issues of chemical safety
- To initiate and encourage the signing and ratification of international frameworks, agreements and policies in regards to chemicals management.

Seychelles is constrained in its ability to dispose of its chemical wastes in an environmentally sound manner. No centralised or dedicated hazardous waste storage, treatment or disposal facilities are available hence, these substances are either stored at the site of generation or at off-site locations or are indiscriminately disposed of. The storage of such wastes has created stockpiles in several organisation or landfill site.

There is need for dedicated facilities to store and treat chemicals wastes, particularly the more toxic substances. The newly proposed sanitary landfill site include a hazardous waste cell or infrastructure to manage some categories of the chemical wastes but however it would need some form of treatment prior to its disposal.

There is mechanism in place to export chemical waste (exportation of scrap metal) but the need for capacity building to properly establish an integrated system to be able to properly collect storage, and treat chemical waste for either disposal or exportation is a priority.

Pesticides have been widely used in campaigns to control mosquitoes and other insect pests with possibly insignificant monitoring of possible environmental effects. Accidents involving chemicals are potentially more

serious within the limited environment of small islands developing states (SIDS), due to lack of proper chemical monitoring system in place.

There is widespread concern about the potential dangers of the increasing amounts of chemicals imported into SIDS such as Seychelles. The lack of adequate legislation and mechanism to control the importation, distribution and use of certain toxic chemicals is of major concern. The custom workers are usually limited in expertise and experience in identifying chemical issues. As a result, they may not be able to clearly classify or identify new or unfamiliar chemical brands, especially with so many being imported into the country.

(b) CHEMICALS PRODUCTION, IMPORT, EXPORT, TRANSPORT, STORAGE, USE AND DISPOSAL IN SEYCHELLES

In Seychelles, the importation, transportation, usage and disposal of chemicals which are of the most prominent concern relate to pesticides, raw material for medical products, raw material for industrial, hazardous chemical contaminated in equipment, chemical products for household use, and chemical wastes. There has not been a comprehensive study or any estimates on chemical use and related waste generation nationally.

In many countries, including Seychelles, the management of chemicals is somewhat fragmented over a diverse number of sectors and institutions. This, in a way is understandable as the management of chemicals at various stages of their life cycles, touches such a wide scope of stakeholders. It is however felt that there lacks a central body in Seychelles that regulates the handling and management on a national basis, be it policy-wise or enactment / enforcement of certain regulations in regards to the safe management of chemicals.

A Pesticide Board comprising of 6 representatives from different ministries and agencies in Seychelles has been established under section 4 of the Pesticides Control Act. Its main function is to register pesticides and advises the Seychelles Licensing Authority (SLA) on the conditions to be imposed in the grant of licenses relating to pest control services, trade and manufacturing licenses relating to pesticides under the Licenses Act. It also advise ministries and government departments on matters relating to the manufacture, import, export, sale, disposal, handling, distribution or use of pesticides and on the grant of permits or licenses for any such activity. It also consider and report on any matter relating to pesticides referred to the Board by the Minister. This board has however not been active since its formation. The main reason for this inactivity lies in the fact that the board never received enough “limelight” and thus has never been at the forefront of implementation of pesticide control. It is also felt that the role of the Board is far too localized to pesticides to take the leading role of orchestrating the general management of chemicals nationally.

Seychelles is constrained in its ability to dispose of its chemical wastes in an environmentally sound manner. No centralised or dedicated hazardous waste storage, treatment or disposal facilities are available hence, these substances are either stored at the site of generation or at off-site locations or are indiscriminately disposed of. The storage of such wastes has created stockpiles in several organisation or landfill site.

There is need for dedicated facilities to store and treat chemicals wastes, particularly the more toxic substances. The newly proposed sanitary landfill site include a hazardous waste cell or infrastructure to manage some categories of the chemical wastes but however it would need some form of treatment prior to its disposal.

There is mechanism in place to export chemical waste (exportation of scrap metal) but the need for capacity building to properly establish an integrated system to be able to properly collect storage, and treat chemical waste for either disposal or exportation is a priority.

The strengthening of the health sector's engagement in the implementation of the SA nationally is a very good and appropriate move in ensuring that chemicals are properly handled and managed nationally. The challenges and opportunities are well established and genuine. The guiding principles used in developing the health sector strategy as well as the six possible areas of action are also well-noted and commended for the wide scope of stakeholders groups and institutions within this sector that they cover.

(c) IDENTIFICATION OF INTERNATIONAL OR REGIONAL ISSUES RELATED TO CHEMICALS MOVEMENTS

Due to its relatively remote location, Seychelles almost never experience illegal marine traffic in regards to chemicals transportation by sea. There is the occasional illegal fishing issue which the Seychelles coastguard is dealing with properly, but nothing to do with chemicals.

The remoteness of Seychelles further discourages trans-boundary pollution. Most of the ships and tankers carrying petroleum products in the Seychelles waters are equipped with the standard and required double-hull, which further restricts chemical spillage. The most common forms of marine pollution in Seychelles are mainly localized and very small incidents that are very easily handled by the local authorities.

There is however a new and growing threat that is looming over the Seychelles horizon. Due to its strategic location, the outer islands of Seychelles are sometimes the target of Somali pirates. This is at present very rare as the islands are more or less south of the main land and far from Somali. However the pirates are now actively intercepting large ships and carriers, some of them carrying chemicals such as petroleum products. With this new threat, there is a understandable fear that a major chemical spillage can occur in the Seychelles waters, which will trigger a major disaster to the Seychelles marine and very fragile ecology.

(d) ANALYSIS OF THE NATIONAL LEGAL AND REGULATORY INFRASTRUCTURE AND ITS ENFORCEMENT

The Constitution of Seychelles states that every citizen of Seychelles has the right to live in and enjoy a clean, healthy and ecologically balanced environment (Article 38). The State undertakes to put in place measures to promote the protection, preservation and improvement of the environment; to ensure sustainable socio-economic development by judicious use and management of resources; and to promote public awareness of the need to protect, preserve and improve the environment. Similarly Article 40 of the constitution makes it a duty of every citizen to protect, preserve and improve the environment.

With regards to legislation dealing with different chemical issues which may have an adverse effect on the environment, several pieces of legislation have been enacted as follows:

1. EPA (1994) (under revision) – deals with the general management of the Seychelles Environment

2. Standards regulations (1995) – deals with effluent quality

3. Ozone regulation (2010) - Restricts importation, exportation, sale, use, purchase and recovery of controlled substance or products : prohibits production, manufacture, importation, exportation, sale, purchase and use of prescribed products and substance

4. Public Health Act (1960) – deals with issues regarding public and occupational health

5. Pesticide Control Act (1996) – deals with Registration and permit, labelling, storage, disposal of pesticides

6. Licenses Act (2010) – deals with licensing of pesticides and petroleum products activities

7. Licences (Petroleum Storage and Sale) Regulation (1981) – Deals with the storage and sale of petroleum products

8. Maritime Zones (Marine Pollution) Regulation (1981) – deals with prohibiting discharge of oil or oily mixture into the territorial waters

9. Trades Tax (Imports) (Restricted and Prohibited Goods) Regulation (2009) – deals with the prohibiting and restricting importation of certain goods

Seychelles is also signatory to a number of conventions of relevance to chemicals but only some of these conventions have been implemented into our national laws. The following conventions related to chemicals have been signed by Seychelles:

- **Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC), Rotterdam, 1998**

- **Protocol on Liability and Compensation for Damage resulting from the Transboundary Movements of Hazardous Wastes and their Disposal, 1999**

- **Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, 1989**

- **Stockholm Convention on Persistent Organic Pollutants (POPs) - (May 2002)**

- **United Nations Convention on the Law of the Sea (UNCLOS) 1982**

- **Montreal Protocol on Substances That Deplete the Ozone Layer**

- **Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities 2010**

(e) ANALYSIS OF ONGOING GOVERNMENTAL PROGRAMMES AND INTER-MINISTERIAL COOPERATION

There is no institution specifically mandated to deal with chemicals nationally in Seychelles. They are controlled together with other substances of similar usage and characteristics. The following government ministries, agencies and institutions deal with chemicals and related issues. Each ministry and department carries out its own chemicals management program and acts as the head department / ministry to the signage of various international agreements, just as the Department of Environment (DoE).

(a) The **DoE** within the Ministry of Home Affairs, Environment, Transport and Energy enforces on environmental related legislation in Seychelles. The Department of Environment is also the focal point for the Basel Convention and therefore it issues authorisation for exportation of hazardous chemicals. The DoE is also the focal point for SAICM implementation in Seychelles.

(b) A **Pesticide Board** comprising of 6 representatives from different ministries and agencies has been established under section 4 of the Pesticides Control Act. Its main function is to register pesticides and advises the Licensing Authority on the conditions to be imposed in the grant of licenses relating to pest control services, trade and manufacturing licenses relating to pesticides under the Licenses Act.

(c) **Landscape and Waste Management Agency (LWMA)** is governed by the Environment Protection (Landscape and Waste Management Agency) Regulations 2009. It is responsible for the overall management of waste including the monitoring and control of waste disposal sites in the country. It is also the Agency authorising the disposal of hazardous substances.

(d) **The Customs Division** of the Ministry of Finance and Trade deals with the procedures for import and export of chemicals

(e) **Divisions of Risk and Disaster Management (DRDM)** is a Division within the Department of Environment dealing mainly with disasters and risks. It is responsible for the protection of the population, properties and also the environment.

(f) **Seychelles Licensing Authority** is a corporate body being administered by a Board. They deal mainly with issuance of license and revoking of the same should there be any breach of regulations.

(g) **Ozone Unit** of the Department of Environment ensures that all chemicals or substances believed to be responsible for the depletion of the ozone layer are banned in Seychelles by 2020.

(h) **Ministry of Health; Environmental Health Section** enforces the Public Health Act and its subsidiary legislation and has powers to shut down premises if there is likelihood of contamination to water or food or chemical release which may affect public health.

(i) **Fire and Safety Services Agency–** This agency is responsible for the safety of members of the public in general. They provide advice with regards to protection of fire and safety of workers in work places and also residential homes. It is also the first responder during a chemical release.

There are several other industries and companies such as the Indian Ocean Tuna Limited, the Seychelles Breweries (SeyBREW), the Public Utilities Corporation (PUC), the Chelle Medical, the Seychelles Petroleum Company (SEPEC), the Penlac and the Seychelles Island Foundation (SIF), the Seychelles People Defence Forces (SPDF), the Seychelles Police and the Seychelles Bureau of Standards (SBS) dealing with chemicals at different stages in their life cycle. These industries and companies collect data and conduct testing of various chemicals. They also provide training for their staff handling chemicals and educate their workers by providing information related to chemicals.

(f) ANALYSIS OF THE NATIONAL CHEMICAL INFORMATION MANAGEMENT INFRASTRUCTURE

In regards to data on activities at the various stages of the chemicals life cycle in Seychelles, this is either limited or non-existent. Getting collective data on chemical importation, use, storage is also difficult because most of the information available is not in an organised format. The fragmented data collected does not qualify the total to be sufficient either qualitatively or quantitatively for decision-making activities. That is, even if one or two organisations does have all the require mechanism in place that provide adequate and accurate data for such. However, their examples could be use as model to design a comprehensive format for chemical data collection that could be adopted for the entire country.

(g) ANALYSIS OF THE TECHNICAL INFRASTRUCTURE

Technical infrastructures that deal with the analysis of chemicals at various stages of their life cycle in Seychelles consist mainly of laboratory facilities. Thus the following organizations and institutions have laboratories available on their premises:-

- Indian Ocean Tuna (IOT)
- Public Utilities Corporation (PUC)
- Seychelles Breweries Ltd. (SeyBREW)
- Ministry of Health (MoH)
- Seychelles Bureau of Standard (SBS)
- Seychelles Agricultural Agency (SAA)
- Private Clinics and Health Facilities
- Seychelles Petroleum Company (SEPEC)

Note that only the Seychelles Bureau of Standards (SBS) is mandated nationally to carry out Proficiency testing and quality control assurance on all products.

(h) ANALYSIS OF THE INFRASTRUCTURE AND CAPACITY TO DEAL WITH CHEMICAL EMERGENCIES

Nationally chemical incidents in Seychelles are managed jointly by the DoE and the Division of Risk and Disaster Management (DRDM) and such are handled by the emergency services such as Seychelles Fire and Rescue Services and the Landscape and Waste Management Agency (LWMA). This depends on certain factors; namely:-

- **Where the emergency call is recorded and**
- **What type of incident**
- **What is involved**
- **What kind of response is required**
- **The location**

The country in general does not have a chemical emergency plan. In the overall National Disaster Management Plan there is no mention of a chemical emergency incident. However certain agencies have expressed the need in preparing a specific response plan for chemical emergencies, some such as IOT and SEYPEC have put it in their short term projects to draft such a specific plan.

The need to develop a chemical response plan is evident and the stakeholders mentioned in this profile paper are the key agencies that should be involved in the development and implementation of such a plan.

(i) ANALYSIS OF NATIONAL AWARENESS RAISING AND EDUCATION PROGRAMMES FOR WORKERS AND THE PUBLIC, AND OF TRAINING FOR SPECIFIC ASPECTS OF CHEMICALS AND RELATED WASTE MANAGEMENT

In many SIDS, there is still a poor appreciation of the issues concerning chemical safety and how exposure to toxic chemicals and waste may give rise to serious health implications and degradation of the environment. Seychelles is not an exception in this context.

It is strongly argued that a number of chemicals education program, although in place in certain sectors, need to be bolstered to reach a wider audience for better management of chemicals:

- Provide information to workers to protect their health and safety from the risks of chemicals exposure;
- Provide information to the public concerning the risks to the environment, health and safety from chemicals, and actions which should be taken in order to protect themselves from chronic or acute exposure to hazardous chemicals in everyday life, as well as at the time of a chemical emergency;
- Raise the awareness of decision-makers and legislators concerning chemical safety and encourage them to take timely action to implement sound management measures;
- Improve the understanding of communicators and the media concerning chemical safety issues and encourage them to better communicate these issues to the public in order to improve understanding and promote chemical safety actions by the public and civil society in general.

(j) ANALYSIS OF AVAILABLE HUMAN AND FINANCIAL RESOURCES

Given its very small population, Seychelles is one of the example countries whereby human resources are significantly dependent on foreign expertise. This is not to say that there are no trained personnel at the relevant sectors nationally. As a matter of fact, there are some properly-trained personnel, however, their limited experience and exposure to various scenarios is one of the issues which limits their expertise to handling of relatively small chemical incidents only.

An example to this can be found in the office of Risk and Disaster Management (DRDM), where there is only one trained personnel that deals with chemical emergencies along with all other emergencies. The Seychelles main emergency service (Fire and Rescue Services) consists of a total of 25 heads. However, there has been no reported case of chemicals or any other incidents in Seychelles not properly handled by the team.

Again as with all SIDS, financial resources remain an issue in all aspects. Seychelles' economy is very much dependent on tourism and thus the preserving of its environment is of utmost importance. It might somewhat surprising that chemicals management that would otherwise lead to adverse effects on the same environment is not properly handled under one umbrella and is somewhat fragmented over various departments and sectors.

There is thus a need to mobilize financial and human resources in the line of forming a national body or board to deal with chemicals management as well as overseeing the implementation of the Strategic Approach in Seychelles.

(k) GENERAL CONCLUSION AND RECOMMENDATIONS

There is a growing need to redress the Seychelles chemicals situation and at the same time to meet the requirements for a sound chemical management system in place for the country. The promotion of sound management of chemicals in Seychelles, calls for appropriate institutional, policy, legal and administrative arrangements to be in place. An effective legal and policy framework for the management and control of chemicals should be multi-sectoral with the ability to promote a coordinated approach which requires the following:

- Develop and implement a national framework in order to address more effectively the issue of chemical impacts on health and environment, through integration of links in policies, strategies, regulations and national development plans.

- Support knowledge acquisition and management in the areas of chemical management, health and environment, particularly through applied research at local and regional levels, while ensuring coordination of scientific and technical publications so as to identify knowledge gaps and research priorities and to support education and training at all levels.

- Establish a sound surveillance system for chemicals management to allow measurement of interlinked health and environment impacts and to identify emerging risks, in order to manage them better.

- Set up effective mechanisms for reinforcing compliance with international conventions and national regulations to protect the population from threats related to chemicals.

- Set up national monitoring and evaluation mechanisms to assess performance in implementing priority programmes and peer review mechanisms to learn from each other's experiences.

- Achieve a balance in the allocation of national budgetary resources for inter-sectoral chemicals management programmes.

CHAPTER 1: NATIONAL BACKGROUND INFORMATION

1.1 PHYSICAL AND DEMOGRAPHIC CONTEXT

- **Size of the Country (area in square km):**

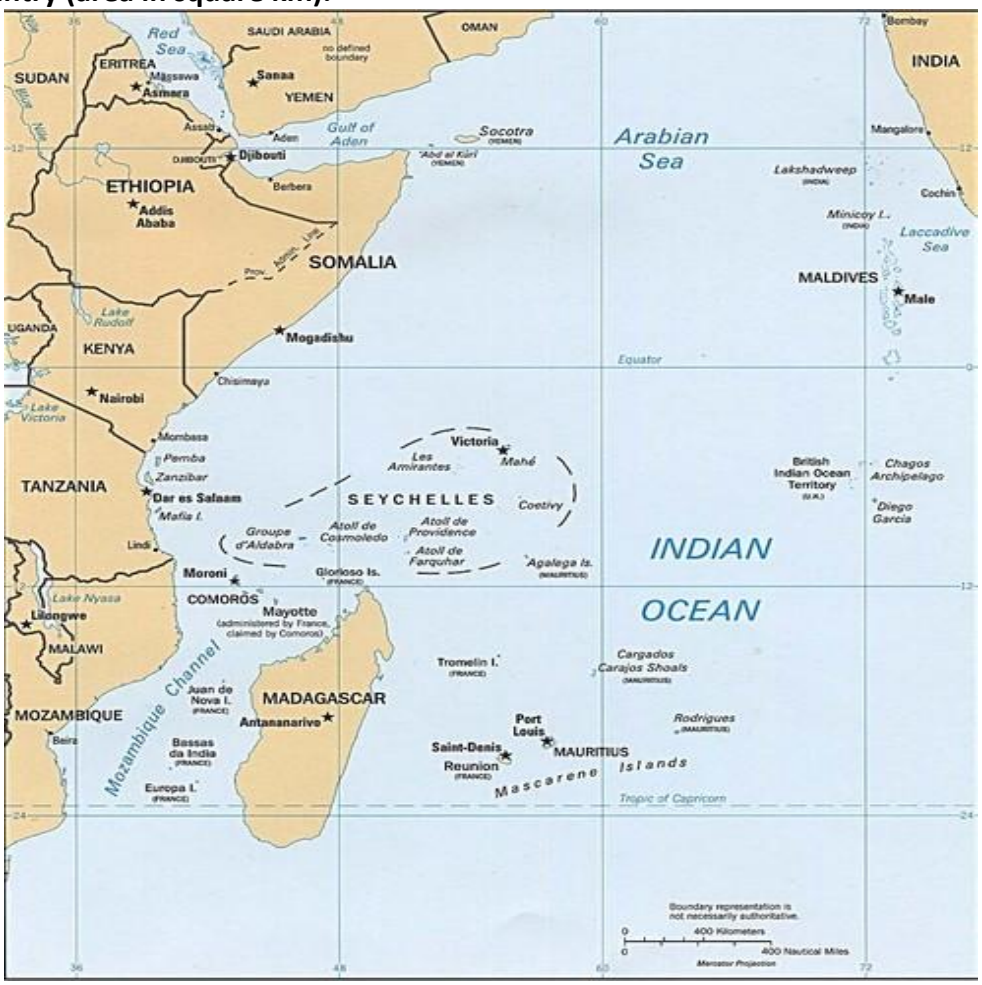

Figure 2-1 Positions of Seychelles in the Indian Ocean
(Source: http://www.map-of-africa.co.uk/map-of-seychelles.htm)

The Republic of the Seychelles is an archipelago of over 115 islands that are widely scattered in the south-western part of the Indian Ocean between 4 and 10 degrees south of the Equator line and spreads over an Exclusive Economic Zone (EEZ) of about 1.4 million square kilometres. The principal island of Mahé has an area of 152.5 km^2, lies 1,800 kilometres east of Mombasa on the east Africa Coast, 930 kilometres northeast of Madagascar and 2000 kilometres south west of the coast of India.

In general, the islands are divided into two groups; the Mahé group is granitic with terrain consisting of narrow coastal strip and hills. The other group is characterised by their coral flat terrain and elevated reef. The islands lie outside the cyclone belt, so severe storms are rare but they are frequently hit by short periods of drought. After Mahé, the two other islands with the most inhabitants are Praslin (37.56 km^2), and La Digue (10.1km^2) respectively. The total land area of the country is 452.5 square kilometres.

1.2 FORM OF GOVERNMENT

The Constitution of Seychelles states Seychelles to be a sovereign, democratic Republic. The Seychelles gained its independence from the United Kingdom on the 29 June 1976. The National Day, which is, also the Constitution Day falls on the 18 June. It has three-branch System of governance consisting of the executive, legislative and judiciary.

The executive arm consists of the president who is both the head of state and head of government cabinet, hence the council of Ministers is appointed by the president elected by popular vote for a five-year term. The judicial branch consists of the Court of Appeal and Supreme Court, judges for both courts are appointed by the president. The legal system is based on English common law, French civil law and customary law. The legislative is a unicameral National Assembly or Assemblée Nationale of 34 seats; 25 elected by popular vote, 9 allocated on a proportional basis to parties winning at least 10% of the vote; members serve five-year terms.

- **Official Language(s):**

The national languages of Seychelles are Creole, English and French. It is stipulated in the constitution that a person may use any of the national languages for any purpose but the law may provide for the use of any one or more of the national languages for any specific purpose.

- **Total Population:**

The population of Seychelles is estimated at 86,525 persons as at 10th June 2010. This represents a decrease of 773 persons or an annual growth rate of -0.9% since 1st June 2009. The proportion of persons aged less than 20 has decreased from 33.5% in 2005 to 30.7% in 2010. The proportion of persons of prime working age (20-44) has also decreased from 41.6% in 2005 to 40.5% in 2010. Conversely, the population aged 45-64 has increased from 17.0% in 2005 to 20.2% in 2010. The dependency ratio which measures the number of persons of non-working age (i.e. 0-14 and 65+) to every 1000 persons of working age (i.e. 15-64) has decreased from 486 in 2005 to 441 in 2010.

Sex and Age Group	2005	2006	2007	2008	2009	2010
MALES	**41233**	**42875**	**43159**	**44999**	**45022**	**44253**
0-19	14174	14009	13765	13772	13865	13767
20-44	17226	18666	18703	20174	19888	19185
45-64	7309	7727	8047	8474	8709	8753
65+	2524	2473	2644	2579	2560	2548
FEMALES	**41619**	**41725**	**41874**	**41957**	**42276**	**42272**
0-19	13557	13355	13047	13021	13128	12997
20-44	17222	17106	17002	16662	16457	16166
45-64	6753	7102	7489	7997	8408	8846
65+	4087	4162	4336	4277	4283	4263
BOTH SEXES	**82852**	**84600**	**85033**	**86956**	**87298**	**86525**
0-19	27731	27364	26812	26793	26993	26764
20-44	34448	35772	35705	36836	36345	35351
45-64	14062	14829	15536	16471	17117	17599
65+	6611	6635	6980	6856	6843	6811
BOTH SEXES						
%						
0-19	33.5	32.3	31.5	30.8	30.9	30.9
20-44	41.6	42.3	42.0	42.4	41.6	40.9
45-64	17.0	17.5	18.3	18.9	19.6	20.3
65+	8.0	7.8	8.2	7.9	7.8	7.9

Table 1-1: mid-year population by broad groups for the years 2005 - 2010

(Source: Seychelles National Statistics Bureau)

Notes: (1) 2002 Census figure has been adjusted by 2.4% to take into account undercounts

(2) The population has been rebased using the 2002 Census

- **Important changes in population migration, including immigration and refugees:**

Table 1-2 shows the components of population change for the period 1994-2010. During the period July 2009 to June 2010 an actual growth rate of -0.9% was recorded while the rate of natural increase (births less deaths) was 0.9%. On a longer time scale, the population increased from 74205 in 1994 to 86,525 in 2010 with an actual growth rate of 1.0% per annum. If migration is discounted, the rate of natural increase for that same period is 1.3% per annum which is the rate at which the Seychelles population would double in 54 years.

Period (mid-year)	Mid Year Population	Growth rate with	
		Natural Increase	Migration
1994(1)	74205	1.6	2.7
1995	75304	1.4	1.5
1996	76417	1.4	1.5
1997	77319	1.3	1.2
1998	78846	1.1	2.0
1999	80410	1.1	2.0
2000	81131	1.2	0.9
2001	81202	1.2	0.1
2002(2)	83723	2.4	3.1
2003(3)	82781	1.1	-1.1
2004	82475	1.0	-0.4
2005	82852	1.1	0.5
2006	84600	0.9	2.1
2007	85033	1.1	0.5
2008	86956	1.0	2.2
2009	87298	1.2	0.4
2010	86525	0.9	-0.9

Table 1-2: Population growths 1994 - 2010
(Source: Seychelles National Statistics Bureau)
Notes: (1) From1994-2001 the population has been rebased using the 1994 Census result
(2) The 2002 Census figure has been adjusted by 2.4% to take into account undercounts
(3) From 2003 onwards the estimates have been rebased on the 2002 Census figure

- **Life Expectancy:**

Seychelles has one of the best health care services in East Africa and the Indian Ocean region. Life expectancy has remained practically the same over the past nine years from 72.5 to 72.89 while infant mortality fell from 16.7 (2003) to 9.5 (2006). Table 1-3 shows life expectancy at birth by sex for the years 2001-2009. The number of years a male is expected to live is 68.4 years and that for female is 78 years. The same also shows the success of antenatal care in the infant mortality figures which has decreased greatly from 17.6% in 2002 to 10.8% in 2009. Antenatal health services are provided by government to a large extent.

Parameters	2001	2002	2003	2004	2005	2006	2007	2008	2009
Life expectancy at birth									
Both sexes	72.50	70.98	70.92	72.63	71.90	72.20	73.14	72.89	72.89
Male	67.35	66.55	66.17	69.06	67.39	68.87	68.90	67.70	68.44
Female	79.40	75.77	76.10	76.30	77.10	75.60	77.60	78.93	77.99
Infant Mortality Rate	13.3	17.6	16.7	11.8	10.4	9.5	10.7	12.9	10.8

Table 1-3: Figures on Health parameters
(Source: Seychelles National Statistics Bureau)
Notes: Includes deaths to residents and non-residents

- **Literacy Rate:**

The 2002 population census used the definition for literate as *an individual that could read or write a complete sentence in any language*. Table 1-4 shows the literacy rate among the different age groups and among the sexes.

Age Group	Both sexes (%)	Female (%)	Male (%)	Sex differentials
15 < 20	98.3	98.9	97.7	1.2
20 < 25	98.1	99.1	97.2	1.9
25 < 30	97.7	98.6	96.8	1.8
30 < 35	97.6	98.5	96.8	1.7
35 < 40	95.8	97.5	94.0	3.5
40 < 45	93.2	95.8	90.9	4.9
45 < 50	90.0	92.1	88.1	4.0
50 < 55	84.2	86.8	81.9	4.9
55 < 60	79.0	81.9	76.1	5.8
60 < 65	73.2	77.4	68.1	9.3
65^{+}	66.0	67.6	63.5	4.1
Total	91.0	91.9	90.1	1.8

Table 1-4: Literacy rates for persons 15 years or more, 2002 Census
(Source: National Population and Housing Survey 2002)

Almost 100% of young people in the Seychelles are literate but that more than half the older people in Seychelles are also literate. This comes as a result of an intensive campaign by government for more than two decades to teach the Creole language to elderly illiterates. This campaign has been a tremendous success and extremely useful since national newspapers also carry articles in Creole.

- **Average Education Level of Population:**

Comparing the education level of males to females, Tables 1-5 shows a more or less equal attainment for the two sexes at least up to polytechnic level. Beyond this level, there is a clear indication that males dominate the higher educational achievements. Combining the two groups who have reached university level, it can be reported that females represent only 37% of university graduates indicating a gender imbalance at higher levels of education.

Educational attainment	%			
	Female	Male	Total	Number
No schooling	50.2	49.8	100.0	2,651
Primary	52.8	47.2	100.0	11,321
Other (e.g. adult learning etc.)	51.5	48.5	100.0	330
Secondary 1-2 years	51.7	48.3	100.0	8,838
Secondary 3 years	52.2	47.8	100.0	6,214
Secondary 4 years	49.6	50.4	100.0	4,564
National Youth Service/ Secondary 5 years	51.9	48.1	100.0	11,029
Vocational	41.0	59.0	100.0	2,177
Polytechnic 1-2 years, Teacher Training College	50.9	49.1	100.0	7,782
Polytechnic 3-4 years, Form 6	51.7	48.3	100.0	3,430
Pre-University	48.7	51.3	100.0	1,522
University (Bachelor)	38.0	62.0	100.0	1,490
University (MA, MBA, PHD)	34.8	65.2	100.0	742
Not reported	37.0	63.0	100.0	2,966
Total	**50.1**	**49.9**	**100.0**	**65,056**

Table 1-5: Population aged 12 years or more educational attainment and sex, 2002 Census (% distribution within sex)
(Source: National Housing and Population Survey 2002)

- **Unemployment Rate:**

Due to the implementation of the new macro-economic reform whereby several public servants left employment through a voluntary departures scheme effected on the 31st December 2008, a greater increase of 1813 jobseekers was recorded comparing the 1st quarter 2009 to the 4th quarter of 2008 (see table 1-6). Such increase is due to the large number of students who completed post secondary schools and ready join the world of work. In the course of the year, this figure is expected to progressively decrease with job placements with the help of the new employment agencies.

UNEMPLOYMENT RATE (March 2009)								
Year	Employment		Unemployment		Labour Force Participation		
	Formal	Others	Total	Rate	Total	Population 15-62yrs	Labour Force Participation Rate
2004	32780	5983	**1419**	**3.53%**	40182	54771	73.4%
2005	34542	6059	**1532**	**3.62%**	42274	55407	76.3%
2006	37626	6059	**1175**	**2.62%**	44860	57111	78.5%
2007	39572	6059	**909**	**1.95%**	46540	57422	81.0%
2008	41342	6059	**471**	**0.98%**	47872	57422	83.4%
2009	41342	6059	**2284**	**4.60%**	49685	57422	86.5%

Table 1-6: Unemployment rate
(Source: Seychelles National Statistics Bureau)

- **Percentage of Women Employed Outside the Home:**

Seychelles is one of the best examples of a country where women have met most of their basic needs and have achieved almost full practical empowerment in the public sphere, with constitutional and equal rights to work, education, health, vote, land ownership and inheritance. In fact, it can be said that Seychelles is a country where women and girls have many advantages over men and boys. The significant difference in life expectancy at birth

for women (77.7 years) and men (68.9 years) is an indication of this. The National Statistic Bureau gave the average number of employees in formal employment for 2009 by Industry for the Government, parastatal and Private Sectors to be 41891. The total number of female working in government and parastatal institutions amounts to 7842 out of a total of 14170, which equates to 55.3%. The remaining 27721 employers are from the Private Sector; however the disaggregated figures for the Private Sector are currently not available as Social Security records are not currently tailored to supply this information.

1.3 POLITICAL/GEOGRAPHIC STRUCTURE OF THE COUNTRY

The archipelago of the Seychelles islands is located within the domain of the African continent. However, they are positioned off the mainland of the continent in the Indian Ocean. The Seychelles Islands are the highest point of the Mascarene Ridge, an Indian Ocean ridge running in a generally north-south direction. The granite islands rise above the sea surface to form a peak or ridge which, in the case of Mahé, attains an elevation of 3,000 ft at Morne Seychellois, the highest point. Rugged crests, towering cliffs, boulders and domes contribute to the islands great natural beauty. The coralline Seychelles are, in contrast, low-lying, rising only a few feet above the surface of the sea.

The Seychelles have a humid, marine and tropical type of climate with an annual mean temperature of about 27°C with about an 8°C difference between maximum and minimum temperatures. Relative humidity is high at about 80% throughout the year. Annual rainfall ranges from 1,700mm in the south to about 3000mm in the hills. The sweltering temperatures of the islands are toned down by the trade winds that blow during the months from October and April, and again between the months of May to September. And though the average humidity of the country reaches to a soaring 80%, these dry northwest and southeast trade winds temper it to make the islands pleasant and habitable.

The Seychelles is governed under the constitution of 1993. The president, who is both head of state and head of government, is popularly elected for a five-year term and is eligible for two more terms. The Council of Ministers serves as a cabinet, and the president appoints its members. The President is also the Minister responsible for Defence, Legal Affairs, Information and Tourism. The Vice- President also held the portfolio for Finance and Trade, Public Administration and Communication Technology. The Designated Minister is also responsible for the Ministry of Community Development, Youth and Sport. The other cabinet consist of another seven Ministries namely; Ministry for Social Development and Culture, Ministry for Education, Employment and Human Resources, Ministry for Foreign Affairs. The division within the governments responsibilities in the area of health is the Ministry for Health, for that of environmental control is the Division of Environment within the Ministry for Home Affairs, Environment and Transport, as well as land-use for economic development are shared by both Ministry for Investment, Natural Resources and Industry and Ministry for Land Use and Habitat.

Investors can lease land from government and buy/lease land from the private sector. The government does not sell land for commercial or industrial activities but leases out for a term ranging from 50 years to 99 years, depending on the type and scale of the development. Commercial and industrial lands are lease rate depend on the location and the topography of the land. However, the rate can change depending on prevailing circumstances. If the property belongs to a private individual, the purchaser can obtain freehold title to the land.

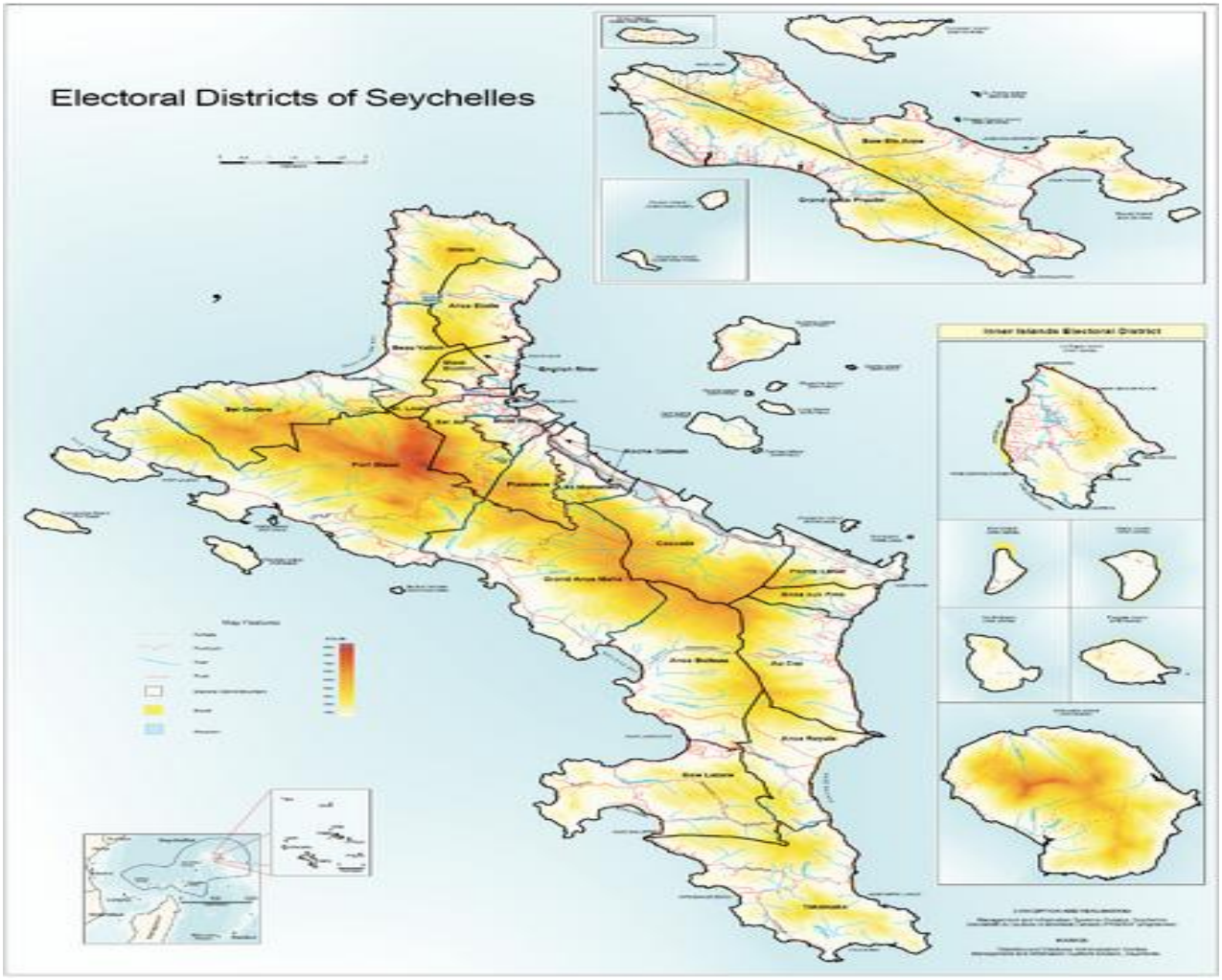

Figure 1-2: Electoral Districts of Seychelles

The unicameral legislature consists of the 34-seat National Assembly. Twenty-five members are elected by popular vote, and parties winning at least 10% of the vote choose nine proportionally. All serve five-year terms. Administratively, the country is divided into 25 districts out of which 23 are on Mahè, 2 on Praslin (Inset top left) and inner island (Inset bottom left).

Mahè (23 districts)	Anse aux Pins, Anse Boileau, Anse Etoile, Anse Louis, Anse Royale, Baie Lazare, Beau Vallon, Bel Air, Bel Ombre, Cascade, Glacis, Grand' Anse (on Mahè), La Riviere Anglaise, Les Mamelles, Mont Buxton, Mont Fleuri, Plaisance, Pointe La Rue, Port Glaud, Roche Caiman Saint Louis, Takamaka	
Praslin (2 districts) Inset top left	Baie Sainte Anne this include Baie St. Anne and four other islands facing this district.	Grand Anse (on Praslin) this include Grand Anse and three other islands facing this district.
Inner Island (1 district) inset bottom left	This district is made up of six islands namely; La Digue, Denis, Bird, North Island, Fregate and Silhouette.	

Box 1-1: Administrative Districts in Seychelles

1.4 AGRICULTURAL, INDUSTRIAL AND OTHER KEY ECONOMIC SECTORS

The Agricultural Sector, most particularly crop and livestock production in Seychelles has lost most of its economic importance over the past two decades. Once the mainstay of the economy, it has now been relegated to outdate. The fisheries sector is based principally on industrial tuna fishing activity and canned tuna export and is still a strong economic pillar, surpassing the tourism sector in terms of foreign exchange earnings in certain years.

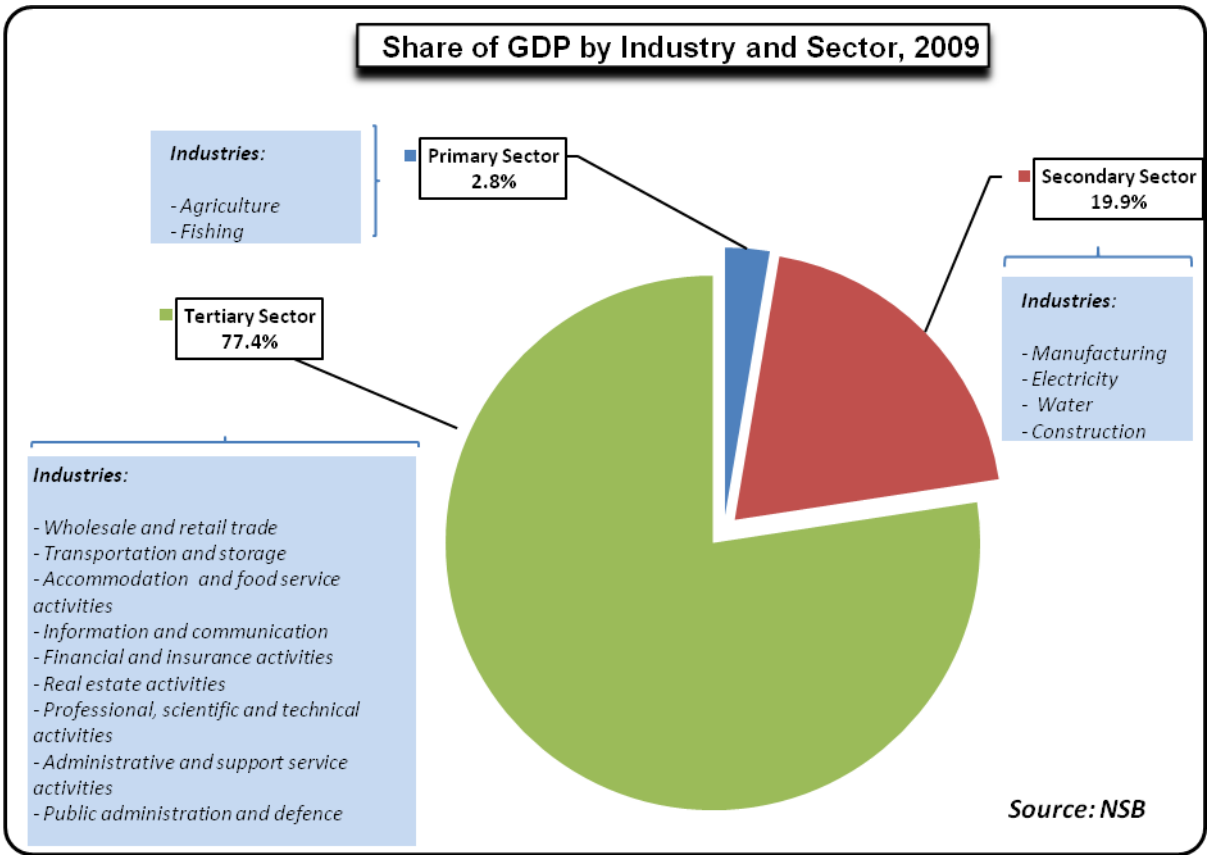

Figure 1-3: Share of GDP by Industry and Sector 2009

Sector	Contribution to the Gross Domestic Product (%)	Number of Employees	Major Products in each Sector
Industrial/Manufacturing	19.9%	11,906	Construction, Manufacturing, Water, Electricity, Tobacco and beverages
Quarrying	0.7%	18	Concrete, Granite Products
Agricultural	2.8%	738	Crops, Livestock, canned tuna, frozen fish

Table 1-7: Overview of the Industrial, Mining and Agricultural Sectors

The total number of employees in 2009 was 49,685 as shown in Table 1-6 of which 738 persons were employed in the agriculture, forestry and fishing sector. This figure includes persons employed in government, private and

parastatal but does not however include fishermen who are classified as casual workers or self-employed. There are an estimated 1,700 to 1,800 people in this category. Forestry remains a relatively non-productive sector.

It remains difficult to have a breakdown of Agricultural Production, in the case of Seychelles by district as not much of the farmers keep data. However, the Ministry responsible for agriculture does have some information for such but it is does not represent the actual situation. It is estimated that about 6,000 hectares remain for agricultural development, agricultural activity is concentrated on Mahé and Praslin islands and only a total of 600 hectares is actually being utilized. Very little private land is under agricultural production and a number of constraints plague the state land leased to farmers. A recent survey showed that of a total of 277 hectares allocated to 333 farmers, only 120 hectares was under cultivation. 142 farmers were utilizing less than 50% of their land. (Agricultural Planning and Land Management Division, May 2008).

There are only two (2)-granite quarry operators in Seychelles their main product are granite dust, aggregate, building blocks and other granite-base construction materials and there is no mineral industrial production and mining (including offshore) activities in the country (refer to table 1-7). Further to that there are much more personnel employed in the quarry industry, some are categories in the manufacturing industries as they also produced construction material and granite product.

1.5 INDUSTRIAL EMPLOYMENT BY MAJOR ECONOMIC SECTORS

It is very difficult to have the figures to be able to classify industrial employment by major economic sector. This is so as not all of them classified are workforce involve in those work, most of them are working within the government Ministry for that particular industry. Table 1.4a gives the figures that are recorded from the social security records and returns from parastatal offices.

Industries	Size of workforce (no. of employees)					
	1 - 3	**4 - 9**	**10 - 19**	**20 - 49**	**50-99**	**100+**
Agriculture & Forestry	34	12	7	2		
Fishing	10	2		1	1	
Mining & Quarrying			2			
Construction	142	69	18	10	6	10
Manufacturing	125	69	18	12	4	3
Wholesale and Retail Trade	572	171	24	13	1	1
Hotels & Restaurants	140	75	32	17	15	16
Transport, Storage & Communication	128	49	14	5	5	4
Finance and Business	230	76	23	12	4	3
Education	2		2		1	1
Health & Social Work	27	15	7			
Other Community, Social & Personal Services Electricity & Water	209	63	12	11	3	2
Total Number of Establishments	**1619**	**602**	**158**	**83**	**40**	**40**

Table 1-8: Size of Workforce by Industries
(Source: Seychelles National Statistics Bureau from Social Security records and returns from Parastatal offices)

The National Statistics Bureau classification system are available for the level of employment and the annual output in different sectors of the national economy as given in table 1-6a and 1-6b respectively. These data does not provide details of their implications for safe management of chemicals and related waste.

Based on latest available information, GDP at *basic* prices in 2009 was 9,053.3 million rupees and GDP at *current market* prices was 10,725.8 million rupees compared to 8,709.9 million rupees in 2008. The growth rate in 2009 was (0.7%), this estimate is indicative as it is based on compilation using partial data from financial statements and estimates derived from production and employment numbers. In 2008 real GDP recorded a growth of (-1.3%) which is lower than the previously published growth of -0.9%. The GDP per capita in 2009 was R122, 865 representing an increase of 22.7% over 2008.

SIC	Industry		2007	2008 (Provisional)	2009 (Indicative)
A01	Agriculture		**106.6**	**130.5**	**172.0**
A03	Fishing		**78.1**	**88.9**	**78.4**
C10	Manufacture of food		**270.6**	**307.2**	**417.4**
C11-12	Manufacture of beverages and tobacco		**170.2**	**171.1**	**198.7**
C23	Manufacture of concrete, rock products, glass etc		**51.2**	**70.7**	**80.2**
C13-22,24-33	Manufacturing, other		**166.2**	**201.0**	**152.6**
D	Electricity, gas, steam and air conditioning supply		**36.3**	**28.5**	**69.7**
E	Water supply; sewerage, waste management and remediation activities		**53.8**	**64.9**	**74.5**
F	Construction		**360.6**	**486.2**	**568.5**
G	Wholesale and retail trade; repair of motor vehicles and motorcycles		**522.2**	**762.6**	**1,000.7**
H	Transportation and storage		**674.7**	**778.8**	**865.2**
I	Accommodation and food service activities		**1,001.2**	**1,501.0**	**1,954.7**
J	Information and communication		**231.2**	**275.9**	**347.6**
K	Financial and insurance activities		**414.9**	**448.8**	**720.6**
L01	Real estate activities		**156.3**	**314.7**	**556.2**
L02	Owner occupied dwellings		**494.6**	**592.8**	**697.4**
M	Professional, scientific and technical activities		**121.5**	**155.0**	**164.5**
N	Administrative and support service activities		**177.2**	**211.5**	**310.1**
O	Public administration and defence; compulsory social security		**558.6**	**587.3**	**553.0**
P	Education		**231.4**	**257.8**	**246.0**
Q	Human health and social work activities		**177.0**	**191.5**	**181.9**
R	Arts, entertainment and recreation		**46.7**	**55.6**	**65.3**
S	Other service activities		**36.7**	**37.3**	**55.8**
X	Allocation of FISIM to Nominal Sector		(280.6)	(321.0)	(477.6)
	All Industries	**GDP at current basic prices**	**5,857.3**	**7,398.8**	**9,053.3**
	Taxes less Subsidies		966.5	1,311.1	1,672.6
		GDP at current market prices	**6,823.8**	**8,709.9**	**10,725.8**

Table 1-9: Gross domestic product by industry at current market prices
(Source: Seychelles National Statistics Bureau)

1.6 RELEASES OF CONCERN BY MAJOR ECONOMIC SECTORS

There is widespread concern among the population about the potential dangers of the chemical imported into the country in increasing amounts. While there are some form of government control on import, use, storage and disposal; Seychelles still does not have a comprehensive legislation to control all aspect of chemical especially in its capacity to monitor their release in the environment.

Accidents with chemicals are not that much a serious issue but those occurred or reported are most of the time intentional, some incident though are most probable go unreported. Monitoring for chemical residues in foods, drinking water and the environment is yet to be established. There is only one company that import, distribute and re-export petroleum product' and they are very particular on safety issues therefore oil pollution is only a minor problem. They have well established safety procedure in place and have project in progress to start collection of used oil and oil product included cooking oil for re-export.

1.7 ASSESSMENT AND COMMENTS

A small island developing state (SIDS), its small land area and population, remoteness from major markets and limited land based resources characterize Seychelles and; this lead to a heavy reliance on external resources linked to tourism, and marine resources and imports of consumer products and capital input. Seychelles narrow resource base and other vulnerabilities as a SIDS have resulted in a heavy dependence on external financial flows for its economic and social development.

The Seychelles National Statistics Bureau, created in 2006, is responsible to provide data about the level of economy for use by government, private and overseas analyst, etc., and to provide the government with information as a basis upon which to plan future development and decision-making. Hence, this is a starting point whereby all data related to sound chemical management can be safe keep and be accessible for planning and programme preparation, appraisal, implementation and monitoring. This could also imply data required for policy formulation, research and administration in all stage of the life cycle of sound chemical management.

CHAPTER 2: CHEMICAL PRODUCTION, IMPORT, EXPORT, STORAGE, TRANSPORT, USE AND DISPOSAL

Seychelles is not an industrial country, therefore production and export of chemicals is not an issue. However, chemicals substances that are essentially use by the local industry and the population are purchase from other countries. Private companies normally do the importation of these chemicals, and these are then distributed or sold to support production or their own industrial activities. There are also small amounts of chemicals imported by governmental ministries namely Health and Agriculture, other institutions responsible for laboratory diagnosis or experiment, control pest of public health importance or other pest control activities and the agricultural sector. However, the accurate amount chemicals imported and used is not known due to the unavailability or scattered data collection of such information.

With the exception of companies like the Seychelles Petroleum Company (SEPEC), Seychelles Breweries (SeyBREW) and Indian Ocean Tuna (IOT) industries, the statistical data relative to the importation and use of chemical is inadequate and not accurate. Most of the data are not systematically gathered or stored for proper analysis. Data in this chapter are collected from different ministries, civil society and non-governmental organisation. The majority of the data are based on sources from 2008 – 2009.

2.1 CHEMICAL PRODUCTION, IMPORT AND EXPORT

There is no chemical production and export in the country, all chemical items are imported and used by importer or retail for specific purposes. Through these processes is the available statistical Information regarding the importing, re-exporting (petroleum product only) and use of chemical substances. The imports are mainly:- Chemical fertilizers; Pesticides; Chemicals for pharmaceutical formulation/ Drugs; Industrial chemical (raw materials); Petroleum Products; Chemical products for consumer use; Chemical substances for laboratories.

Chemical Type	Imports /year	Formulation/ Packaging/year	Re-Exports /year
Pesticides (agricultural, public health & consumer use)	Powdered – 17,922.9kg Liquid – 38,782.6 L	-	-
Fertilizers (both chemical & biological)	Powdered – 201,000kg Liquid – 47,823 L	-	-
Petroleum Products	Gas oil – 304,585,013L Fuel oil – 99,752,091L Jet A-1 – 82,115,432 L Mogas – 33,928,116L	-	- 198,261,721L - 38,907,962L - 55,705,279L - 11,452,177L
Industrial	1,903,481kg	-	-
Consumer Chemicals	250,110kg 19,508L		
Other chemicals Liquid Medicine Medical Tablet Livestock Drug	} 200,296,058 kg 20,197kg	4,885litres 18,113,55kg	

Table 2-1: Chemical Production and Trade 2008-200

Note that all data for both Liquid Medicine and Medical Tablet are for both of the year 2008 and 2009. This is so as to capture most of the raw materials, liquid and solid medicine, vaccine and other drugs in use in hospital. In one year, it is difficult to get all as these are imported as and when it is necessary. Note also that some of the stocks are still in use.

Raw Materials	Import/Year
Cosmetic Industries	90,200Kg
Food Processing	13,421kg
Brewery/Distillery	1,271,602kg
Pharmaceutical	Powdered - 18,113.55kg Liquid – 4,885 L

Table2-2: Raw materials for Chemicals and Related Industries for 2009

2.2 CHEMICAL USE BY CATEGORIES

Following the systematic introduction of various plants over the years, and the importation of fruits, vegetables, flowers, and wood from other countries, pest and diseases were also introduced which requires the use of chemicals to protect the plants and increase production. Pesticide use to control pest in Agriculture and Health are imported by the Ministries responsible for such. Fertilizers include nitrogenous, phosphatic and complex fertilisers. Nitrogenous fertilisers include Urea, Ammonium Sulphate, Calcium Ammonium Nitrate and others. The phosphatic fertilisers include Single Super Phosphate, Triple Super Phosphate and others. Complex fertilizers include Di-Ammonium Phosphate, Nitrogen - Phosphorus – Ammonium - Phosphate Sulphate (NP - APS) /Nitrogen Phosphorus Potassium (NPK) and others.

The bulk of the chemicals imported for the use in Seychelles are industrial cleaning compound and household cleaners, however the statistic here is very limited. Industrial uses are for PUC for water and effluent disinfection and treatment; additives for food processing and tuna canning factory; and brewery industries. There are also two importers of raw materials for the manufacture of household paints. Raw materials include Methyl Isobutyl (MIBK), Toluene, Xylene and glacial acetic acid. Products for automotive are imported as intermediaries or finished products. Cosmetic sector is areas whereby no statistics are available however, substances imported for this sector include Caustic soda, Acetone, Methyl Ketone Peroxide (MEKP), sulphuric Acid and Sodium Sulphate. The chemical in the table include chemical classified under these categories, which are use, and they does not address formulations and preparations.

Type of Chemical	Amount use per year (2009 data)
Pesticides - Agricultural	11478L 8136kg
Pesticides - Public Health	19,304.6L 37.786kg
Pesticides - Consumer Use	8,000kg
Fertilizers	Powdered – 201,000kg Liquid – 47,823 L

Type of Chemical	Amount use per year (2009 data)
Petroleum Products	Gas oil – 106,323,292L Fuel oil – 60,844,129L Jet A-1 – 26,410,153 L Mogas – 32,475,939L
Industrial Chemicals (used in manufacturing/processing facilities)	1,903,481kg
Consumer Chemicals	250,110kg 19,508L
Other Chemicals (unknown/mixed use)	Cosmetic – 90,200kg Food Processing – 12,000kg Brewery/Distillery – 1,271,602

Table 2-3: Chemical Use by Categories

2.2.1 STORAGE OF CHEMICALS AND RELATED ISSUES

Chemicals in the country are normally imported and used for specific purposes and the volume imported is not so significant that it would need a large storage area. Most importers and users usually import what is needed for a specific period and order as and when is necessary.

All agricultural chemicals imported by the Ministries responsible for Agriculture are stored in the bulk storage situated at Grand Anse Mahe and then distributed to requisition store to sell to farmers and local for their own garden. This building is especially built for this purpose and equipped with basic safety facilities to deal with occupational and environmental accident. The Ministry of Health has its own storage facilities with all its amenities for storage of medicine and other chemical on it premises at the Seychelles Hospital. There is also a pesticide store for the storage of chemicals the Public Health Services uses to control insect and pest of national health importance. However, there is much to be desired when it come to the provision of safety procedures for the handling of these chemicals. The location and size of the facility is also an issue, mainly due to unavailability of ample space to site a proper pesticide storage facility on the hospital compound. It does however provide some form of security.

The SEPEC, SeyBREW and IOT Factories have very good and adequate storage facilities and these companies can be referred to other organisations as example of best practices when it comes to chemical storage. Their inventories updates can be accessed by all designated staff in the organisation. These companies have trained personnel in the field of sound management, health and environment protection, both in relation to handling of the chemicals at the site and impact on the community.

Most of the facilities describe above are for storage of chemicals. However, consumers chemical are stored most of the time if not together, within the same section in the importer or distributor warehouse. Not much information is available on storage facilities of other importer. These are mostly stored on shelves or cabinets in storage rooms on the users' premises. Hence, this is why it is not possible to define comments in table 2-4 below. It is also good to note that most of the importers and distributors have sound knowledge on the disastrous consequences to health and the environment that may result due to mishandling of chemicals. Some organisations are also trying their best to improve on their storage facilities.

Chemical Type	Size/Capacity (Volume in cubic meters or weight in tons)	Type of Facility	Location Area (port, industrial complex, urban, rural)	Labelling; Health and Environment Protection Measures
Pesticides Agricultural Health	 30,000lts 20 tonnes	 Enclosed Enclosed	 On site Hospital Premises	Safety Data Sheet
Fertilizers	150 tonness	Enclosed	On site	Safety Data Sheet
Petroleum Products Motor Gasoline Jet A – 1 Gas Oil Fuel Oil LPG (Mahe) LPG (Praslins) Kerosene Mogas (Praslin	 5820 tonnes 20786 tonnes 70885 tonnes 15040 tonnes 1309 tonnes 1540 tonnes 440 tonnes 400 tonnes	Enclosed	Secure Inland tankers	Safety Data Sheet
Industrial Chemicals	Not possible to define	Enclosed	On-site	Some have Safety Data Sheet
Consumer Chemical	Not possible to define	Enclosed	On-site	Some have Safety Data Sheet
Chemical Waste	Not possible to define	Enclosed	On-site	-

Table 2-4: Bulk Chemical Storage and Warehousing Facilities

2.2.2 TRANSPORT OF CHEMICALS AND RELATED ISSUES

Seychelles is not a supply chain centre, hence the issues related to transportation of chemical is not applicable here. Chemicals that are imported into the country through customs go directly to companies who will make use or distribute of them. Imported chemicals are transported either by sea or by air; and upon arrival in the country; the chemical is transported by truck to the bulk storage facilities. All necessary precaution is taken during transportation to prevent any spillage. There is no transit of chemicals to other country and importations are for local usage only. The importation is according to international protocol concerning all Health and Environmental protection measures.

2.2.3 CHEMICAL WASTE

In Seychelles, medical waste is by far the largest waste stream that will require treatment in future (as it is now). With the nearly completed diagnosis centre to be open soon, we also need to prepare for a disposal facility to cater for radioactive waste. Not much information is available from other usage of chemical as to chemical waste generation. Most of liquid waste is poured into the drainage system and solids are mixed with other waste. Storage of chemical waste at most companies is far from being considered safe.

Type of Chemical Waste [1]	Generation (tons/year)	Export (tons/year)
Waste oil	722.344	722.344 (Yr 2009)
Hazardous waste	34.88	There is no treatment or exportation of hazardous waste. The total quantity of hazardous waste is dumped in an uncontrollable manner in the Landfill.
Old Batteries	63.67	
E (Electronic) Waste (Refrigeration, Television sets)	-	These are included in normal waste and dumped at the landfill with other waste.

Table 2-5: Chemical Waste Generation and Trade 2009
(Source: Data from Seychelles Landscape and Waste Management Agency & Department of Environment)

Waste oil is stored in cistern at the landfill for exportation to Reunion Island. The Hazardous wastes include;

- **Inflammable organic solvents-**Hexane, Chloroform, Benzene and their derivatives.
- **Expired Pesticide-**Insecticides, Herbicides, Fungicides, Rodenticides, Fumigants.
- **Inorganic elements and compounds** including Acids and Bases, paint products, halogens and derivatives.
- **Heavy/Bio-toxic metals** e.g. Mercury, Lead, Cadmium, arsenic and these are dumped at the landfill. Record as far back as 2006 from the Department of environment shows that waste such as scrap metal, dry batteries, paper scrap, pet flakes, copper, brass, aluminium, radiators, compressor (but without refrigerant) are being exported to countries such as Mauritius, India, Madagascar and China. For the year 2009 certificate for approximately around 4000 tons were issued for their exportation.

2.2.4 OVERVIEW OF TECHNICAL FACILITIES FOR RECYCLING OF CHEMICALS

Seychelles does not really possess much in terms of relevant recycling or recovery facilities for chemicals and related waste, as it exists for some non-chemical waste such as PET bottles and glass. Chemical waste is more or less permanently stored or exported. For now no treatment is done but waste oil are simply stored in cisterns of 50m³, 25m³ and 10m³ after collection from clients supposedly for exportation. The exception is for waste oils from electricity generation; the Public Utilities Corporation incinerates on its own on-site facility at Roche Caiman.

2.2.5 OVERVIEW OF CAPACITY FOR DISPOSAL OF CHEMICALS.

Relevant facilities that exist for disposal of chemicals and related waste in the country are minimal. The main facilities are Land dumping followed by incineration at certain organisation namely, Ministry of Health and PUC.

A shed exists at the landfill for hazardous waste with an internal drain to cater for spillage. This chemical waste storage facility is rather open and not monitored for emission. Hazardous waste stored therein are Inflammable organic; Expired Pesticide, insecticides, Herbicides, Fungicides, Rodenticides, fumigants; Inorganic elements & compounds including acids and bases, paint products, halogens and derivatives; Heavy/Bio-toxic metals e.g. Mercury, Leaf, Cadmium, Arsenic.

A positive note though is that the Seychelles Petroleum company has embarked on a new project on collection of all waste oil including cooking oil for possible recycling and re-exporting.

2.2.6 ASSESSMENT AND COMMENTS

Seychelles is signatory to Basel Convention since 1993. As at now, there exists cooperation with Regional country (Reunion) for recycling, recovery and disposal of waste oil. Within the Stockholm Convention on POPs, the country produced the National Implementation Plan (NIP) in 2007.

The Health and environmental impacts of the facilities and/or infrastructures of disposal or storage is such that spill of chemical waste is highly probable and incidents were recorded in the past. No monitored for emission at the facility or storage areas are being conducted since only land filling is presently done thereon. Presently a new and modern landfill is being constructed, this one will have proper leachate collection and treatment; collection of methane; and monitoring facilities for emissions.

It had also been well documented that six of the Persistent Organic Pesticides (POPs) were in the past imported and used in Agriculture Medical Construction industry. There were namely Aldrin, Toxaphene, Dieldrin, DDT and Chlordane. The importation of the PCB based oil is also possible as traces of PCBs were recorded in 1991 and 2004. To date Seychelles does not import or use POPS.

2.3 UNINTENTIONALLY GENERATED CHEMICALS

No monitoring is conducted to identify unintentionally generated chemicals, such as dioxins, furans and polycyclic hydrocarbons. It is however; mentioned in the NIP for meeting the requirements of the Stockholm Convention that the two main sources of dioxins and furans in the country are waste incineration and uncontrolled domestic waste burning along with vehicular emission.

2.3.1 CONCLUDING REMARKS

Physical (manual), literature and web search revealed paucity of information (data) for this chapter. Most organisations do not have database or specific log for keeping such. The entities do not have work force designated specifically for data collection on import, transport, use and waste disposal of chemicals. Data are

more or less scattered in different section within the same institution. Questions remain whether there are gaps or whether these data are reliable.

There is no appropriate or suitable monitoring system in chemical management, particularly in data collection, emission control and evaluation, use, storage and disposal. Data collecting mechanism is very difficult and need integration. Thus, there is an urgent need to address the following to redress the situation and at the same time meet the requirements for a sound chemical management system for the country:

- Capacity building and manpower development to develop an integrated data collection management system for Chemicals.
- Capacity building and manpower development to develop strategies and regulatory mechanism for chemical
- Facilities for the measurement and the continuous monitoring of chemicals level in the country.

In regards to the existence of synergy between the various partners implementing legislations on chemicals, there is, to some degrees a significant amount of existing cooperation. This is attributed mainly to the small size of the country and the familiarity of the various partners to the role of each other in regards to chemicals management. For example, the Department of Environment (DoE) is closely linked to the Environmental Health Section of the Ministry of Health both in their legislations (Environmental Protection Act (EPA) for DoE and Public Health Act for Ministry of Health) and the enforcement works of their legislations.

It is perceived however, that there is a noticeable gap between the civil sector and the private sector in the line of implementing treaties and legislations dealing with chemicals management. This discourages synergies between the two sectors, which calls for further strengthening. A possible solution could be the empowering of the Seychelles Liaison Unit for Non-Governmental Organization of Seychelles (LUNGOS) to act as the pivot between the two sectors for ease of dialogue and communication. The facilitation of dialogue will automatically lead to synergising of efforts to combat chemicals setbacks in Seychelles. A good example of this is the implementation of the GHS system by certain non-government firms (e.g. SEPEC) whereas the Government is yet to adopt as policy the use of GHS in workplaces.

CHAPTER 3: PRIORITY CONCENRS RELATED TO CHEMICALS AT ALL STAGES IN THEIR LIFE CYCLE

Chemicals constitute a vital part of the Seychelles livelihood. Each stage in the chemical life cycle can make significant contribution to social and economic development of the country but it also has the potential to negatively influence various areas of development. The main concerns with the activities at the different stages of the life cycle directly relate to the health, environmental and economic implications.

3.1 PRIORITY CONCERNS

In Seychelles, the chemical importation, transportation and use which are of most concern relate to pesticides, raw material for medical products, raw material for industrial, hazardous chemical contaminated in equipment, chemical products for household use, and chemical wastes. There has not been a comprehensive study or any estimates on chemical use and related issue therefore no identification concerning the amount of chemicals used or chemical poisoning in any area except for those intentional poisoning that are reported to the hospital. Therefore, the identified problems or concerns related to chemicals use here are based only on visible observation and conclusions from various documents but without scientific findings.

Nature of Problem	City/ Region	Brief Description of Problem	Chemical(s)/ Pollutant(s)
Burning of waste	National	People keep burning waste at home and thus produce air pollution	carbon
Composting and landfills	Providence	Open landfills usually gives out dangerous gasses which can affect the health of workers as well as the environment	methane
Carbon emission	National	Increase transportation (land, sea and air)	carbon

Table 3-1: Description of Problem Areas

Nature of Problem	Scale of Problem	Level of Concern	Ability to Control Problem	Avail-ability of Statistical Data	Specific Chemicals Creating Concerns	Priority Ranking
Air Pollution: General Rural	National	High	Medium	Insufficient reporting from Greenline	Burning of waste of all types.	3
Air Pollution: General Urban	Local	Medium	Medium	Insufficient		
Air Pollution: Motor Vehicles	National	High	Low	Insufficient	Carbon Emissions	1
Air Pollution: Industrial	Local Construction work on Praslin Island	High High	Low Low	No quality data available Two incidents	-Sulphides -Gas from septic tanks	2
Drinking Water Contamination	Local	Medium	Medium	Available but not accessible (SBS)		
Ground-water Pollution	Local	Low	Medium	No data available		
Pollution of Inland Waterways	National	High	Medium	Insufficient		
Marine Pollution	Local	Low	Low	No data available		
Soil Contamination	Local	Low	Medium	Insufficient		
Hazardous or chemical Waste Treatment/ Disposal	National	High for chemical handlers and those living close by.	Low (Available resources but lack of willingnes)	Available but not in readily accessible form	-Dust from UCPS	3
Medical waste Treatment/ Disposal	Local	High	Low	Green line report but not sufficient	Burning of medical waste by private clinics	1
	National	High	Low	Not available		1
Storage/Disposal of Obsolete Chemicals	(not significant)					

Nature of Problem	Scale of Problem	Level of Concern	Ability to Control Problem	Avail-ability of Statistical Data	Specific Chemicals Creating Concerns	Priority Ranking
Chemical Residues in Food	National	High	High	Insufficient	Melamine (Natcof)	3

Table 3-2: Priority Concerns Related to Chemicals

1 Enter: Local, regional, or national.
2 Enter: Low, medium, or high.
3 Enter: Sufficient, insufficient, or no data available; data source should be mentioned separately.
4 Provide relative ranking from 1 to 5 of the problems being faced by the country (1 = most severe problem(s), 2 = second most severe problem(s), etc.). As appropriate, the same ranking can be given to different problem areas.
5 For example, to ensure compliance with decisions made as part of the UNEP/FAO prior informed consent procedures.

3.2 ASSESSMENT AND COMMENTS

- Seychelles has a clear lack of chemical data, information, records of chemicals assessment, and sound references for identification of the nature of problems related to chemicals. It should not be concluded that Seychelles does not have concerns with chemicals just because its tools for chemical problems assessment are inadequate. On the contrary, Seychellois people face high risks and lack awareness on the effects caused by chemical hazards and chemicals use, especially those caused by toxic and/or hazardous chemicals in businesses, their communities, and their households. The population not only face dangers through direct use of chemicals, but also in residues accumulated in food products, which can affect people's health.

  Pesticides have been widely used in campaigns to control mosquitoes and other insect or pests with no monitoring of possible environmental effects. Accidents with chemicals are potentially more serious within the limited environment of small islands, due to lack of proper chemical monitoring system in place in, most incidents will probably go undetected and unreported.

  There is a Pesticides Control Act in Seychelles dated since 1996. The act regulates the manufacture, distribution, use, storage and disposal of pesticides for the protection of public health and the environment. It makes provisions for the establishment of the pesticides board and imposes further restrictions to manufacture , import , export, sell, offer for sale , supply ,use, store, transport, possess, dispose or otherwise deal with any pesticides and also makes provisions on the labelling of such chemicals. To note that the Act is outdated and does not address the current issue related to chemicals and chemicals product.

- It is strongly believed that Victoria is in fact one of the regions on Mahe where there is a regional concentration of chemicals related problems. During the past few years, there has been a significant increase in traffic running in Victoria thus a higher level of carbon emission although as mentioned earlier, there is no regular monitoring to measure the emission.

  In addition, The IOT factory is found in the vicinity of the town and since it is the industry which uses the most ammonia locally, then the town is at risk. It is to be noted that a few incidents have happened at the fishing port, even one fatality case related to ammonia.

Chemical-related problems vary according to regions. For example there is a lot more soil contamination from pesticides in the Val D' Endore region since it is an agricultural region. People at Anse des Genets are affected by crusher dust coming from UCPS. Thus some regions are more affected than others based on the type of industry and activity that are found in that particular region.

- The country is also constrained in its ability to dispose of its chemical wastes in an environmentally sound manner. No centralised or dedicated hazardous waste storage, treatment or disposal facilities are available hence, these substances are either stored at the site of generation or at off-site locations or are indiscriminately disposed of. The storage of such wastes has created stockpiles in several organisation or landfill site.

  There is need for dedicated facilities to store and treat chemical wastes, particularly the more toxic substances. There is however a newly proposed sanitary landfill site, construction of which started in January 2010 and shall complete in June 2011. The new landfill, which shall be an improvement over the existing infrastructure, will include a hazardous waste disposal system (i.e. the hazardous wastes that are allowed to be encapsulated in concrete and buried into the landfill) or infrastructure to manage some categories of the chemical wastes.

  As a common agreement between the concerned parties and stakeholders within Seychelles, the issues of priority in regards to chemicals management concern enforcement of regulations, ironing out of roles of stakeholders, removal of gaps and overlaps in chemicals management, assimilation and processing of chemicals data, chemicals disposal and educational programs. Other aspects such as chemicals disaster response plans, risk reduction, control of illegal importation are considered as secondary priority as it is believed that the successful implementation of the issues of prime concerns will automatically open doors for the successful implementation of other issues of concerns.

  Finally, it must be stated that there is widespread concern about the potential dangers of the increasing amounts of chemicals imported into SIDS such as Seychelles. The lack of adequate legislation and mechanism to control the importation, distribution and use of these toxic chemicals is a serious concern for SIDS. The custom workers' limited expertise and experience in identifying chemical products may not be able to clearly classify or identify new or unfamiliar names especially with the amount and magnitude of importation. Unclaimed or confiscated property may simply sit in a warehouse until the containers deteriorate and the contents spill out or seep down in the environment. This call for strengthened international cooperation initiation aiming at setting international standards and legislations to tackle this issue, such as inter-country transport of chemicals; trans-boundary pollution/contamination due to chemicals, smuggling and illegal traffic in chemicals among others.

CHAPTER 4: LEGAL INSTRUMENTS AND NON-REGULATORY MECHANISMS FOR MANAGING CHEMICALS

4.1 OVERVIEW OF THE NATIONAL LEGAL INSTRUMENTS WHICH ADDRESS THE LIFE CYCLE MANAGEMENT OF CHEMICALS

The Government of Seychelles puts a lot of emphasis on the preservation of the environment. This is reflected through the signing of several international conventions regarding the environment and other related issues all of which have been implemented in the Seychelles.

The prevailing law which is the Constitution of Seychelles provides, every citizen of Seychelles the right to live in and enjoy a clean, healthy and ecologically balanced environment (Article 38). The State undertakes to put in place measures to promote the protection, preservation and improvement of the environment; to ensure sustainable socio-economic development by judicious use and management of resources; and to promote public awareness of the need to protect, preserve and improve the environment. Similarly Article 40 of the constitution makes it a duty of every citizen to protect, preserve and improve the environment.

With regards to legislation dealing with different environmental issues which may have an adverse effect on the environment, several pieces of legislation have been enacted as further detailed:

4.1.1 INTERNATIONAL CONVENTIONS

Seychelles is signatory to a number of conventions of relevance to chemicals but only some of these conventions have been implemented into our national laws. The following conventions related to chemicals have been signed by Seychelles:

Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC), Rotterdam, 1998

The Convention was adopted in 1998 with the aim of promoting a shared responsibility between exporting and importing countries in protecting human health and the environment from the harmful effects of certain chemicals and pesticides, by controlling and monitoring trade. Seychelles signed the Convention in 1998. The Convention has been implemented, to a certain extent, through the Environment Protection Act 1994 and the Pesticides Control Act, 1996.

Protocol on Liability and Compensation for Damage resulting from the Transboundary Movements of Hazardous Wastes and their Disposal, 1999

This Protocol which was adopted in 1999 makes provision for a comprehensive regime for liability as well as adequate and prompt compensation for damage resulting from the transboundary movement of hazardous wastes and other wastes, including incidents occurring because of illegal traffic in those wastes. Seychelles has not ratified or signed this protocol. However, section 12 of the EPA covers the movement of hazardous waste.

Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, 1989

The Basel Convention which came into force in 1992 seeks to reduce the movements of hazardous waste between countries and to prevent transfer of hazardous waste from developed to less developed countries. It is also intended to minimize the amount and toxicity of wastes generated and to assist less developed countries in

environmentally sound management of the hazardous and other wastes they generate. Seychelles acceded to the Convention in 1993 and it has been implemented into the national law through the Environment Protection Act, 1994.

Stockholm Convention on Persistent Organic Pollutants (POPs) - (May 2002)
This Convention is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have adverse effects to human health or to the environment. In response to this global problem, the Convention, which was adopted on 22nd May 2001 and entered into force on 17th May 2004, requires parties to take measures to eliminate or reduce the release of POPs into the environment.

The twelve POPs listed under the Convention are not being imported into the country, although some of these chemicals were used in the past, especially in the agricultural industry and Ministry of Health.

A National Implementation Plan (NIP) for Persistent Organic Pollutants (POPs) has been developed with funding from GEF and technical assistance from UNIDO. Activities under the POPs NIP are being supported through the fifth GEF country allocation (GEF V).

United Nations Convention on the Law of the Sea (UNCLOS) 1982
This Convention defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. Seychelles ratified the said Convention in 1991.

Seychelles ratified the Convention in 1991 and it has been implemented into the national law through the Maritime Zones Act, 1999 which determines the maritime zones of the country. Furthermore, the Maritime Zones (Marine Pollution) Regulations, 1981 provide for the protection and the preservation of the marine environment as well as the prevention and control of marine pollution. The Regulations also prohibit the discharge of any oil or oily mixture into the territorial waters of the Seychelles from any place on land.

Montreal Protocol on Substances That Deplete the Ozone Layer
This is a protocol to the Vienna Convention for the Protection of the Ozone Layer. It is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances believed to be responsible for ozone depletion. The treaty was entered into force on January 1, 1989. Since then, it has undergone seven revisions, in 1990 (London), 1991 (Nairobi), 1992 (Copenhagen), 1993 (Bamako), 1995 (Vienna), 1997 (Montreal), and 1999 (Beijing).

Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities 2010

Article 7 – Other harmful activities

This Protocol which was developed under the Nairobi Convention, deals with land-based sources and activities in the western Indian Ocean region. Seychelles signed this Protocol in April 2010.

There is at present a hazardous waste management system in place which partly complies with the Basel Convention. This procedure requires disposers to identify and characterise their waste according to the Basel Convention and UN Hazard number including the packaging and mode of transport. The notification document

and mode of disposal is approved by the focal institution before the material can be transported in the country from generator to disposer. This system has worked very well in tracking the chemicals including those in Annex II of the LBSA protocol, which require disposal. However there are areas for improvement such as classification of waste which have not yet been formalised. A holistic life cycle approach is also required in order to track hazardous materials from importation to disposal.

International Labour Organisation: Chemicals Convention, 1990 (No. 170)

This Convention deals with the protection of workers from the harmful effects of chemicals. It also notes that workers have a need for, and right to, information about the chemicals they use at work. The Convention applies to all branches of economic activity in which chemicals are used and these are branches in which workers are employed, including the public service. It does not apply to organisms, but does apply to chemicals derived from organisms.

Although Seychelles is a member of the International labours Organisation, it has not ratified ILO Convention on Chemical Safety.

4.1.2 NATIONAL LEGISLATIONS

In Seychelles there are very few legal instruments for the management of chemicals and related waste.

Table 4-1 provides a list of legal instruments which are of particular importance for the management of chemicals and related waste in Seychelles. They explain the objective of those instruments, the ministries or bodies responsible for their implementation, the chemical use and categories of waste covered, the relevant provisions and also the level of enforcement and prosecution.

Legal Instrument (Type, Reference, Year) [1]	**Responsible Ministries or Bodies**	**Chemical Use/Waste Categories Covered**	**Objective of Legislation**	**Relevant Articles/ Provisions**	**Resources Allocated** [2]	**Enforcement Ranking** [3]
EPA 1994	DOE	Hazardous substances and wastes	Handling of hazardous substances and importation, exportation, transportation and disposal of hazardous wastes	S.12 (6-8) and S.14	SR25,000 plus other costs	2
Standards Regs 1995	DOE	Effluent quality standards	Discharge of effluent in natural watercourse	S.3		1

Ozone Regs 2010	DOE	Controlled and prescribed substances and products	Restricts importation, exportation, sale, use, purchase and recovery of controlled substance or products : prohibits production, manufacture, importation, exportation, sale, purchase and use of prescribed products and substance	Ss. 4 - 10		1
Public Health Act 1960	MOH			Ss. 6 & 7		2
Pesticides Control Act 1996	Pesticides Board	Pesticides	Registration and permit, labelling, storage, disposal of pesticides	Ss. 10 - 18		2
Licences Act 2010	SLA	Pesticides and Petroleum Products	Licensing of pesticides and petroleum products activities	Ss. 20 -22 and Part I of the Schedule		
Licences (Petroleum Storage and Sale) Regs 1987	SLA	Petroleum	Storage and sale of petroleum	Ss.6 and 7		1
Maritime Zones (Marine Pollution) Regs 1981	SMSA	Oil or oily mixture	Prohibiting discharge of oil or oily mixture into the territorial waters			1
Trades Tax (Imports) (Restricted and Prohibited Goods) Regs, 2009	Customs	Goods	Prohibiting and restricting importation of goods			1

Table 4-1: References to Existing Legal Instruments Which Address the Life Cycle Management of Chemicals

1 Copies of relevant legislation should be made available as an Annex to the National Profile.
2 Budget and person years.
3 Enter: effective (1), fair (2), or weak (3) enforcement.

The **Environment Protection Act (EPA) 1994** is administered by the Seychelles DoE which is the authority designated under the said Act to coordinate the activities of other agencies concerned with the protection of the environment. Among other things, the Act deals with the handling of hazardous substances and also the importation, exportation, transportation and disposal of hazardous wastes.

Section 12 of the Act provides for the management of waste and also provides the minister with the power to designate the Agency responsible for the management of wastes. The Landscape and Waste Management Agency (LWMA) is responsible for the management of wastes; the designation, monitoring and regulation of waste disposal sites. Under subsection 6 no hazardous waste can be disposed except and in accordance with an authorisation. Subsection 7 prohibits the importation of hazardous waste into Seychelles and subsection 8 (a) restricts the transportation of such waste within or through Seychelles without an authorisation. Subsection 8 (b) restricts the exportation of hazardous waste to any country without an authorisation from the LWMA and the prior informed consent of the receiving country. Authorisation under section 12 is given by the LWMA.

Under **section 14** of the Act, no person shall handle or cause to be handled any hazardous substances except in accordance with such procedures and after complying with such safeguards as prescribed. Under this section, handling in relation to any substance means the manufacture, processing, treatment, package, storage, transportation, importation, use, collection, destruction, conversion, offering for sale, transfer or the like of a substance.

The following documents have been issued by SBS to support this section: SBS 1994 SS 36 94 Code of Practice for Handling, Storage and Disposal of Hazardous Chemicals & other Agricultural Pesticides; SBS 1995 SS 45 95 Code of Practice for the Disposal of Hazardous and Radio-Active Waste. The aim of these Codes of Practice is to minimise the adverse effects of domestic and industrial chemicals by strengthening measures to regulate their import, sale, storage, use and disposal.

The management of hazardous chemicals or substances is also dealt with under the **Environment Protection (Impact Assessment) Regulations 1996** for the manufacture, handling, storage and transportation of hazardous chemicals or substances as projects or activities requiring environmental authorisation.

Section 3 of the **Environment Protection (Standard) Regulations 1995** prescribes effluent quality standards and the discharge of effluents to a recipient system from any industry or operation. It specifies maximum concentrations for a range of pollutants which may be present in effluent discharges.

Section 4 of the **Environment Protection (Ozone Regulations) 2010** prohibits the production, manufacturing, importation, exportation, sale, purchasing and use of prescribed substances and products. Any person who has imported such substance or product into Seychelles will re-ship the substance or product to the port of origin at his own cost. Section 5 prohibits the production and manufacturing of controlled substances and products in Seychelles whereas section 6 restricts the importation, exportation and sale of controlled substance or products unless he holds a permit issued under these regulations or he is registered by the Ozone Unit which is the body designated by the Minister to implement the Ozone Regulations.

Section 7 restricts the use of controlled substance without a permit and “use” in this section includes installing, servicing and operating a controlled substance. Section 8 restricts the decommissioning of controlled and prescribed substance or product without a licence issued under the Licences Act. Under section 9, a person who imports, exports, sells, purchases or uses a controlled substance of product shall make arrangements for the recovery of the substance from refrigerators and air conditioners, fire protection systems, equipment containing

such substances, controlled or prescribed products before the recycling or reclamation, during servicing and maintenance and before dismantling or disposal of such products, at the person's own cost and under the supervision of an officer authorised by the Administrative Officer. Finally, section 10 makes provision for a person who imports, exports, sells, purchases or uses controlled substances or products to take all practicable measures to prevent leakage of substances constituting controlled products whenever they handle such products.

Although very rare in number, the non-compliance of the EPA on a major scale can lead to maximum penalty of SR 250 000.00 (€ 15 000.00) fines or 2 years imprisonment. There are however, the occasional "small" illegal activities that are reported through the "greenline". These however, seldom include chemicals-related issues except on constructions sites using chemicals. These are mainly in the form of mis-handling and disposal, causing small-scale pollution. These are controlled very effectively by the Seychelles DoE and the minimum fine stands at SR 500.00 (€30).

Another piece of legislation which is of importance in relation to chemical is the **Pesticides Control Act 1996.** This Act is administered by the Pesticides Board. Section 10, provides that a person shall not manufacture, import, sell offer for sale, supply, use, store, transport, possess, dispose or otherwise deal with any pesticide unless the pesticide is a registered pesticide under Schedule 1 of the Act, unless the person holds a licence or permit, subject to and in accordance with any conditions specified in the licence or permit.

Section 11 restricts the import and export of pesticides to an entry or exit point designated by the Minister by notice published in the Gazette. It also provides that a person who imports or exports a pesticide shall declare and offer for inspection the pesticide at the time of import or export to an officer authorized under a written law to inspect goods imported or exported.

Section 12 prohibits the sale and supply of pesticides unless it is labelled in accordance with (under Schedule 2) the Act. The transportation of pesticides shall not be done in a vehicle transporting a commodity for human consumption (section 13). The storage of pesticides is governed by section 14 which restricts the storage of pesticides to a locked room displaying a notice specifying that pesticides are stored therein and prohibiting access to unauthorised persons or children less than 15 years of age. The pesticide shall also be stored in a manner that it is not exposed to direct sunlight; in a leak-proof container and at a level 45 centimetres above ground level of the room.

Under section 15, no person shall, as a trade or business, engage or employ any other person to engage in a Scheduled Operation specified in Schedule 4, unless the person or the other person, in the case of an individual, is the holder of a certificate of competence, approved by the Board, to engage in the Scheduled Operation or in the case of a corporate body, has in its employment persons who are the holders of a certificate of competence. It also makes provision for a person engaged in any Scheduled Operation to wear protective clothing, approved by the Board, to prevent absorption of pesticide by skin or eye contact, inhalation or ingestion.

Under section 16, there shall be no mixing or pouring of any pesticide on an open ground within 9 meters of a water course and any person who mixes or pours any pesticide shall take precautions to prevent spillage of the pesticide on the soil or floor and shall report any spillage to the Registrar within 24 hours of such spillage.

Section 17 provides that any person engaged in the Scheduled Operation of spraying any ground crop, trees, bushes or climbing plants with a pesticide, other than a household biocide or any such operation where a household biocide in excess of 250 grammes or 1 litre is being used or dealt with, within an open area shall

display in a conspicuous place in that area a notice stating that the scheduled operation is being carried on in that area and prohibiting access to that area of any unauthorized person within the period specified in the notice. Under section 18, an authorized laboratory may be granted a permit to import, export or possess a pesticide for scientific research.

Under the **Public Health Act (PHA) 1960** the Ministry of Health is invested with some competences related to water protection. Under section 6 of the Act Minister may make regulations to provide for the chemical examination and bacteriological examination of any supply or source of supply of water which is or may be used for drinking or domestic purposes. The minister may also make regulations under section 7 to provide for the control and administration of the flow of water in any natural or artificial watercourse which is or may be used for irrigation or agricultural drainage.

As far as waste is concerned, under section 16 of the Act the term "nuisance" is defined *inter alia* as "(g) any deposit of material in or on any building or street which causes damp in any building so as to be injurious or dangerous to health;" and further "(q) any accumulation or deposit of refuse, offal, manure or other matter whatsoever which is injurious or dangerous to health;"

Under Part 1 of the Schedule of the **Licences Act 2010**, importers and distributors of pesticides need to be licensed in order to conduct such activities. For storage and retail of petroleum products one needs to obtain a licence.

The **Licences (Petroleum Storage and Sale) Regulations 1987** regulates the storage and sale of petroleum. It makes provision for all dealers of petroleum to obtain a licence to deal in or sell petroleum, to operate a petroleum warehouse, to operate a petroleum supply pump and for the storage of petroleum. In Seychelles, there have been no cases of breach to this regulation as SEPEC is the only licensed company that deals with the importation, processing, sale and transportation of petroleum products.

The **Maritime Zones (Marine Pollution) Regulations, 1981** provides for the protection and the preservation of the marine environment as well as the prevention and control of marine pollution. The Regulations also prohibit the discharge of any oil or oily mixture into the territorial waters of the Seychelles from any place on land.

The Seychelles Maritime Zones are frequently being monitored by the Seychelles coastguard and there is the occasional report through the "greenline" for chemicals-related pollution of the zones, although they are on a small scale. These are dealt with promptly by the Department of Environment and they sometimes include fines.

Trades Tax (Imports) (Prohibited and Restricted Goods) Regulations, 2009 provides a list of goods which are prohibited from importation into the country and also goods which an approval is needed for importation. Prohibited goods include radioactive substances, toxic chemicals including asbestos and pesticides, different types of wastes including hazardous chemical wastes and CFC gas and equipment dependent on CFC and HCFC. Restricted goods include fertilizers, mineral fuels, mineral oils and products of their distillations, bituminous substances, mineral waxes, pyrotechnic products and blasting explosives, pharmaceutical and veterinary products and dangerous chemicals and precursor chemicals.

The penalties the follow the non-compliance of this regulation also include fines similar to the EPA. However, they also include confiscation of the offending product and in some more serious cases (albeit very rare), these include suspension of licence for importation as well as court proceedings.

Other legal instruments dealing with chemical and related issues are as follows:

The **Occupational Health and Safety Decree 1978** makes provisions for the health, safety and welfare of persons employed in factories and other related places. Among other things, it deals with the steps to be taken before operating a factory, the guarding of dangerous machines, the emissions to the working environment, the handling of dangerous materials, the use of appropriate protective clothing, the training of persons to work on any machine, which may cause injury and the obligations of both employers and the employees to ensure safety at work places.

Paragraph 2 of Schedule 1 of the **Public Health (Water Examination) Regulations** provides for the maximum contaminant levels of chemicals and physical properties of drinking water. Schedule 1 also provides for the requirement of swimming pool. It specifies the correct amount of chlorine or other chemical that should be used to disinfect a swimming pool, the level of chlorine residual that should be maintained at the outlet and the bacteriological quality of the water in the pool.

Under section 40 of the **Public Utilities Corporation (Sewerage) Regulations 1987,** no person shall discharge or cause to be discharged any of the following liquids, gases or solids to any drain or sewer, unless written permission is first obtained from the Corporation, namely petrol, diesel, oil, or other petroleum products, flammable or explosive liquids, gases or solids, sewage containing or bearing toxic or poisonous solids liquids or gases in sufficient quantities, either independently or combined with other wastes, any petroleum spirit, including oil made from petroleum, bituminous substances or products of petroleum mixture, which gives off an inflammable vapour at a temperature of less than 50 degrees C, any carbide of calcium, sewage having a BOD greater than 500 mg/L, sewage having a COD value of more than double the BOD value.

4.2 SUMMARY DESCRIPTION OF KEY LEGAL INSTRUMENTS RELATING TO CHEMICALS

Section 4.2 provides additional details on legal instruments which are considered of particular importance for the management of chemicals and related waste.

Most of the legal instruments available in Seychelles are of general nature or cover groups of chemicals or waste instead of specific chemicals. For instance the Pesticides Control Act covers pesticides only. The Licences Act covers petroleum products and pesticides whereas the Licences (Petroleum Storage and Sale) Regulations cover petroleum products only. The Environment Protection Act covers hazardous substances and wastes. The Ozone regulations cover controlled and prescribed products and the Maritime Zones (Marine Pollution) Regulations cover oil and oily mixture.

The procedure for the development of new legislation in the Seychelles starts with a cabinet paper by the technical Ministry which details the requirements of the new law. When cabinet approval is received, the Ministry forwards the request to the legal person within the ministry or the draftsmen at the Attorney General's office. The legal person or draftsmen then propose a first draft which is circulated for comments. If the law concerns a regulation under an Act, the Minister signs the document which becomes law and is published in the official gazette. If the law concerns the creation or amendment of an Act, then it has to have the endorsement of the Parliament before signature by the President. The document is then published in the Official Gazette. If the law is of high importance, it is given media coverage both on television and in newspaper where it is explained in the three main languages use which are English, French and Creole.

There are administrative procedures included under the legal instruments such as the need to provide certain information during application of licence or permit. In the case of registration of pesticides, the following information is required namely, a description of the pesticide giving its trade name, the common name, the active ingredient, other ingredients, its chemical name and concentration; the name and address of the manufacturer, packager and supplier; the purpose for which the registration is sought; toxicological data including material data sheets, efficacy trials and environmental or health reports and the safe periods after application of the pesticide; a statement as to whether the pesticide is banned or severely restricted in the country of origin or of packaging due to health or environment reasons; the proposed draft label for the storage, sale or supply of the pesticide; the proposed method of storage of the pesticide and the intended method of disposal of the pesticide and its container if so required due to surplus or expiry date for use.

In the case of an application for a permit to deal in prescribed substance and product and a licence for the storage and sale of petroleum, the information needed are prescribed in a form provided by the Authority.

The fine imposed upon non compliance to the above laws and regulations vary, from SR300 per kg for all import of prescribed substance of product under the Ozone Regulations to SR250, 000 under the Environment Protection Act. The term of imprisonment also vary from 2 years imprisonment under the Pesticides Control Act to 6 years under the EPA.

Licence and permit be revoked or suspend under the Licences Act and the Pesticides Control Act where there has been a breach of any conditions. The Licences Act may also order the closure of the premises in which an activity, business, trade or profession is or has been engaged in, contrary to the licence granted.

Enforcement under the EPA has been very effective. There have been several offences committed under the EPA with regard to chemicals, such as misuse of chemicals in mechanical garage, release of oil both on land and at sea, and release of chemical which has caused injury to health and the killing of fish. In most of these cases, the offender has decided to settle the matter out of court instead of being prosecuted.

With regard to other pieces of legislation, it has also been difficult to ascertain the effectiveness of those legislations due to the unavailability of data and lack of information.

4.3 EXISTING LEGISLATION BY USE CATEGORY ADDRESSING VARIOUS LIFE CYCLE STAGES OF CHEMICALS FROM PRODUCTION/IMPORT THROUGH DISPOSAL

There is no specific legal instrument regulating the different stages of chemicals from production/imports through disposal and recycling. There is a need therefore to amend existing laws and regulations to deal with the different types of chemicals and also to deal with the different stages of chemicals including labelling and means of disposal.

Alternatively, a Chemical Bill should be enacted to regulate the different stages of chemicals, the classification of chemicals, the different types of licenses required for handling of chemicals and also the means of disposal. The Bill should also include different types of offences and a number of penalties for failure to comply with different provisions of the Bill.

Category of Chemical	Import	Production	Storage [1]	Transport [2]	Distribution/ Marketing	Use/ Handling	Disposal
Pesticides (agricultural, public health and consumer use)	x		x	x	x	x	
Fertilizers							
Industrial Chemicals (used in manufacturing & processing facilities)	x		x	x	x	x	
Petroleum Products	x		x	x	x	x	
Consumer Chemicals	x		x	x	x	x	
Chemical Wastes (Hazardous wastes)						x	

Table 4-2: Overview of Legal Instruments to Manage Chemicals by Use Category

4.4 SUMMARY DESCRIPTION OF KEY APPROACHES AND PROCEDURES FOR CONTROL OF CHEMICALS AND RELATED WASTE

This section provides an overview of the existing policy approaches and procedures used to control various classes of chemicals and related waste.

Section 12 (6) and (8) of the EPA require an authorisation from the Authority to dispose, transport and export hazardous waste. The application should be addressed to the Administrator with the necessary details such as the means of transportation, the type of and amount of hazardous substances, and if exporting of substances, the country of export.

The EPA also makes provision for application for authorisation for the discharge effluent and also for the discharge of emission in a controlled area. The application should include, among other information, the location and parameters to be discharged.

Under the Pesticides Control Act application for registration of pesticides should include the description of the pesticide such as the common and brand name, the active ingredients, name and address of manufacturer,

packager and supplier, the purpose of registration, toxicological data, a statement as to whether the pesticide is banned or restricted, proposed method of storage and intended method of disposal.

With regards to the Seychelles Licensing Authority, different procedures or approaches are used. There is an issuance procedure for issuance of a new licence, where more detailed information is required. There is also a review process for renewal of licence where less information is required. License is now granted on a yearly basis. The system will be changed requiring regular monitoring program by different agencies and authorities. License will be granted for 5 years.

The Customs Division entertained applications for import of chemicals and export of hazardous substances such as batteries. An application with the necessary details is forwarded to various authorities such as the Department of Environment and Health Department for review before approval is given.

Most people dealing with chemicals are not properly trained and there is virtually no training of this nature being provided locally. This poses a limit on the level and nature of enforcement. The more trained a person is, the more efficient he becomes in dealing with violations of legislation. There is a need therefore to train personnel dealing with chemicals in order to better enforce legislation and also to help reduce the risk of accident, especially among those handling chemicals. There is also a need for overseas training as well as to identify local trainers.

The following tables provide a listing of chemicals which have been banned and severely restricted.

Name of Chemicals	**Level of Restriction (ban (B) or severe restriction (SR)**	**Details of Restriction (E.g. reason for control action, remaining allowed uses, etc.)**
ALDRIN	Banned	
ARKOTINE D18	Banned	
AZODRIN	Banned	
CHLORDANE	Banned	General misuse by the public
DIELDRIN	Banned	
ENDOSULPHAN	Banned	
FURADAN 4F	Banned	
FURADAN 10G	Severe Restriction	
HEPTACHLOR	Banned	
TAMARON	Banned	
METHYL BROMIDE	Severe Restriction	
RAMROD	Banned	
TERRACUR	Banned	
VEGATROL	Banned	
WEEDAR	Banned	
WEEDONE	Banned	
BIDRIN	Banned	
BHC DUST	Banned	
DYNAP	Banned	
ENDRIN	Banned	

FOLIDOL	Banned	
GALECRON	Banned	
NAMAGON	Banned	
PHOSVEL	Banned	
POLYOXIN A1	Banned	

Table 4-3a: List of all Banned or severely restricted Chemicals in Seychelles
Source: *Seychelles Agricultural Agency*

Group	Substance	Level of Restriction (ban (B)) or severe restriction	Details of Restriction (E.g. reason for control action, remaining allowed uses, etc.)
CFCl3	(CFC-11)	Banned	Refer to details of restriction above
CF2Cl2	(CFC-12)	Banned	
C2F3Cl3	(CFC-113)	Banned	
C2F4Cl2	(CFC-114)	Banned	
C2F5C	l (CFC-115)	Banned	
CF2BrCl	(halon-1211)	Banned	
CF3Br	(halon-1301)	Banned	
C2F4Br2	(halon-2402)	Banned	
CF3Cl	(CFC-13)	Banned	
C2FCl5	(CFC-111)	Banned	
C2F2Cl4	(CFC-112)	Banned	
C3FCl7	(CFC-211)	Banned	
C3F2Cl6	(CFC-212)	Banned	
C3F3Cl5	(CFC-213)	Banned	
C3F4Cl4	(CFC-214)	Banned	
C3F5Cl3	(CFC-215)	Banned	
C3F6Cl2	(CFC-216)	Banned	
C3F7Cl	(CFC-217)	Banned	
CCl4	carbon tetrachloride	Banned	
C2H3Cl3	1,1,1-trichloroethane (methyl chloroform)	Banned	
CH3Br	methyl bromide	Banned	

Table 4-3b: Prescribed substances = banned
Details of Restriction – banned under the Montreal Protocol and the Environment Protection (Ozone) Regulations 2010

Group	Substance	Level of Restriction (ban (B) or severe restriction	Details of Restriction (E.g. reason for control action, remaining allowed uses, etc.)
CHFCl2	(HCFC-21)	Severe Restriction	
CHF2Cl	(HCFC-22)	Severe Restriction	
CH2FCl	(HCFC-31)	Severe Restriction	
C2HFCl4	(HCFC-121)	Severe Restriction	
C2HF2Cl3	(HCFC-122)	Severe Restriction	
C2HF3Cl2	(HCFC-123)	Severe Restriction	
CHCl2CF3	(HCFC-123)	Severe Restriction	
C2HF4Cl	(HCFC-124)	Severe Restriction	
CHFClCF3	(HCFC-124)	Severe Restriction	
C2H2FCl3	(HCFC-131)	Severe Restriction	

C2H2F2Cl2	(HCFC-132)	Severe Restriction	
C2H2F3Cl	(HCFC-133)	Severe Restriction	
C2H3FCl2	(HCFC-141)	Severe Restriction	
CH3CFCl2	(HCFC-141b)	Severe Restriction	
C2H3F2Cl	(HCFC-142)	Severe Restriction	
CH3CF2Cl	(HCFC-142b)	Severe Restriction	
C2H4FCl	(HCFC-151)	Severe Restriction	
C3HFCl6	(HCFC-221)	Severe Restriction	
C3HF2Cl5	(HCFC-222)	Severe Restriction	
C3HF3Cl4	(HCFC-223)	Severe Restriction	
C3HF4Cl3	(HCFC-224)	Severe Restriction	
C3HF5Cl2	(HCFC-225)	Severe Restriction	
F3CF2CHCl2	(HCFC-225ca)	Severe Restriction	
2ClCF2CHClF	(HCFC-225cb)	Severe Restriction	
C3HF6Cl	(HCFC-226)	Severe Restriction	
C3H2FCl5	(HCFC-231)	Severe Restriction	
C3H2F2Cl4	(HCFC-232)	Severe Restriction	
C3H2F3Cl3	(HCFC-233)	Severe Restriction	
C3H2F4Cl2	(HCFC-234)	Severe Restriction	
C3H2F5Cl	(HCFC-235)	Severe Restriction	
C3H3FCl4	(HCFC-241)	Severe Restriction	
C3H3F2Cl3	(HCFC-242)	Severe Restriction	
C3H3F3Cl2	(HCFC-243)	Severe Restriction	
C3H3F4Cl	(HCFC-244)	Severe Restriction	
C3H4FCl3	(HCFC-251)	Severe Restriction	
C3H4F2Cl2	(HCFC-252)	Severe Restriction	
C3H4F3Cl	(HCFC-253)	Severe Restriction	
C3H5FCl2	(HCFC-261)	Severe Restriction	
C3H5F2Cl	(HCFC-262)	Severe Restriction	
C3H6FCl	(HCFC-271)	Severe Restriction	
CHFBr2		Severe Restriction	
CHF2Br	(HBFC-22B1)	Severe Restriction	
CH2FBr		Severe Restriction	
C2HFBr4		Severe Restriction	
C2HF2Br3		Severe Restriction	
C2HF3Br2		Severe Restriction	
C2HF4Br		Severe Restriction	
C2H2FBr3		Severe Restriction	
C2H2F2Br2		Severe Restriction	
C2H2F3Br		Severe Restriction	
C2H3FBr2		Severe Restriction	
C2H3F2Br		Severe Restriction	
C2H4FBr		Severe Restriction	
C3HFBr6		Severe Restriction	
C3HF2Br5		Severe Restriction	
C3HF3Br4		Severe Restriction	
C3HF4Br3		Severe Restriction	
C3HF5Br2		Severe Restriction	
C3HF6Br		Severe Restriction	
C3H2FBr5		Severe Restriction	
C3H2F2Br4		Severe Restriction	
C3H2F3Br3		Severe Restriction	
C3H2F4Br2		Severe Restriction	
C3H2F5Br		Severe Restriction	
C3H3FBr4		Severe Restriction	
C3H3F2Br3		Severe Restriction	
C3H3F3Br2		Severe Restriction	
C3H3F4Br		Severe Restriction	
C3H4FBr3		Severe Restriction	
C3H4F2Br2		Severe Restriction	
C3H4F3Br		Severe Restriction	

C3H5FBr2		Severe Restriction	
C3H5F2Br		Severe Restriction	
C3H6FBr		Severe Restriction	
CH2BrCl	bromochloromethane	Severe Restriction	

Table 4-3c: Controlled substances = severe restriction

Details of Restriction – restricted under the Montreal Protocol and the Environment Protection (Ozone) Regulations 2010

Substance	Restriction (ban (B) or severe restriction	Details of Restriction (E.g. reason for control action, remaining allowed uses, etc.)
Radioactive substances		Refer to footnote
Toxic chemicals	Banned	
Wastes or wastes product or both of any kind	Banned	
CFC gas and equipment dependent on CFC and HCFC	Banned	

Table 4-3d: Prohibited goods = Banned

Details of Restriction – banned under the Trades (Imports) (Restricted and Prohibited Goods) Regulations, 2009

Substance	Level of Restriction (ban (B) or severe restriction	Details of Restriction (E.g. reason for control action, remaining allowed uses, etc.)
Fertilizers (growing media and compost)	Restricted	Refer to footnote
Mineral fuels, mineral oils and products of their distillations, bituminous substances; mineral waxes	Restricted	
Pyrotechnic products and blasting explosives	Restricted	
Pharmaceutical and veterinary products	Restricted	
Dangerous chemicals and precursor chemicals	Restricted	

Table 4-3e: Restricted goods = Restriction

Details of Restriction – restricted under the Trades (Imports) (Restricted and Prohibited Goods) Regulations, 2009

4.5 REGULATORY INSTRUMENTS FOR RELATED ACTIVITIES WHICH IMPACT ON CHEMICALS MANAGEMENT

A Town and Country Planning Act and its subsidiary legislation have been enacted. The Act and its subsidiary legislation are administered by the Seychelles Planning Authority which is the Authority designated under the Act. They deal with land use issues but there is no provision for chemicals and related issues except classification of such as buildings so used where hazardous processes or materials are involved and buildings in which are stored or used hazardous materials in respect of which special legislation exists. These buildings are classed as Class E and G respectively. There are however certain unwritten policies with regards to certain chemicals. Containment must be built for the prevention of release of petroleum products.

There is also a policy of sensitive areas where activities involving chemicals are prohibited. In residential areas however, certain activities involving chemicals are restricted.

The EPA which is administered by the DoE makes provision for the disposal of hazardous wastes. An authorisation is required for the disposal of hazardous wastes or chemicals. The Environment Protection (Standard) Regulations regulate the quality of effluent to be discharged in the environment. The parameters provided in the regulations are or international norms. They are guidance from European and USA norms.

4.6 NON-REGULATORY MECHANISMS FOR MANAGING CHEMICALS

Very few non-regulatory mechanisms exist, though not specifically directed towards chemicals management, which serve indirectly to promote the sound management of chemicals in Seychelles. Voluntary actions by industries have also played a role in the management of chemicals.

Responsible programs such as the phasing out of lead in paint by the two main companies dealing with provision of paint in Seychelles have been a success. This shows a certain degree of healthy cooperation between the government, industries and private companies.

Another program is the phase out of lead in gasoline being undertaken by the SEPEC in close collaboration with the DoE. This program which is almost reaching its final stage has already been proved to be a success.

4.7 ASSESSMENT AND COMMENTS

In Seychelles there are overlaps in the implementation of chemical legislations between ministries and agencies. For example, licensing of pesticides is being implemented under the Pesticides Control Act and the Licences Act. In case of a violation, it is not sure which law should be applied.

Seychelles legislation regarding chemicals and the management of their life cycle is fragmented resulting in difficulties for many stakeholders and interested and affected parties to ascertain which legislation is specifically relevant to their special field of operation.

Enforcement of legislation remains a challenge in Seychelles. In many instances where the Public Health Act fails to cater for offences dangerous to human health, the Environment Protection Act will come into play so as to bring those offenders to justice. A very good example is where the offender is doing reparation of boats in a residential area using substances which are dangerous to human health. Although this type of offence is dangerous to human health, it is dealt with under the EPA instead of the PHA.

Certain banned chemicals are regulated by brand names instead of chemical names. Many importers use this loophole to try and import banned or restricted chemicals in the country. Their main argument is that they did not know that these chemicals were banned or restricted because they did not know the brand name.

Most of the Seychelles laws dealing with chemicals are outdated and need to be revised. Most of them do not cover the complete life cycle management of chemicals such as means of transportation and methods of disposal. One constraint is the lack of funding is preventing this from happening. There is also a shortage of legal draftsman in AG's office for the revision and drafting of legislation.

There are several rules and policies in place but they are not legally binding. This makes enforcement difficult. For example, for transportation of chemicals, the Pesticides Control Act deals with transportation of pesticides only. With regards to other types of chemical, no regulations are in place and therefore it is difficult to control the transportation of chemicals.

Regarding non-regulatory instruments in reducing chemicals risk in the country, certain industries have voluntary program or procedure in place. Industries like Seychelles Breweries, Indian Ocean Tuna Ltd and Seychelles Petroleum Company have their own response plan in place in case of a chemical release or spill. The main reason for having such program or procedure is to comply with the norms of international organisation which they are affiliated with or for ISO certification. Another reason is to reduce the cost liability in case of an accident in the workplace. One more reason is for providing more security at work.

As mentioned above, not all industries have such program or procedure in place. One reason is because there has not been any accident at the workplace and therefore they believe that there is no need for such program or procedure.

As mentioned earlier, several pieces of legislation are in place but they do not address the complete life cycle management of chemicals and related wastes. There is a need to regulate the production including packaging and labelling, trade, storage, use and disposal of chemicals. There is also the need for classification of different types of chemicals such as pesticides, industrial chemicals and consumer chemicals.

A Peaceful Use of Chemicals Bill has been drafted and is being sent to the Cabinet of Ministers for approval before being sent to the National Assembly. This Bill deals with chemical weapons including toxic chemicals and their precursors and discreet organic chemicals.

Seychelles have certain obligations under various international conventions. Certain laws and regulations have been implemented to take into account those obligations. For instance, the EPA and the Pesticides Control Act have to a certain extent implemented the Convention on the PIC Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC), Rotterdam, 1998.

Another convention which has been implemented into our national laws is the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989. Section 12 of the EPA prohibits disposal of hazardous waste except in accordance with the authorisation from the Agency responsible for the management of waste. The Act also regulates the transboundary movement of hazardous waste and its transport within or through Seychelles or export hazardous waste to any country without an Authorisation from the Agency or the prior informed consent of the receiving country without an Authorisation from the Agency. The Environment Protection (Impact Assessment) Regulations to certain extent also deals with the management of hazardous waste whereas section 14 of the EPA provides for the management of hazardous substances.

There is at present a hazardous waste management system in place which partly complies with the Basel Convention. This procedure requires disposers to identify and characterise their waste according to the Basel Convention and UN Hazard number including the packaging and mode of transport. This system has worked very well in tracking the chemicals including those in Annex II of the Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities 2010, which require disposal. However there are areas for improvement such as classification of waste which have not yet been formalised.

The Protocol on Liability and Compensation for Damage resulting from the transboundary movements of hazardous wastes and their Disposal, 1999 has also been implemented into our national laws through section 12 of the EPA which covers the movement of hazardous waste.

The United Nations Convention on the Law of the Sea (UNCLOS) 1982 has been implemented into the national law through the Maritime Zones (Marine Pollution) Regulations, 1981 which provide for the protection and the preservation of the marine environment as well as the prevention and control of marine pollution. The Regulations also prohibit the discharge of any oil or oily mixture into the territorial waters of the Seychelles from any place on land.

The Montreal Protocol on Substances That Deplete the Ozone Layer has also been implemented into our national laws. The Environment Protection (Ozone Regulations) 2010 prohibits the production, manufacturing, importation, exportation, sale, purchasing and use of prescribed substances and products. It also prohibits the production and manufacturing of controlled substances and products in Seychelles whereas section 6 restricts the importation, exportation and sale of controlled substance or products unless he holds a permit issued under these regulations or he is registered by the Ozone Unit which is the body designated by the Minister to implement the Ozone Regulations. It also restricts the use of controlled substance without a permit and “use” in this section includes installing, servicing and operating a controlled substance. It further restricts the decommissioning of controlled and prescribed substance or product without a licence issued under the Licences Act.

The twelve POPs listed under the Stockholm Convention on Persistent Organic Pesticides - (May 2002) are not being imported into the country, although some of these chemicals were used in the past, especially in the agricultural industry and Ministry of Health. New laws are being developed to regulate these chemicals.

The National Implementation Plan developed under the Stockholm Convention has been approved by the Cabinet of Ministers. This plan makes provision for revision of existing laws or development of new laws related to chemicals.

CHAPTER 5: MINISTRIES, AGENCIES AND OTHER INSTITUTIONS MANAGING CHEMICALS

5.1 RESPONSIBILITIES OF DIFFERENT GOVERNMENT MINISTRIES, AGENCIES AND OTHER INSTITUTIONS

There is no institution specifically mandated to deal with chemicals nationally. They are controlled together with other substances of similar usage and characteristics. The following government ministries, agencies and institutions deal with chemicals and related issues;

(a) The **Department of Environment (DoE)** within the Ministry of Home Affairs, Environment, Transport and Energy is the Authority designated under the Environment Protection Act 1994, for enforcing environmental related legislation in Seychelles. The Department of Environment is also the focal point for the Basel Convention and therefore it issues authorisation for exportation of hazardous chemicals.

The Department is currently at the forefront of most international chemicals-related policies, protocols and cooperation, being the lead signatory for the Seychelles government. This now includes the National SAICM focal point. The latest activity being undertaken by the DoE is the phasing out of lead in petroleum products being used in Seychelles, which to date has been completed successfully.

(b) A **Pesticide Board** comprising of 6 representatives from different ministries and agencies has been established under section 4 of the Pesticides Control Act. Its main function is to register pesticides and advises the Licensing Authority on the conditions to be imposed in the grant of licenses relating to pest control services, trade and manufacturing licenses relating to pesticides under the Licenses Act. It also advise ministries and government departments on matters relating to the manufacture, import, export, sale, disposal, handling, distribution or use of pesticides and on the grant of permits or licenses for any such activity. It also consider and report on any matter relating to pesticides referred to the Board by the Minister. This board has however not been active.

The activities of this board are mentioned in chapter 4.

(c) The **Landscape and Waste Management Agency (LWMA)** is governed by the Environment Protection (Landscape and Waste Management Agency) Regulations 2009. It is responsible for the overall management of waste including the monitoring and control of waste disposal sites in the country. It is also the Agency authorising the disposal of hazardous substances.

The activities of the LWMA are governed mainly by the assigning of local contractors and firms for cleaning processes and the management of the Seychelles Landfill. The Agency is also actively involved in the carrying out of recycling processes of certain material such as glass and scrap metals. However, as the process of recycle is market-driven, recycling in Seychelles are on a very small scale and usually do not include chemicals.

As mentioned before, the LWMA faces the most arduous task of taking a leading role in the disposal of chemicals and chemicals-related wastes. This, as stated, is due to a lack of local

facilities (and expertise) for their disposal, although the Department of Environment has the leading role under the Basel Convention to export certain hazardous wastes (e.g. car batteries) to Reunion Island for treatment.

(d) **The Customs Division** of the Ministry of Finance and Trade deals with the procedures for import and export of chemicals. Based on the existing procedure, every importer or exporter of chemicals in Seychelles needs to have an import or export permit from the said Division before they can conduct such activity.

The Customs Division is mainly a monitoring and regulatory body and therefore are very limited in their activities.

(e) The **Division of Risk and Disaster Management (DRDM)** is a division recently inserted within the Department of Environment, dealing mainly with risks reduction and disaster response. It is responsible for the protection of the population, properties and also the environment. Another role of the DRDM is the coordinating body during a disaster such as a chemical spill or release. The Operations Division of the DRDM liaises closely with other agencies in various risk management programs within their workplace.

(f) The **Seychelles Licensing Authority** is a corporate body being administered by a Board consisting of not less than five members appointed by the President for such term and on such conditions as the President may determine. The Authority may after consultation with other public authority, grant or renew a licence, attach or vary conditions of a licence, suspend or revoke a licence. The Authority also has power to order the closure of premises where an activity in beach of the Licenses Act has been committed and also to seize materials, equipment etc used in connection with the breach.

(g) The **Ozone Unit** of the Department of Environment ensures that all chemicals or substances deemed to be responsible for the depletion of the ozone layer are banned in Seychelles by 2020. The Unit is closely linked with the Seychelles National Meteorological Services (DoE), also within the DoE.

The Ozone Unit does carry out the occasional educational program through the national media to raise awareness of the public on the issue of ozone depletion and climate change. The Unit also makes recommendations to the Department of Environment on the restriction of products containing ozone-depleting substances such as refrigeration products containing CFC's etc.

(h) The **Ministry of Health (MoH); Environmental Health Section** enforces the Public Health Act and its subsidiary legislation and has powers to shut down premises if there is likelihood of contamination to water or food or chemical release which may affect public health.

The MoH through the Environmental Health Section is very active on the ground when it comes to dealing with pollution issues including chemicals-related ones. This Section works very closely with the DoE in the enforcement works of both the Public Health Act and the EPA. This is one example of synergizing of efforts on a small scale. The liaison unfortunately, has somewhat died

down considerably as a result of lack of human resources arising from the Voluntary Departure Scheme initiated by the Government, as detailed in chapter 1.

(i) The **Fire and Safety Services Agency–** This agency is responsible for the safety of members of the public in general. They provide advice with regards to protection of fire and safety of workers in work places and also residential homes. It is also the first responder during a chemical release. Officers of the agency are trained in chemicals and they are equipped with certain protective clothing.

As with all countries, the Seychelles Fire and Safety Services Agency is the most equipped body in the country to deal with all sorts of emergencies, including chemicals-related ones.

The following tables show a general overview of responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal.

Table 5-1 shows ministerial responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal.

Stages of Life-Cycle / Ministry Concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
Environment		x	x	x		x	x
Health	x	x	x			x	x
Agriculture	x	x	x	x	x	x	x
Labour			x			x	
Education			x			x	
Seychelles Defence Forces	x		x	x		x	
Customs			x		x	x	
Other (Police)	x	x	x	x		x	x

Table 5-1: Responsibilities of Government Ministries, Agencies and Other Institutions

Table 5-2 shows responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal for pest control handlers.

Stages of Life-Cycle / Pest control Concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
George Gill	x	x	x	x	x	x	x
Harold Michaud	x		x			x	
S-Tex	x		x			x	
PG Denis	x		x			x	
Other (hotels)			x	x		x	x

Table 5-2: Responsibilities of Pest control handlers

Table 5-3 shows industrial responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal.

Stages of Life-Cycle / Industries Concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
SeyBREW	x	x	x	x	x	x	x
Penlac	x		x			x	
SEPEC	x	x	x	x	x	x	
IOT	x		x			x	
Chelle Medical			x	x		x	x
SIF	x		x	x		x	x
PUC	x		x	x		x	x
SBS	x		x	x		x	x

Table 5-3: Responsibilities of Industries

Table 5-4 shows responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal for businesses.

Stages of Life-Cycle / Business Concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
Hairdressers	x		x			x	
Beauticians	x		x			x	
Tourism establishments (beauty & spa)	x		x			x	
Gardeners			x	x		x	x

Table 5-4: Responsibilities of businesses

Table 5-5 shows responsibilities and activities related to chemicals management for each stage of the chemical life cycle from production/import through disposal for construction companies.

Stages of Life-Cycle / Companies Concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
Vijay	x	x	x	x		x	x
Laxmambhai	x	x	x			x	x
Allied Builders	x	x	x	x		x	x
Hari Builders			x			x	x
Others (small companies)			x	x		x	x

Table 5-5: Responsibilities of Construction Companies

5.2 DESCRIPTION OF MINISTERIAL AUTHORITIES AND MANDATES

All the ministries, agencies, institutions, industries, businesses, companies and pest control handlers mentioned above deals with different types of chemicals at different stages of their life cycle and for different purposes. But only some of them deal with management of chemicals.

The Standards and Enforcement Section of the DoE conducts inspection at different institutions or companies. It also enforces the EPA with regard to the prevention and abatement of environmental pollution such as release

of chemicals and other hazardous substances into the atmosphere and watercourses. It also conduct monitoring activities, collection of samples and collection of data on air, water, marine and noise pollution, emissions, quality of effluent being discharged into the environment and also collecting and submitting appropriate evidence on violations of the law.

The Department of Health enforces the Public Health Act and its subsidiary legislation. It monitors the level of chlorine in swimming pools and the bacteriological quality of the water in the pool. It also conducts regular testing of drinking water to ensure that the contaminant level of chemicals and physical properties are maintained.

The Pesticides Board which comprises of 6 representatives from different ministries and departments ensures that pesticides which are used in the country are registered under the Pesticides Control Act. It also ensures that chemicals are properly labelled.

The Ministry of Employment ensures that workers using chemicals and their workplaces are safe. They conduct regular monitoring visits to ensure that all rules and regulations in place are properly followed.

Since there is no authority or body designated specifically to deal with chemicals, there is no budget allocated for chemicals and related waste management activities. All authorities or agencies dealing with chemicals use a certain amount of their budget to deal with chemical issues. These however are usually very limited when considering the magnitude of concerns and priority issues. The allocation of more funds by the Seychelles Government can however be facilitated if there was a specific body dealing with chemicals and such could make specific requests to the Government to disburse funds to deal with specific issues.

In order to implement the concept of a central body for dealing with chemicals management at all levels / stages, technical expertise is required and these are currently inadequate in Seychelles. The provision of training for Seychellois in policy-making, data processing, enforcement and other specific branches of chemicals management such as chemicals waste management is thus very much required.

5.3 ASSESSMENT AND COMMENTS

There are overlaps of ministerial mandates between ministries with regards to their responsibility related to the sound life cycle management of chemicals. For example, licensing of pesticides is being implemented by the Pesticides Board and the Licensing Authority.

With regards to import permit, the Customs Division consults the Ministry of Health, the DoE, the Pesticides Board and the Seychelles Licensing Authority before approval is given for importation of chemicals. At times there is confusion as to which ministry or agency should implement or authorize importation of chemicals.

There are other organizations conducting similar activities within the country and this causes confusion. For example, the monitoring or inspection of sites is conducted by the DoE and Health. Most of the time, officers from one of the department will rely on officers from the other department to carry out visits and this resulted in no visit is being carried out.

There is also the issue whereby not all organizations are using their power under the law to enforce regulations. One example is that most offences regarding oil spill pollution at sea are dealt with by the DoE instead of the Department of Natural Resources.

There is also the issue of chemical spills on land. Whenever there is a spill or release, instead of contacting the Fire Services which is better trained and equipped to deal with such issues, officers of the Department of Environment are called to deal with such issues.

When looking at the ministerial mandates related to the sound life cycle management of chemicals, there is very high hope that if the existing system is re-looked the above named problems would be solved. The mandates of those ministries or agencies should be well defined and explained.

All indications points towards having a new set-up to first of all, review all policies being implemented by the various ministries. This new set-up will look towards the ironing out of the roles of the actors involved in the management of chemicals and will ensure follow-up to the enforcement of policies.

CHAPTER 6: RELEVANT ACTIVITIES OF INDUSTRY, PUBLIC INTEREST GROUPS, PROFESSIONAL BODIES AND THE RESEARCH SECTOR

As mentioned previously, several industries are involved in the production, formulation, sales/marketing, import, export, transport, storage or disposal of chemicals. Some of them have even developed their own emergency plans. Some also provide information to workers in the form of operational manuals to educate workers on chemical safety issues in order to reduce the occurrence of chemical related accidents.

With regards to non governmental organisations, most NGOs in Seychelles are involved in the protection of environment rather than chemicals and related issues.

There are several other industries and companies such as the Indian Ocean Tuna Limited, the Seychelles Breweries, the Public Utilities Corporation, the Chelle Medical, the Seychelles Petroleum Company, the Penlac and the Seychelles Island Foundation, the Seychelles Defence Forces, the Seychelles Police and the Seychelles Bureau of Standards dealing with chemicals at different stages in their life cycle. These industries and companies collect data and conduct testing of various chemicals. They also provide training for their staff handling chemicals and educate their workers by providing information related to chemicals.

Some of ministries, companies and industries such as Seychelles Bureau of Standards, Indian Ocean Tuna, Seychelles Breweries, Seychelles Petroleum Company Penlac, Chelle Medical, Ministry of Health, Public Utilities Corporation, Seychelles Island Foundation, and University of Seychelles have their own laboratory which is used for research purposes. Other organisations such as the Seychelles Police use chemical for analysis purposes and the Seychelles Defence Forces uses chemicals for military functions.

There are also certain private individuals and companies such as hairdressing saloons, beauticians, pest control companies, gardeners and tourism establishments dealing with chemical on a daily basis.

6.1 SUMMARY OF EXPERTISE AVAILABLE OUTSIDE OF GOVERNMENT

Table 6-1 provides an overview of the nature of expertise in non-governmental organizations available to support national programmes and policies related to chemicals and related waste management.

Field of Expertise	Research Institutes	Universities	Industry	Environmental/ Consumer Groups	Labour Unions	Professional Orgs.	Other (specify)
Data Collection	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC	Unisey	IOT, Seybrew PUC, Penlac, Chelle Medical, SEPEC				
Testing of Chemicals	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC		IOT, Seybrew PUC, Penlac, Chelle Medical, SEPEC				
Risk Assessment	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC						
Risk Reduction	IOT, Seybrew Seypec						
Policy Analysis	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC		IOT, Seybrew PUC, Penlac, Chelle Medical, SEPEC				

Field of Expertise	Research Institutes	Universities	Industry	Environmental/ Consumer Groups	Labour Unions	Professional Orgs.	Other (specify)
Training and Education	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC	Unisey	IOT, Seybrew PUC, Penlac, Chelle Medical, SEPEC				
Research on Alternatives							
Monitoring							
Enforcement							
Information to Workers	IOT, Seybrew SBS, PUC, Penlac, Chelle Medical, SEPEC		IOT, Seybrew PUC, Penlac, Chelle Medical, SEPEC				
Information to Public							
Heath Surveillance							
Environmental Surveillance							
Other (specify) (relation with other international institution)	IOT, Seybrew Seypec						

Table 6-1: Summary of Expertise Available Outside of Government

IOT conducts research in mercury and histamine. It also conducts tests to compare the water quality at the discharge point of the factory to that provided by the Public Utilities Corporation (PUC).

SeyBREW conducts test to control the quality of its products and also to check the quality of water being used in the factory.

The PUC conducts tests to check the quality of water into rivers where they are abstracting water.

University of Seychelles (UniSEY) will in the future conduct scientific research through the different science related classes such as medicine.

These institutions have their own laboratory where they conduct their research and some of them are supported by international organisations. Information collected by these institutions may be made available on request.

They also provide training to workers in the workplaces, educate them on the different risks associated with and when working with chemicals. Other form of information is available to workers such as leaflets and manuals.

They also conduct risk assessment at their workplaces but some of them such as the SeyBREW, SEPEC and the IOT conduct risk reduction due to their affiliation with other international organisations.

There is a very great potential for coordination between the various key actors mentioned in the context of dialogue and to facilitate the exchanging of information based on best practices for the management of chemicals. However, in order to effectuate dialogue, which is presently virtually non-existent at present, there need to be a central or "middle- party" which shall have one of its roles as the assimilation and collecting of information from the various stakeholders and act as the pivot through which information can be exchanged. The central body shall also aid LUNGOS at facilitating dialogue between the Government institutions and the private sector, as it has been stated before that such dialogue although present to some extent, are very limited especially in the context of chemicals management.

A very good example of this is the exchange of information between DRDM, which is a government institution and the IOT, which is a non-government institution. Whereas DRDM is responsible for drafting and setting up of policies in regards to risk reduction and disaster response, IOT is currently very much active in risk reduction and disaster mitigation (especially in cases of ammonia leakage). Whereas the information and practices from IOT, proven to be very effective, could have been transmitted to DRDM so that these practices could have been further transmitted to other institutions dealing with ammonia. AS mentioned in chapter 10, the worst disaster of ammonia leakage in the history of Seychelles occurred only recently, which saw the death of 6 people. The proper coordination and transmission of information in regards to best practices of ammonia handling at sea by DRDM could have avoided such disaster. This is just an example and certainly not intended to put DRDM to the blame for the said incident.

6.2 ASSESSMENT AND COMMENTS

In the past years, Natcof initiated a program to educate members of the public on the health risk associated with melamine and the different products containing melamine.

The Seychelles Rescue and Fire Services Agency has an emergency response plan in place to deal with all types of emergencies. They also use this plan to educate employers at workplaces about different safety issues and measures to be taken to keep their workplaces safe.

Non-governmental organisations have the right to seek enforcement of laws and regulations related to the control of chemicals in the Employment Tribunal or the Supreme Court of Seychelles. In principle, they should first go to the Employment Tribunal then appeal to the Supreme Court but most of them prefer to go straight to the Supreme Court because of the nature of cases, the level of compensation awarded regarding health issues.

As stated before, the Seychelles Government is very much committed to take the leading role in drafting of policies, guidelines and legislations for the management of chemicals and to take this information to the non-governmental actors. There are two main setbacks in regards to this endeavour. The main setback is the channel or medium through which this information is passed and how to ensure their enforcement within these actors. This is the reason why so much emphasis is being put on the activation of a central body to take up this matter. Enforcement is a major setback in Seychelles due to a lack of human resources within the various governmental ministries for reasons mentioned in chapter 1.

The second setback lie in the fact that most expertise are now in the non-governmental institutions, again for the reason mentioned in chapter 1. This means that the technical soundness of the set policies and legislations may not necessary be adequate or enough to earn the respect of the non-governmental stakeholders. The only solution for this (given that the government has no immediate intentions to reinforce its human resources in the near and medium-term future) is to initiate the exchange of information, hence the justification of the argument in 6.1.

Finally in regards to the public sensitization programs through the media, the only non-government actor in this endeavour is the Seychelles National Consumers' Forum (NATCOF). However, NATCOF is only partly non-government-based and it is felt that this forum could be strengthened to play a more noticeable role in the context of public education.

CHAPTER 7: INTER-MINISTERIAL COMISSIONS AND CO-ORDINATING MECHANISMS

7.1 INTER-MINISTERIAL COMMISSIONS AND COORDINATING MECHANISMS

Table 7-1 provides an overview of relevant mechanisms for co-ordinating activities among relevant institutions.

7.2 DESCRIPTION OF INTER-MINISTERIAL COMMISSIONS AND CO-ORDINATING MECHANISMS

Most of the organizations represented in table 7-1 have their own coordinating mechanism that will cope with any chemical-related incident that can happen within their organizations. These mechanisms have been established by their own management and most are internal formal arrangement. Their scopes and issues covered are within their organization to handle their own emergencies.

Most of these organizations do not include other outside parties but they can provide assistance in the event of an incident to other organizations. All mechanisms in place are independent and vary depending on the types of chemicals being dealt with. As all organizations have their own mechanisms in place, all decisions are within the organization and they make provisions within their own budget.

The most prominent inter-ministerial mechanisms in Seychelles are the Seychelles Planning Authority and its subsequent sub-committees. The Seychelles Planning Authority meets on a weekly basis to discuss matters of development and to consider proposals made by developers to them, as per the requirement of the law of Seychelles. Sometimes these developments contain a component of chemicals management (e.g. storage areas for clinics and laboratories). In such cases when there is a need for specific expertise, some of the organizations mentioned in table 7-1 are invited on the Board to comment on the proposal e.g. the Seychelles Fire and Rescue Services Agency and SEPEC.

7.3 DESCRIPTION OF MECHANISMS FOR OBTAINING INPUT FROM NON-GOVERNMENTAL BODIES

According to information gathered there are no formal mechanisms for obtaining input from non- governmental bodies, except through the Seychelles Planning Authority for development purposes. The main reasons for this is as mentioned in chapter 6 and previous chapters being that there is a wide gap between the two sectors (government and non-government) that need to be bridged through a central coordinating body.

7.4 ASSESSMENT AND COMMENTS

In the past, chemicals incident were not so common in Seychelles because of low quantities of chemicals being imported. There was little information disbursement, sensitization programs and training regarding the safe handling of chemicals nationally. As a result, the population at large was being exposed to various chemicals risks unknowingly.

Today however, there is proper control on chemicals importation, handling, and to a certain degree, disposal. There is an improvement in education and sensitization (awareness, trained professional, safety etc…). There are many organizations that have their own mechanism in place which further boosts the objective of sound management of chemicals in all stages of their life cycle.

There is however, to a certain extent, a lack of coordination since the management of chemicals is somewhat fragmented over a diverse number of sectors and institutions. This, in a way is understandable as the management of chemicals at various stages of their life cycles, touches such a wide scope of stakeholders. However, in the implementation of the SA in Seychelles, it is believed that one body needs to take a leading role, but with representatives of various sectors. No such body exists in the private sector, except for LUNGOS. However, LUNGOS can ideally be served as the meeting point through which non–state actors could exchange views for best practices for chemicals management.

To further improve on these situations, it is perceived that there must be a legislation that governs the whole life cycle of chemical.
Among the activities that can be taken up by the new body should entail the following:

- Usage of more technologically-advance methods to communicate among organisation in regards to chemicals management;
- Carrying out of more drills to test the effectiveness of the mechanisms; this could also improve the frequency of communication;
- Ensure the management of a central allocation of budget to cope with the different expenses relating to the management of chemicals.
- Formulation of guidelines to adopt in the event of an accident and should link together for the development of disaster preparedness.

There are opportunities to include additional parties on a case-by case basis to deal with specific issue of concern.

Names of institution	Names of mechanism	Responsibilities	Secretariat	Members	Legislative mandate/ objectives	Information provided in section 7.2 (yes/no)	Effectiveness [1]
Seychelles Fire and Rescue Service Agency	Emergency Response Plan	Emergency respond Public evacuation	Seychelles fire and Rescue Service Agency station New Port		Attend all emergencies Save life Protect property and environment	Yes	2
Seychelles Breweries (SeyBREW)	Crisis plan		SeyBREW Factory Le Rocher			Yes	2
Seychelles Petroleum Company (SEPEC)	Emergency Response Plan	Mitigation Prevention	SEPEC base New Port		Prevent and contain any spill or leakage at SEPEC	Yes	2
STAR Seychelles	None	Store and spraying of chemicals	STAR Seychelles Providence		Spray pesticide within their premises	Yes	3
Ministry of Heath	Evacuation plan	Provide medical treatment	Ministry of Heath Victoria Hospital			Yes	2

Table 7-1: Overview of Inter-ministerial Commissions and Co-ordinating Mechanisms

1 Rank between 1 and 3: excellent (1), adequate (2), or poor (3).

CHAPTER 8: INFORMATION MANAGEMENT CAPACITY, DATA ACCESS AND USE

Data on activities at the various stages of the chemical lifecycle is either limited or non-existent. Getting collective data on chemical importation, use, storage is also difficult because most of the information available is not in an organised format. Most of the information collected in this chapter was done manually which is not only time consuming and prone to errors. The data collected is fragmented and is located in several ministries and/or agencies.

8.1 OVERALL AVAILABILITY OF DATA FOR NATIONAL CHEMICALS MANAGEMENT

The fragmented data collected does not qualify the total to be sufficient either qualitatively or quantitatively for decision-making activities. That is, even if one or two organisations does have all the require mechanism in place that provide adequate and accurate data for such. However, their examples could be use as model to design a comprehensive format for chemical data collection that could be adopted for the entire country.

8.2 SOURCES OF NATIONAL DATA AND THEIR ACCESS AND FORMAT

Type of Data	Location(s)	Data Source	Who Has Access?	How to gain access*	Format
Production Statistics	NSB	Statistical Report Data	Public	On request NSB website	Electronic Hard copy
Import Statistics	Customs	Import Document	Government	At request	Electronic Hard copy
Export Statistics	Customs	Export Document	Government	At request	Electronic Hard copy
Chemical Use Statistics	Customs Importers	Import Document	Government	At request	Electronic Hard copy
Industrial Accident Reports	Health Employment	Accident Report Hospital Report	Restricted	At request possible by police or insurance	Electronic Hard copy
Transport Accident Records	Police; Health Insurance	Accident Report Hospital Report	Restricted	At request possible by police or insurance	Electronic Hard copy
Occupational Health Data (agricultural)	Health Agriculture	Statistical Report	Government	At request	Electronic Hard copy
Occupational Health Data (industrial)	Health Agriculture	Statistical Report	Government	At request	Electronic Hard copy
Poisoning Statistics	Health Police	Accident Report Hospital Report	Restricted	At request possible by police or insurance	Hard copy
Hazardous Waste Data	LWMA / DOE STAR	Report	Government	At request	Electronic Hard copy
Register of Pesticides	Health Custom	Report Import Permit	Government	At request	Electronic Hard copy
Register of Imports	Custom	Permit Document	Government	At request	Electronic Hard copy
Register of Producers	Licensing	License Document	Government	At request	Electronic Hard copy

Table 8-1: Sources of National Data, their Access and Format

* Data pertaining to industrial accidents reports, transport accident records and poisoning statistics are restricted to the general public

8.3 PROCEDURES FOR COLLECTING AND DISSEMINATING NATIONAL/LOCAL DATA

There is no formalized coordination between government agencies, importers, manufactures, NGOs, and custom when it comes to data collection. Henceforth as long as it remains as is, data retrieval and dissemination would remain difficult. For the most part, entities maintain their own documents and computer files specific to their own organization. However, there is no standardized system for document coding or library management within most individual organizations. In fact, the technical documents prepared by any technical institution are rarely disseminated to other institutions, except when requested from other relevant institutions. Except for certain types of data, as mentioned in table 8-1, there is little confidentiality, something which needs to be addressed.

Legally the data, which relate to chemicals management that is required to be provided, are the trade name of the chemical and that could be salvage at import permit division. Details should be in one of the national languages, date of manufacture, composition, labelling impact to the environment and health issues when applying for an import licence or permit for pesticide.

8.4 AVAILABILITY OF INTERNATIONAL LITERATURE AND DATABASES

Literature	Location(s)	Who Has Access?	How to Gain Access
Environmental Health Criteria Documents (WHO)	Internet DOE Library MOH Library	Unlimited At request MOH Staff	http://www.who.int/ipcs/publications/ehc/en/ Librarian
Health and Safety Guides (WHO)	Internet MOH Library	Unlimited MOH Staff	http://www.inchem.org/pages/hsg.html Librarian
International Chemical Safety Data Cards (IPCS/EC)	Internet	Unlimited	http://www.cdc.gov/niosh/ipcs/ipcscard.html
Decision Guidance Documents for PIC Chemicals (FAO/UNEP)	Internet	Unlimited	http://www.pic.int/home.php?type=s&id=30&sid=30
FAO/WHO Pesticides Safety Data Sheets	Internet	Unlimited	http://www.inchem.org/pages/pds.html
Documents from the FAO/WHO Joint Meeting on Pesticide Residues	Internet MOH Library	Unlimited MOH Staff	http://www.inchem.org/pages/jmpr.html Librarian
Material Safety Data Sheets (industry)	Internet Some industries	Unlimited Industry Staff	http://www.ilpi.com/msds/ Safety Officer
OECD Guidelines for the Testing of Chemicals	Internet MOH Library	Unlimited MOH Staff	http://titania.sourceoecd.org/vl=1421976/cl=16/nw=1/rpsv/periodical/p15_about.htm?jnlissn=1607310x Librarian
Good Laboratory Practice Principles	Internet MOH Library	Unlimited MOH staff	http://ec.europa.eu/enterprise/sectors/chemicals/documents/classification/laboratory-practice/index_en.htm
Good Manufacturing Practice Principles	Internet	Unlimited	http://ec.europa.eu/enterprise/pharmaceuticals/eudralex/vol4_en.htm

Table 8-2a: Availability of International Literature

Database	Location(s)	Who Has Access?	How to Gain Access
ILO CIS: International Labour Organization-International Occupational Safety and Health Information System	Internet	Unlimited	http://www.ilo.org/public/english/protection/safework/cis/products/cisinst.htm
CAS Database: Chemical Abstract Services Database	Internet	Unlimited	http://www.cas.org/expertise/cascontent/index.html
STN Database: Scientific and Technical Information Network, US Chemical Abstract Service	Internet	Unlimited	http://www.cas.org/support/stngen/dbss/
IPCS INTOX: International Programme on Chemical Safety-Poisoning Prevention and Management	Internet	Unlimited	http://www.who.int/ipcs/poisons/intox/en/index.html
IRPTC: International Register of Potentially Toxic Chemicals	Internet	Unlimited	http://www.chem.unep.ch/irptc/irptc/databank.html
GINC: Global Information Network on Chemicals	Internet	Unlimited	http://www.nihs.go.jp/GINC/index.html

Table 8-2b: Availability of International Databases

8.5 GOVERNMENT INFORMATION SYSTEMS AND INFORMATICS TECHNOLOGY CAPACITY AND THE EXCHANGE OF INFORMATION

All ministries, institutions and private sector, subsequently the staff concerned with different aspects of life cycle chemicals management have informatics capabilities. Each has their own method of keeping the data. However, these are not available on any website and it could be shared upon request.

The computer information systems in different ministries and other governmental institutions are compatible. Almost all administrative and technical staff has the ability to access e-mail and the internet even though at is slow at times.

The exchange of national information among various ministries and other institutions and other concerned parties mainly occurs via email, telephone or by formal letters.

8.6 ASSESSMENT AND COMMENTS

The country has no chemical database, except for data on chemicals imported that passes through custom, henceforth it would not be possible to comment on gaps in the literature and infrastructure to host the national chemicals management. This exercise is likened to survey to identify what is available in term of chemical life cycle here in Seychelles. The paucity of information in itself should that there is a need for capacity building in every aspect of the same. Hence, capacity building for chemicals information management and technology is considered a top priority for access to the national and the international database in a broadly open policy.

It is expected that through the SAICM QSPTF project, the bringing together of data related to chemicals at various stages of their life cycles through a centralized system would be initiated. This will be in the form of a new chemicals management log that would be managed by the newly-set up chemicals board (or a possible upgrade of the Seychelles Pesticides Board). The new system will look to ensure the collection of information on chemicals from importation through to disposal. The data shall also record chemicals incident that have occurred nationally.

It is anticipated that the board will bring together a number of stakeholders and non-state actors that deal directly with chemicals in order to facilitate exchange programs and the transmission of information from the state actors to the non-state actors and vice-versa.

The law of Seychelles clearly indicates the right for the Seychelles population to get access to genuine and accurate information. Article 28 of the Constitution of Seychelles states that “The State recognises the right of access by the Public to information...” This clearly includes chemicals-related information such as the number entering the country and the usage among others.

CHAPTER 9: TECHNICAL INFRASTRUCTURE

9.1 OVERVIEW OF LABORATORY CAPACITY

The following Organizations and institutions have Laboratories available on their premises:-

- Indian Ocean Tuna (IOT)
- Public Utilities Corporation (PUC)
- Seychelles Breweries Ltd. (SeyBREW)
- Ministry of Health (MoH)
- Seychelles Bureau of Standard (SBS)
- Seychelles Agricultural Agency (SAA)
- Private Clinics and Health Facilities
- Seychelles Petroleum Company (SEPEC)
- Ministry of Education

Name/ Description of Laboratory	Location	Equipment/ Analytical Capabilities Available	Accreditation (If yes, by whom?)	Certified GLP [1] (yes/no)	Purpose
SBS	Providence	Proficiency testing	Has been assessed and recommended to be accredited following ISO 9001 2000 series ISO 17025	In house GLP	Proficiency testing and quality control assurance of products

Table 9-1: Overview of Laboratory Infrastructure for Regulatory Chemical Analysis

9.1.1 Overview of Laboratory Infrastructure for Monitoring and Analysis

Only SBS is mandated nationally to carry out Proficiency testing and quality control assurance on all products, therefore in its line of work covers certain chemicals.
The other laboratories use chemicals as reagents to carry out their tests. See table 9-2.

Name/ Description of Laboratory	Location	Equipment/ Analytical Capabilities Available	Accreditation (If yes, by whom?)	Certified GLP [1] (yes/no)	Main Purpose, and the chemical substances analysed	Number of samples/ month (state which substance)
Public Utilities Corporation	New Port	Analysis for normal work	Not accredited but following ISO for different methods 17025	Not certified but follow the protocols and procedures	Analytical work pertaining to provision of Utilities	Information not available
Seychelles Breweries Limited	Le Rocher	Use of chemicals to make analysis use of adulatory chemicals Equipment specific to trade (brewing and packaging)	Not accreditation use the testing guidelines of Coca Cola, Eku , Guinness etc Food Standard – HACCP ISO 9001 certified	In house GLP not certified	Quality control assurance of products	Information not available
Indian Ocean Tuna Company	Old Port	Test products	Accredited and follow different international protocols ISO 9000,14001 2004 SERIES, OHSAS 18001 2007 SERIES	In house GLP	Quality control assurance of products	Information not available
Ministry Of Health	Mont Fleuri	Analysis for medical purposes	Clinical laboratory not Accredited Public Health Laboratory accredited	In house GLP	Human analysis	Information not available
Seychelles Agricultural Agency	Grand Anse Mahe	Basic soil and water analysis only.	Not accredited but using local standards and following ISO series	None	Analytical work pertaining to the Agriculture needs of the farmers they serve	

Table 9-2: Overview of Laboratory Infrastructure for monitoring and Analysis

9.2 ASSESSMENT AND COMMENTS

During the assessment to find out whether the laboratories utilize internationally-recognized protocols, such as the OECD Test Guidelines or those of ISO or professional bodies, it was noted that all of the organisations follow some part of the ISO series as they use the MSDS protocols.

The laboratories have no formal quality assurance systems they only have informal internal programmes only.

No national programmes to improve the quality and quantity of the output from relevant laboratories exist although most of the laboratories affirmed to be working towards being nationally and internationally certified and accredited. The only accredited laboratory we found was the Public Health Laboratory of the Ministry Of Health.

The main problems and hindrances experienced in providing laboratory services in the country are:

The organisations that have international links such as IOT and SeyBREW have all their needs in regards to equipment, staff and reagents and trainings and finance met to ensure operations. The Ministry of Health is covered financially by the Government through its budget.

SBS however affirms that their laboratory needs are very high, they handle a lot of products and there are various chemical tests that they can carry out as their staff have the knowledge but have no equipment or reagents to do so. At the same time there are a lot of test in demands that they have no equipment, reagent and staff also requires knowledge.

There is a main issue of disposal of expired products. There is no organisation available to handle the disposal of expired chemicals properly.

There is a lot of mis-handling and thus breakage of laboratory equipments. With a lack of spare parts available, these equipments are mostly laid to waste.

In terms of programmes for co-operation with other countries among the laboratories visited it is concluded that those with international partners such as SEYBREW and IOT are supported by their international cohorts and share certain results on a formal bilateral basis. Other laboratories such as SBS formally participate in proficiency testing on a regional level and have agreement with United Kingdom and African countries.

Certain laboratories have formal international agreements with countries to share test results and also to have certain test done that cannot be done locally such as MoH who has an agreement with South Africa to have certain test done. Other laboratories however, whose test results are only locally required such as PUC and SAA, they do not share results and as these laboratories are specific and limited to their areas of expertise, they do not share their facilities. The formal international agreements are very common within the laboratory of SBS and MoH. The MoH is especially prominent in this endeavour as many chemicals and reagents are not available locally for testing of samples.

There are still areas of chemical analysis in the country were external laboratory support for specific activities is needed, especially in cases where the analytical capacity does not exist in the country. Of the

laboratories assessed, some have agreement to have certain analysis done in other countries although that is on a more institutional agreement between specific organisation and not for the whole country.

Although all of the organisations consider that their laboratory is sufficient for their organizations needs they are serving only their organisations or their mandated field only. The SBS and MoH who serve the country both feel that they have sufficient laboratories to cover the countries needs although the laboratories lack in certain capabilities and equipments.

Organisation	Number of laboratories
Indian Ocean Tuna	01
Public Utilities Corporation	01
Seychelles Breweries	01
Ministry of Health	02
Seychelles Bureau of Standard	01
Seychelles Agricultural Agency	01
Ministry of Education (schools)	20+

Table 9-3: Number of labs within various organizations

9.3 OVERALL ASSESSMENT AND COMMENT ON TECHNICAL INFRASTRUCTURE FOR SOUND MANAGEMENT OF CHEMICALS AND RELATED WASTES

The mains strengths and weaknesses of the current technical infrastructure for chemicals management are as follows:-

Strengths

- Most labs are using small amount of chemicals in their tests and are storing their bulk elsewhere. In most cases their bulk are kept to a minimum thus reducing incidents eventualities.
- Most of the labs are using Good Lab Practices (GLP's) and following international protocols.
- The labs are undertaking their operations in safety and providing PPE relevant to the needs of their workers. Spill kits are available in the labs and their staff are being trained and monitored on a health perspective to ensure their protection.

Weaknesses

- There is the pertinent issue of disposal of expired chemicals from the labs. There are no set institutions dealing with the disposal of chemical wastes.
- The labs although following certain international protocols have not been accredited or certified.

- No national programmes exist to improve the quality and quantity of output from the relevant laboratories.

-

The deficits in the current infrastructure can be bridged up by improved cooperation between the laboratories. This can involve the drafting of a national programme to improve the quality and quantity of the output from the relevant laboratories which can lead to them being assessed and certified or accredited for the use of the relevant protocols and thus be internationally recognised.

CHAPTER 10: CHEMICAL EMERGENCY PREPAREDNESS, RESPONSE AND FOLLOW-UP

10.1 CHEMICAL EMERGENCY PLANNING

Nationally chemical incidents are managed jointly by the DoE and the Division of Risk and Disaster Management (DRDM) and are handled by the emergency services such as Seychelles Fire and Rescue Services Agency and the Landscape and Waste Management Agency (LWMA). This depends on certain factors; namely:-

- *Where the emergency call is recorded and*
- *What type of incident*
- *What is involved*
- *What kind of response is required*
- *The location*

The country in general does not have a chemical emergency plan. In the overall National Disaster Management Plan there is no mention of a chemical emergency incident. As shown in table 10-1, the following organisations are using their own existing crisis or preparedness response plan to cater for a chemical emergency:-

ORGANISATION	PLAN IN USE
Ministry of Health	Evacuation Plan
Indian Ocean Tuna limited	Ammonia Leakage plan
Seychelles Petroleum Company	Emergency response plan
Public Utilities Corporation	No plan in place
STAR Seychelles	No plan in place
Seychelles Agricultural Agency	No plan in place
Seychelles Bureau of Standard	Safety manual and their procedure on how to handle chemical
SeyBREW	Covered in their crisis plan

Table 10-1: Chemical emergency response plans per organisation

The following two emergency services have in place response plans to cater for chemical emergencies as follows:

ORGANISATION	PLAN IN USE
Seychelles Fire and Rescue Services Agency	HAZMAT incidents response covered in its emergency Preparedness and Response Plan
SCAA Airport Fire and Rescue Services	In their Safety Regulations they have a unit that is responsible for HAZMAT and the fire services liaise with them on procedures during their response. The unit is governed on international laws and are specialists in HAZMAT response.

Table 10-2: Chemical emergency response plans per emergency service

However certain agencies have expressed the need to prepare a specific response plan for chemical emergencies, some such as IOT and SEYPEC have put it in their short term projects to draft such a specific plan.

As previously stated, no national chemical plan exists but however certain authorities have, in the course of their mandated duty, had to deal with situations of chemical spillages.

Their responsibilities to such occurrences are provided in table 10-3are as follows:

Organisation	***Responsibilities***
Division of Risk and Disaster Management	Coordination and communication
Seychelles Fire and rescue Services	General response which may include Rescue, containment and investigation
Ministry of Health **Seychelles Red Cross**	Treatment of victims
Ministry of Environment	Analysis, investigation and disposal, import permits
Police Department	Evacuation and securing scene
SCAA Airport Fire and Rescue Services	General safety and response on their mandated territory i.e., the international and national Airports

Table 10-3a: Responsibilities of key organisations in the case of a chemical spillage emergency

The need to develop a chemical response plan is evident and the stakeholders mentioned in the previous table are the key agencies that should be involved in the development and implementation of such a plan.
Other agencies that should be involved in the development and implementation of the plan are as follows:

Organisation	*Proposed Responsibilities*
Media Services	Information dissemination
Meteorological services	Weather monitoring
Land Transport Agency	Transport issues relating to chemical
Custom services	Border control
SPDF	Security and disarmament

Table 10-3b: Roles of other organisations in chemical response plan

The initial phase of the plan should take into account the perennial of new sources of incidents in the industrial, transport, domestic or public health sectors. This can be controlled with import permits, licensing, stocking inventories etc.

The plans used by the various organisations to cater for a chemical emergency are tested as follows:

ORGANISATION	PLAN IN USE	TIME FRAME TESTED	LAST TEST
Ministry of Health	Evacuation Plan	Annually	--
Indian Ocean Tuna limited	Ammonia Leakage plan	Annually	Year 2009
Seychelles Petroleum Company	Emergency response plan	Annually	--
Public Utilities Corporation	No plan in place	--	--
STAR Seychelles	No plan in place	--	--
Seychelles Agricultural Agency	No plan in place	--	--
Seychelles Bureau Standard	Safety manual and their procedure on how to handle chemical	Annually	--
SeyBREW	Covered in their crisis plan	Annually	Year 2009

Table 10-4a: Frequency of testing of chemical emergency plans by key stakeholders

ORGANISATION	PLAN IN USE	TIME FRAME TESTED	LAST TEST
Seychelles Fire and Rescue Services Agency	Emergency Preparedness and Response Plan	regularly in training and review it through debriefing based on experienced gained in specific emergencies attended	Year 2010
SCAA Airport Fire and Rescue Services	Safety Regulation HAZMAT response Procedures	Annually	Year 2008

Table 10-4b: Frequency of testing of chemical emergency plans by emergency responders

10.1.1 MECHANISMS FOR MEDIA INVOLVEMENT TO INFORM THE PUBLIC IN AN EMERGENCY

There are no specific formal mechanisms in place for media involvement to inform the public in the event of a chemical emergency. But mechanism for media involvement in other national contingency plans for other disasters and emergency are already in place such as the media representation on the National Disaster Committee and will be privy to information and is active in the early warning of the public through announcements and colour code broadcasting.

In such event, most organisations inform the media through their proper channels or have a dedicated group that liaises with the media. Certain organisations have no involvement with the media whatsoever and others depend on intermediation of the DRDM for public announcement of any emergency involving chemicals or any other nature.

10.1.2 INVENTORIES OF INSTALLATIONS AND TRANSPORT ROUTES AT RISK OF CHEMICAL INCIDENTS

In Seychelles, internal inventory is made by most of the organisations of the chemical available on their premises although not all of them have the information readily available.

The transport routes are not an issue as the country is small and alternative routes are quite limited; however the issue is mainly transportation of the chemical itself and safety involved in the transportation. The following issues should be taken into consideration in regards to transportation of chemicals:

- Specific time for transportation
- The type of chemicals in regards to the type of vehicle they are being moved in
- General safety in prevention of spills and accident during transportation

Seychelles Fire and Rescue Services Agency and SCAA Airport Fire and Rescue Services are the only emergency services that have specific equipment, including protective clothing, to deal with chemical incidents and their staff are specifically trained for such incidents. However the response capacity needs to be increased by updating of plan and increasing availability of equipment.

The GHS (Globally Harmonised System for the Classification and Labelling of Chemicals) is applied to a small extent in the country. Most key stakeholders have and make use of the Material Safety Data Sheet (MSDS). Some have MSDS available on site and use the hazard signage at their stores.

ORGANISATION	CHEMICAL HAZARD IDENTIFICATION SYSTEMS IN PLACE
Ministry of Health	All chemicals are received with their MSDS and based on that they inform their staff of the prescribed precautions to be taken.
Indian Ocean Tuna limited	MSDS available on site, to take to the doctor and in the office of the Health and Safety Officer. All chemical storage is indentified and hazard signage posted and MSDS available.
Seychelles Petroleum Company	All chemicals are received with their MSDS and based on that they inform their staff of the prescribed precautions to be taken.
Public Utilities Corporation	MSDS available on site hazard signage at laboratory
STAR Seychelles	No signage available at the chemical store.
Seychelles Agricultural Agency	MSDS available on site hazard signage at stores
Seychelles Bureau Standard	MSDS available on site
SeyBREW	All chemicals are accompanied by their certification and MSDS.
Seychelles Fire and Rescue Services Agency	Uses both Emergency Response Guidebook (ERG) and MSDS
SCAA Airport Fire and Rescue Services	Uses both Emergency Response Guidebook (ERG) and MSDS

Table 10-5: Existing chemical hazards identification system per institution

No specific poison or chemical information service is available around the clock to provide advice and assistance +in a chemical emergency. The Seychelles Fire and Rescue Services has established contact with certain individuals who are expert in their fields and the SCCA Airport Fires and Rescue Services has the service of its unit of experts on a 24-hour basis. There is no dedicated emergency communications system but ideally it should be the DRDM communication system that would be mandated as coordinator for such incidents depending on the scale of the event.

The local hospitals have stocks of antidotes and medicines but no proper patient decontamination facilities and appropriate equipment for chemical emergencies.

The health services are not equipped for transportation of chemically exposed persons, however they can transport the once decontaminated victim in ambulances; which is considered not appropriate at all.

Of the emergency services, only the SCCA Airport Fire and Rescue Services has the facility to transport chemically exposed victims as they have an ambulance equipped to deal with HAZMAT patient and two first aid trailers for such incident which are fully equipped.

10.1.3 FACILITIES AVAILABLE FOR INCIDENT CLEAN-UP AND FOR LONG TERM FOLLOW-UP OF EXPOSED PERSONS

Most of the organisations have a policy in place for the surveillance of their workers working with chemicals and the health programmes to ensure their safety and recuperation after an incident; although these are in-house policies. The Fire and Rescue Services are usually the main organisation involved in chemicals incident clean-up activities. Other organizations however, do get involved to a lesser extent, such as the Seychelles Land Transport Agency (SLTA) if the incident is within public road accesses and Seychelles Port Authority (SPA) for marine pollution issues. The Ministry of Health (MoH) is the only institution that deals with long-term follow-up of exposed victims of chemical incidents.

Training available to prepare the emergency services personnel in dealing with a chemical incident are as follows:

- SCCA Airport Fire and Rescue Services ongoing certified internationally HAZMAT in UK, Singapore and Malaysia. All officers are certified as instructors.
- Seychelles Fire and Rescue Services ongoing internationally certified in Malaysia and South Africa. All personnel are trained in HAZMAT response.

  Training available to prepare medical and paramedical staff in handling and treating chemically exposed persons is available to the staff of the MoH.

No specific training for veterinarians concerning treatment of exposed animals to toxic substances is available or is being undertaken by the Vet Services. There is also a lack of equipments for such treatments.

10.2 CHEMICAL INCIDENT RESPONSE

Listed in Table 10-6 are some of the more significant chemical-related incidents that have occurred recently in the country with their respective outcomes.

Based on the statistics of table 10-6 and from previous chapters, there is a clear message that can be deducted in relation to chemicals disaster preparedness and risk management. It is clear that there is a distinct lack of expertise and know-how within the Seychelles public sector when it comes to responding during a chemicals-related incident of major significance. Whereas the DRDM is the leading governmental body that deals with the Coordination and mobilization of various key stakeholders in such incident, it is suffice to say that the coordination is relatively sound. However, the weak link lies in the fact that there are no or very limited expertise nationally to deal with chemicals incidents, which includes safety procedures during disasters, clean-up operation as well as informing the public on the nature and seriousness of the incident.

As an example to this, the 2010 incident of leakage of the unknown gas, as provided in table 10-6 is highlighted. The promptness of the various stakeholders to access the site and secure the area was commended and credit goes to DRDM again for their good coordination. However, it was an issue of concern to see the officers of the various groups being mobilized accessing the area with little or no protective measures (such as breathing apparatus, high-visibility clothing, gloves etc.), except for the usual uniform worn by the Fire and Rescue Services Agency. Should the offending gas be toxic or corrosive in nature, the officers themselves would have been in danger.

This shows a clear lack of knowledge on the characteristics of chemicals across the board when it comes to the dealing with emergency cases. The implementation of the SA in Seychelles through the SAICM QSPTF shall serve as a starting point to ensure better expertise in chemicals management in this field. This proposal is in line with the 2002 WSSD goal of minimizing the risks of chemicals' adverse effects on human health by 2020.

location	Date of incident	Type of Incident	Chemical(s) involved	D: Number of Deaths	I: Number of Injuries	E: Number evacuated	Environmental Contamination or damage
Indian Ocean Tuna limited	13/09/10	Leakage	Ammonia	-	-	-	No damages; certain staff slightly exposed
Seychelles Bureau of Standards	20 years ago	Fire incident	Volatile solvent	-	-	-	No damages mitigated internally
SeyBREW	2010	Leakage	Ammonia	-	-	-	No damage; certain persons in the vicinity affected by vapour
SCAA Airport Fire and Rescue Services	8 years ago	Spillage	Paint	-	-	-	No damages
Le Titan Concarneau - Tuna Vessel	2009	leakage	*Ammonia*	06	01		
Baie Ste Anne, Praslin	2010	Leakage	*2 incidents of leakage of unknown gas*	-	-	50	

Table 10-6: Examples of Chemical Incidents in the Country

10.3 CHEMICAL INCIDENT FOLLOW-UP AND EVALUATION

10.3.1 There are internal formal mechanisms in place to investigate a chemical incident and its outcomes among the agencies nationally. Most of the agencies will have an investigation done and may even call in outside help to have the incident properly investigated. Furthermore the affected parties, Government agencies and emergency responders will meet for debriefing after each incident. Certain organisations have there own standardised format for collecting the information about the incident which include investigative inspection, gathering of information and eyewitness interviews and source identification. However in joint operations there is no standardised format for collecting the information about any chemical-related incident.

10.3.2 Most of incidents that have occurred in this country have been investigated and has lead to formal enquiries about the causes and responsibilities of various parties involved. These enquiries are usually done in house if they involved only the organisation and on a joint basis if they involved more than one organisation. Most of the investigations that have been done in organisations have lead to follow-up activities as each investigation will produce a report with corrective actions to be undertaken, such as the examples below:

i. After the ammonia leakage at IOT, a foreign expert was brought in and assessed the whole plant and made recommendations for required improvements and what preventive measures should be taken.

ii. After the ammonia leakage at SeyBREW, inspection was done by the Health and Safety officer and an expert from Europe was called in for further investigation of the incident which produced an action plan and report on the matter.

10.3.3 There is no national register available for chemical (and other) incidents as most organisations keep records of all the chemical incidents that occurs on their premises and emergency services such as Seychelles Fire and rescue services Agency keeps a record of all emergency it has attended to as part of its SOP.

10.3.4 Follow-up surveillance and rehabilitation mechanism in the health service for exposed persons who may suffer long term effects are done in house by certain organisations; through checkups, monitoring and treatment. Some organisations are also willing to send their staff for overseas treatment at their own expenses if they find it necessary. However, the MoH being the leading institution in the rehabilitation mechanism is usually the institution that sends patients overseas for further treatment.

10.3.5 Owing to the small population of Seychelles, the amount of chemicals used at any one time is relatively small. As a result, chemicals incident on land seldom include a large amount of chemicals. As a result, cleaning up after an incident is promptly carried out by both the Seychelles Fire and Rescue Services Agency or on small scales, the organization themselves**.**

However, in the past decade or so, Seychelles have invested in and are using oil tankers for the transportation of fuel from one port to another, in the form of a business. At present there are 5 oil tankers in full operation and a 6th one is being constructed. The tankers are all double-hulled to

minimize the risk of a disaster through spillage, and are also equipped with the latest safety equipments in case of an emergency. However, the business of oil transportation at sea has too many times proven to be very risky. For that reason, Seychelles through the Seychelles Maritime Safety Administration (SMSA) has been set up and are equipped with adequate means to tackle issues of oil spills at sea. The setting of of SMSA follows the ratification of MARPOL (the international convention for prevention of pollution by ships) by Seychelles, although Seychelles has not yet ratified all the annexes of MARPOL. Seeing the gravity of an oil spill and its potential damages to the Seychelles fragile marine environment, the Seychelles government has gone to great lengths to invest in the formation of a sound system to tackle this issue. SMSA is in very close liaison with DRDM and there are the occasional drills that are carried out. Of course, the lack of funds means that the government can only achieve certain limits in terms of acquisition of equipments and training of staff.

10.4 NATIONAL CAPACITY ASSESSMENT IN RELATION TO CHEMICAL EMERGENCIES

The needs in relation to chemical emergency response are very high in Seychelles. Seychelles is a country whose industry is growing very quickly in vastly different areas. As such, more and more chemicals are entering the country. Though most are controlled via import permits, certain banned chemicals were still being imported in the country albeit in small amounts. Likewise, there also certain imports of chemicals that are going under the radar and thus not being properly controlled.

Moreover, the main issue is the lack of a proper register, databases and information management systems that will identify and keep proper records of chemicals from the time they enter the country to the base user and through to their disposal. This means that there are gaps in the tracing of chemicals on the basis of the type of chemicals, their locations, storage facilities and disposal method among others. It is felt that this basic information should be readily available especially to the emergency services and to the local authorities.

The existing disaster preparedness and management infrastructure is lacking in expertise in the field of chemical emergencies. There is a lack of proper equipment, training, and most importantly a coordinating mechanisms since a chemical emergency cannot be dealt with like any other naturally-occurring disasters. Furthermore the country's health service capacity for response still needs improvements as the health services require more trained personnel and more specialised equipment for that specific type of emergency incident.

The country however has a good environmental services clean-up capacity which can be further boosted by more equipment and training to their personnel. The country's two fire services have well-trained personnel in chemical emergency although this could further be improved with more training, more specialised equipment and the setting up officially of a HAZMAT response team that could cater to the specific emergency. This team should be based at a 24-hour emergency service and have all equipment and expertise to handle any chemical emergencies.

CHAPTER 11: AWARENESS / UNDERSTANDING OF WORKERS AND THE PUBLIC; TRAINING AND EDUCATION OF TARGET GROUPS AND PROFESSIONALS

11.1 AWARENESS AND UNDERSTANDING OF CHEMICAL SAFETY ISSUES

In many countries including Seychelles, there is still a poor appreciation of the issues concerning chemical safety and how exposure to toxic chemicals and waste may give rise to serious health impairments and degradation of the environment, which further impacts on human wellbeing and economic development.

The level of awareness of the country remains an issue at all stages. The main reason for this is that the message is not getting through to the decision and policy makers. This in turn is attributed to the fact that chemicals management is far too fragmented in the country, with each stakeholder dealing with only a small portion chemicals management. As stated, it is understandable that chemicals management is a multi-stakeholder affair. However, the point remains that a central coordinating body would make all the difference if this body gets the mandate of dealing with chemicals at all stages of their life cycle. The message would then be concentrated and would get to the decision-makers without distortion and subsequently the media and educators/communicators. The end product would be a sensitized public and better management of risks at domestic levels.

This section describes the activities being undertaken to:

- Provide information to workers to protect their health and safety from the risks of chemicals exposure;
- Provide information to the public concerning the risks to the environment, health and safety from chemicals, and actions which should be taken in order to protect themselves from chronic or acute exposure to hazardous chemicals in everyday life, as well as at the time of a chemical emergency;
- Raise the awareness of decision-makers and legislators concerning chemical safety and encourage them to take timely action to implement sound management measures;
- Improve the understanding of communicators and the media concerning chemical safety issues and encourage them to better communicate these issues to the public in order to improve understanding and promote chemical safety actions by the public and civil society in general.

Workplace	Category of workers	Types of chemicals workers are exposed to	Health and safety information provided
IOT	Sanitation workers.	Factory cleaning chemicals especially HD foam.	They are provided with the correct and appropriate PPE.
Seychelles Port Authority	All port users in general.	Various types of imported chemicals. In containers off loaded form ships.	No safety procedures available to prevent accidents. No appropriate place to put the containers.

Fire Brigade	Staff of the Operation section.	Hazardous chemicals leakage.	
MoH	Workers of the Cleaning Materials Store.		
SEPEC	• Workers involved in bunkering of aircrafts, ships, doping and dipping fuel storage tanks, entry into storage tanks for inspection and cleaning. • Waste disposal agents.	• Hydrocarbon fuels. • Hydrocarbon fuel vapors from sludge.	Operational control procedure.
MEEHR	• Student teachers and Science teachers. • Science laboratory technicians. • Agriculture students and teachers. • Technology and Enterprise students and teachers.	• Chemicals used for science experiments in the science laboratories. • Pesticides and fertilizers. • Paint and spray cans.	• Handling, disposal, health and safety and general management of chemicals.
Hotels (Coral Strand)	• Kitchen staff. • Chlorine store managers.	• Chlorine. • Chemicals used for cleaning and sanitation.	• Proper handling of chemicals, sanitation and cleaning.
SBS	• Analysts working on Biochemical Testing Services (BTS). • Manager responsible to verify chemicals, store and disposal of chemicals. • Purchasing officer. • Secretary responsible to clean the refrigerators and freezers • Cleaners responsible to clean the laboratories.	• There are four laboratories in the BTS where chemicals are used. These are: Environment Laboratory, Chemical Analyst Laboratory, Microbiology Laboratory and Food Chemistry Laboratory.	

Table 11-1: Information provided to workers to protect their health and safety from the risks of chemicals.

Work place	Mechanisms used
IOT	• Training for specific chemicals used by specific workers is available. • MSDS is available on all chemicals. These can be found where the chemicals are stored and used.
Seychelles Port Authority	• Not much, except for the labels on the containers which state that the containers contain dangerous chemicals • Stevedores and cargo handling workers are not aware of the dangers they are exposed to.
Fire Brigade	• Training in awareness of Hazmat. • Shift Training. • Training with various industries and familiarization visits.

MoH	• Workers and consumers are encouraged to read labels on the gallons & containers of chemicals before use. • Advices on how to handle, mix, apply and use chemicals. • Inform workers on the need for protective clothing. • First in taught or preached to all workers.
SEPEC	• Material Safety Data Sheets. • Safety awareness training. • Conducting risk appetite. • Issuing of permit to work. • Affix safety signage.
SAA	• Mass media campaign. • Pesticide Board Training Programme. • Sharing information through networking and the national show.
MEEHR	• Training of students of the School of Education, SAHTC, and SIT, SALS, teachers and laboratory technicians. • Science laboratory technicians, Technology and agriculture students and staff are provided with protective clothing and safety gears. • Briefing of new students and staff at the Seychelles Institute of Technology (SIT). • Leaflet for new students and staff at SIT. • Certificate of competency for students and all persons requesting for pesticide applications in their institutions (SAHTC in partnership with Pesticides Board). • Labels on chemical bottles and notices chemical stores. • Authorization for access to chemicals and entry in chemical stores and prep-rooms.
Hotels (Coral Strand)	• Training of sanitation and kitchen staff members. • Notice on chemical stores. • Staff directly involved is provided with protective clothing and safety gears. • Authorization for access to chemicals and entry in chemical stores.
SBS	• Safety code and procedure for “receipt, storage and handling of chemicals”. • All employers handling chemicals are taken through the procedure for “receipt, storage and handling of chemicals” during their probation period. • Books on hazardous chemicals and health risks. • Material data sheets are available for chemicals. • Experienced persons handle chemical emergencies. • All employees are aware that waste chemicals are stored in a waste chemicals store. • Entry to laboratories, chemical stores and waste chemical store is restricted. Only authorized staff is allowed entry. • Laboratory staff is provided with protective gears.

Table 11-2: Mechanisms in the workplace to inform workers about chemicals exposure and risks

Workplace	Activities done
IOT	• A Crisis Management manual exists. • Immediate neighbors are contacted in cases of chemicals incidents. • Incidents are reported to the emergency services immediately.
Fire Brigade	• No programmes for the public for the time being.
MOH	• During exhibitions some information is passed about prevention, safety, types of chemicals, safe use, containers of such chemicals and protective clothing.
SEYPEC	• Access with MSDS & other info .for interested parties. • Emergency Action procedure is communicated to neighbours & stakeholders.
MEEHR	• Notice on chemical stores and Science laboratories. • Members of the public, farmers and owners of buildings, etc. are not allowed to apply pesticides unless they have completed formal training on Pesticides Handling and Application at SAHTC.
Hotels (Coral Strand)	• Notice on chemical stores.
SBS	• Visitors and assessors are accompanied by SBS personnel at all times. • Visitors and assessors are advised to use protective gears when necessary.

Table 11-3: Activities to provide the public and related organizations with information on hazardous chemicals generated by the organization

Work place	Modes of communication	Type of information communicated	Target group
IOT	• Use of signage • During induction	• Indicate hazardous chemicals. • Informed that only trained personnel are allowed to handle hazardous chemicals.	• General workforce
MoH	• Use of the internet (emails) and websites	• Safe handling of chemicals. • Changes in modes of handling of chemicals. • New chemicals, storage, use and safe handling.	• Staff and general public
SEPEC	• Fire alarm • Media & national magazines • Verbal communication to would-be users	• Evacuation plans. • Advice on how to control or avoid using hazardous chemicals with possible health impacts.	• Workers and the public • Would be users
MEEHR	• Medical check-up requirements-done yearly	• Health status and potential risks and health hazards.	• All workers of SAHTC and school Science laboratory technicians
SBS	• Books on Chemical Safety	• General information. • Temperature control.	• Employees • Laboratory workers

	• Read information on labels of chemicals before opening containers • Abide to procedures for safe storage of chemicals. • Compliance to procedures is checked during internal audits. • Materials Safety data Sheets from suppliers. • Inventory data base for chemicals are updated on a regular basis.	• Corrective actions are taken for issues raised and these are recorded and communicated to staff concerned, and effectiveness checked during internal audits. • Information on data sheets are read and filed. • Updated data base inventory on types of chemicals, available and quantities in stock.	

Table 11-4: Other modes of communication to increase awareness of both workers and the public on chemicals safety

Workplace	Suggested improvements in communication
Port Authority	Make everyone aware from top to bottom about the dangers that they are exposed to.
Fire Brigade	Use of MSDS and ERG.
SEPEC	Media and responsible authority should provide as much information.
MoH	Media should improve awareness.
MEEHR	• Promote awareness on safe use of household chemicals and aerosol sprays. • Encourage use of safety gears such as gloves when using laundry products such as bleach.
SBS	• Training on chemical safety, hazardous chemicals, storage, transport and handling of chemicals to better understand the issues of chemicals safety. • Articles on newspapers/magazines regarding chemical safety to help sensitize the public.

Table 11-5: How to improve communication and role of the media

11.2 EDUCATION AND TRAINING FOR SOUND MANAGEMENT OF CHEMICALS AND WASTE

Many target groups may be at particular risk concerning exposure to toxic chemicals and related waste where improved education may help reduce such exposures. Among the many examples are: education of parents, especially mothers, in reducing the risk of children in their care to toxic chemicals; the training of agricultural workers in safe application procedures for pesticides and the wearing of protective clothing

against exposures (such as boots against snake bites in the tropics during planting and harvest); education of workers in cottage industries to reduce exposures to chemicals and waste and use environmentally sound disposal/recycling of waste.

Education needs to start in primary and secondary education, and continue into a variety of courses at higher education levels. Technical and administrative staff concerned with specific aspects of sound management of chemicals and waste need to be provided with the necessary skills and on the job training promoted. This section describes, in general terms, any training and education programmes aimed at providing the technical expertise required to implement government policies and programmes related to chemicals management. This should include programmes related to disciplines such as chemistry, toxicology, environmental sciences, and environmental engineering. In this regard, consideration has been given to training and education programmes at technical schools and at university level, as well as specific programmes available to government employees. This section describes the activities being undertaken to:

- Develop chemical safety education in school and university curricular
- Promote the necessary skills for administrators concerned with risk assessment and regulation in the use of available data and evidence base approaches
- Promote skills training for a range of professional workers concerned with aspects of sound management of chemicals, from customs workers to those handling and transporting chemicals to the users of chemicals, such as agricultural and industrial workers, and those in SMEs
- Promote the training of health and other professionals in diagnosis and management of exposed persons
- Promote the training of chemical emergency response professionals
- Promote the training of staff at technical facilities, such as laboratories, recycling and disposal facilities

Work Place	Training Available	Category of workers
IOT	• Training on chemical spill and how to handle the spillages. • Emergency preparedness plan.	• Health and safety workers • Security staff
Port Authority	• Two staff members presently being trained on Health and Safety. These persons will also deal with chemical matters.	
Fire Brigade	• Following basic awareness of chemical safety. • Courses in South Africa-Hazmat Awareness and Operational. • Courses in Singapore-Hazmat Course / Singapore Cooperation programme.	

SEYPEC	• Local training on chemicals safety. • Supplier and contractor train workers when little or no local knowledge is available. • During induction briefing on chemicals and their side effects. • Access to MSDS. • Training of workers in specific fields.	• All staff • New recruits • Drivers transporting flammables • Petroleum outlet operators and attendants
MEEHR	• Safety in Science, The Arts and Technology and Enterprise. • A section on Chemicals Management, Disposal and Safety as part of the Seychelles Laboratory Technicians (SLT) Training programme. • Certificate of Competency in Pesticides Handling and Application (SAHTC in partnership with Pesticides board).	• All students and teachers as part of the teacher training Diploma Course • All Science laboratory working in Education institutions in the country • SAHTC students and staff and members of the public applying pesticides
Hotels (Coral Strand)	• Staff trained by Co-coordinator Sanitation (Sri Lanka). • New staff to be trained by a Hygiene coordinator early this year. • Eco-lab also involved in staff training. • No specific training for the chlorine store staff. Personnel come with their own previous knowledge.	• Sanitation and kitchen staff

SBS	• No specific training is given to employees.
	• To upgrade knowledge the following are in place:
	  ○ Safety Code of SBS
	  ○ Books
	  ○ Material Data Sheets
	  ○ Procedures and labels on the chemical bottles	

Table 11-6: Training available on Chemicals Safety

11.3 ASSESSMENT AND COMMENTS

This section provides an opportunity to make an assessment of the country's capacity in relation to public and workers awareness concerning chemical safety issues and to human resource development for sound life cycle management of chemicals in the country. Availability of trained human resources both within government and civil society is a key factor in sound management of chemicals. The table below gives an idea of the capacity of various organizations where awareness, training and education are concerned with regards to chemicals management.

Work place	Comments
IOT	No capacity assessments done at the moment.
Port Authority	• Not a lot is being done to raise awareness of port users. • There is a need for a policy. • Need to change the attitude of port users • People need to know that they have to protect themselves at all times.
Fire Brigade	• Trained instructors, officers and operation personnel are available. • Not satisfied with level of awareness of all staff. • Limited professional staff to train the personnel. • At times there is a lack of interest of certain members of staff to learn more.
SEYPEC	• Workers are trained by their respective sections / department. • Operational control is exercised for both awareness and compliance. • Need to get data and specific expertise from abroad for training. • Emphasis on compliance and monitoring to combat negligence.
MEEHR	• There should be a law for business importers to also import protective equipment such as gloves, respirators and boots) for chemicals ordered. • Importers should have a contract with exporters for the return and disposal of empty containers of pesticides. • There is a serious lack of information of the lay person on safe use of chemicals. People's lives are highly at risk.
SBS	• Workers are aware of issues concerning chemicals safety to some extent • Workers have the knowledge to handle the chemicals they use. • Training on chemicals safety and health aspects will upgrade workers knowledge. • Training on chemical handling and associated health risks are not available locally • SBS has accumulated from few years tons of waste chemicals. Training on the disposal of chemicals, acids, solvents, etc. will be beneficial. • The stored chemicals have an impact on health if not disposed and stored for long. • Training should be available locally to sensitize the workers and public on chemicals safety and health aspects.

Table 11-7: Assessments and comments from the various organizations visited

- In the actual school curriculum, chemicals management is not a separate subject. However, in the first Science Unit for secondary students, entitled Introduction to Science, the students are introduced to labs and whereby they are briefed on chemical safety including issues as the necessary safety gears needed to work with the different chemicals in the science labs. It is important to note that the students are constantly reminded of chemical safety issues throughout secondary and post secondary learning.

During their third year in secondary school, students are required to do a unit on Environmental Health in the Personal and Social Education subject. This unit covers mainly health hazards and safety at work. Students also learn about chemical safety in school clubs such as the wildlife clubs. They learn how to dispose of waste properly so as to avoid pollution and soil and water contamination. They learn about CFCs and their effects on our environment. Wildlife club members in turn educate their parents and others on different environmental issues.

- Based on information gathered, it is clear that there is not enough well-trained people in the country to deal with chemical issues. Not many have had overseas training or professional training in the field. A lot of chemical handlers have had no training at all and are not very aware of the dangers of handling certain chemicals. For example, in the entire country there is only one person who is an expert in handling ammonia and he is currently working with the Seychelles Breweries. It has been expressed by several individuals that some kind of network or association should be established with all those involve in handling chemicals for better sharing of expertise.

- There is the Division of Risk and Disaster Management (DRDM) at the DoE but they are not well versed in chemicals management. They do not respond to chemical incidents directly but liaise with the Fire Services, Department of Health and the Department of Environment, in coordinating resources. The Division has been running a series of workshops for emergency preparedness and they have also been training police officers so that they can take part in the Hazardous Material Response Team which is being set up for 2011. It was felt that there is a need for some DoE staff to be trained in chemicals management.

- In September 2010, the Indian Ocean Commission organized a series of training for onsite responders and on-scene commanders as well as for the personnel of the National Incident Management Organization. The training was in line with the implementation of the Environmental Components B & C of the GEF-Western Indian Ocean marine highway development and coastal and marine contamination prevention project. This aimed at building capacity for prevention of coastal and marine contamination and capacity building for regional oil and chemical spill response. During the training sessions, participants were able to get familiarized with the National Oil Spill Contingency Plan and the incident management response organization. They were introduced to the main types of response techniques; offshore and onshore, safety during operations, setting up of clean-up sites, waste management and maintenance of equipments. The training comprises of indoor sessions as well as practical exercises outdoors.

- The general feeling is that there are not enough awareness and sensitization programmes where chemicals are concerned. This includes all areas from the actual organizations where chemicals are being used, among chemical handlers to the national media to the general public. Media should play a very important role in educating the general public about chemical safety. It is important that they receive sufficient information about the life cycle of chemicals as well as existing laws and policies regulating chemicals in the country so as to provide plausible information to the public. Health talks in schools should include chemical safety issues and such talks should be more regular and be carried out in all schools.

The National Consumers Forum (NATCOF), being the only non-state actor that deals with awareness-raising issues to consumers, including commercial chemicals products, should also play a more important role in educating the public about chemical issues so that people are more informed about the effects of certain chemicals on their lives and on the environment. There are a lot of products with harmful chemicals sitting on the shelves in shops without anyone taking too much notice. For example, some hair products and other cosmetic products can be harmful if not handled properly. In its role to protect consumers, NATCOF should work with the media and schools to have programmes on chemical safety and also help consumers understand the effects of chemicals in products being bought.

However, as stated before, it all boils down to a lack of knowledge of the various chemicals and their characteristics. NATCOF will certainly do a better job if the issues are brought to their attention via language that is communicable to the public.

The legal instruments and policies in relation to chemicals management have been highlighted in previous chapters. There is the Pesticides Act which should be revised and there are a number of international conventions and agreements already signed/ratified as detailed in the next chapter.

CHAPTER 12: INTERNATIONAL LINKAGES

12.1 CO-OPERATION AND INVOLVEMENT WITH INTERNATIONAL ORGANIZATIONS, BODIES AND AGREEMENTS

International Organization/ Body/Activity	National Focal Point (Ministry/Agency & Primary Contact Point)	Other Ministries/ Agencies Involved	Related National Activities
Intergovernmental Forum on Chemical Safety (IFCS)			
UNEP UNEP/UNIDO National Cleaner Production Centres	Department of Environment		UN Environment Programme
WHO	Dr. Cornelia Atsyor	Ministry of Health	-Review of Pesticides Act
FAO	Mr. Antoine Marie Moustache	Ministry of Investments, Natural Resources and Industry	
UNIDO	Ministry of Investments, Natural Resources and Industry		
ILO	Ministry of Employment		
World Bank	Ministry of Finance		
Regional Development Bank (specify)	Ministry of Finance		
United Nations Regional Economic Commissions (specify)	Ministry of Finance		

Regional Economic Groupings (Specify)	Ministry of Finance		
OPCW	Ministry of Foreign Affairs		

Table 12-1: Membership in International Organizations, Programmes and Bodies

International Agreements	**Primary Responsible Agency**	**Relevant National Implementation Activities**
UN Recommendations for the Transport of Dangerous Goods		
FAO Code of Conduct (voluntary procedure)	Pesticide Board	FAO Constitution: Use as guide for approval of pesticides activities.
Montreal Protocol[1] Convention on Biological Diversity	PS Didier Dogley Inese Chang-Waye as Ozone Coordinator	-green customs initiative for customs officers and law officers -training for technicians through SIT -public awareness in schools
Basel Convention[1] Control of trans-boundary movements of hazardous waste and their disposal	DOE, LWMA, STAR	-internal and external control on movement of waste
Agenda 21 - Commission for Sustainable Development		
ILO Convention 170		
ILO Convention 174		
Paris Chemical Weapons Convention	Ministry of Foreign Affairs	
Rotterdam Convention[1]	Department of Environment	None

Stockholm Convention[1]	DoE and other partners	National plan for next year
GHS	Seychelles Land Transport Agency	Movement of hazardous waste by road
SAICM	DoE and other partners	Chemical Profiling
Regional/Sub-regional Agreements (specify)		
Bilateral Agreements (specify)		
Regional Oil Spill CP	Department of Environment	-provide equipment and training -updating of National Plan -ongoing exercices
Basel Regional Centre	Department of Environment	-take up Stockholm activities
OPCW	Ministry of Foreign Affairs	

Table 12-2: Participation in International Agreements/Procedures Related to Chemicals Management

12.2 PARTICIPATION IN RELEVANT DEVELOPMENT AND TECHNICAL ASSISTANCE PROJECTS

Name of Project	International/ Bi-lateral Donor Agency Involved	National Contact Point	Relevant Activities
SAICM	UNITAR	Mr. Flavien Joubert	Compilation of a National Chemicals Profile to assess all aspects of chemcials management of Seychelles. Assessment of national capacity for the sound management of chemcials in seychelles.

			Setting up of priority issues for management of chemcials and identification of areas for action
Waste management	EU	Mr. Cliff Gonzalves	Construction of landfill Policies and strategies for waste management Capacity building and Technical Assistance for strengthening Agency.

Table 12-3: Participation as Recipient in Relevant Technical Assistance Projects

Waste Management Project Funded by EU

- The objective of the project is to protect the human health and environment of the Seychelles
- The duration of the project: 3 years as of 2007, but extended to end of 2011, due to re-tendering process of the main component.
- Main component: Construction of a new sanitary landfill, with leachate pre-treatment plant.
- Participating national organizations: DoE, MFA, LWMA
- Relevant experience gained:

EU project approach is somehow a hindrance. It is quite difficult to access funds since the EU Procurement document has several requirements that are not necessarily in place or accessible. It was also discovered that not all technicians who come to help with projects are well versed in the area of waste management.

- To help focus on priority activities and to avoid duplication, steering committees are set up to coordinate projects.

12.3 ASSESSMENT AND COMMENTS

National implementation of activities related to international agreements is being undertaken in certain ministries in a similar way to the SAICM initiative with the DoE. Some chemicals-related activities that have been conducted in the past include such as the re-exportation of used oil by STAR Seychelles to Reunion Island under the Basel Convention. This activity however, is no longer being undertaken.

The WHO secretariat in Seychelles does not directly sign international agreements for the country but advocates and supports the country in the processes of signing of conventions and international agreements.

It would be suffice to say that there is actually not enough co-ordination at the national level with respect to implementation of international activities and agreements in the area of chemicals management. The Pesticides Board has been criticized for not having been dynamic in their roles and the Board actually agrees that more could have been done on their part to monitor the movement of chemicals in the country, pesticides and other related and non-related chemicals.

Some committees do exist to help ensure co-ordination between ministries/agencies responsible for aid activities and those responsible for the protection of health, safety or the environment. However, these are not necessarily related to chemicals management.

In order for international agencies to improve the effectiveness of their current programmes in Seychelles, it is very important to improved co-ordination mechanism between ministries and agencies for better communication. Re-definition of priorities is also necessary so that they are better adapted to local conditions.

CHAPTER 13: RESOURCES AVAILABLE AND NEEDED FOR CHEMICALS MANAGEMENT

13.1 RESOURCES AVAILABLE IN GOVERNMENT MINISTRIES/INSTITUTIONS FOR CHEMICALS AND RELATED WASTE MANAGEMENT

Ministry/Agency Concerned	*Specific responsibilities for which resources are allocated*	*Number of Professional Staff Involved*	*Type of Expertise Available/equipments available*	*Financial Resources Available*
Environment	DoE DRDM	2 1	Chemical Management Command centre, safety gears	Budget allocation, Fines, Environmental Trust Fund, international agreements and supports
Health	Public health	6 trained staff who can cope with minor incidents only	Overalls, boots, gloves, sign boards, masks	Budget allocation, international support
	Occupational Health	1 trained staff	• Gives talks on chemical safety • Performs medical tests for chemical handlers • Joins teams on demand for investigations and routine inspections	Budget allocation
Agriculture				
Labour				
SBS	Chemical handling in labs	13	Food, water testing	As per allocated budget, international support

Industry				
Transport				
Justice				
Customs				
Fire Services	Fire fighting Search & Rescue Cleaning of roads (from oil leaks)	25	Experienced in fire safety. Deals with hazardous waste materials Safety gears and fire-fighting accessories available	As per allocated budget

Table 13-1: Resources Available in Government Ministries/Institutions

Ministry/Agency Concerned	*Specific responsibilities for which resources are required*	*Number/Type of Professional Staff Needed*	*Training Requirements*
DoE and LWMA	• Education and awareness programmes • Monitoring of carbon emission • Handling and disposal of chemical wastes • Chemicals movement monitoring	3 staff 3 staff 2 staff 1 staff	- Chemical safety - Use of appropriate instruments to measure level of pollution/contamination -Installation of management system -Handling & Disposal of waste
MoH	• Database	2 staff	Collection of information and creation of database on chemical incidents

	• Handling and disposal of chemical wastes	2 staff	Handling and disposal of medical waste
Agriculture sector	Pesticides life cycle tracking	2 staff	Installation of management system
Labour	Enforcement of health and safety at work	At least 6 staff	Chemical properties and their effects on health and environment
Trade/Commerce	Chemical identification	6 staff	Chemical labelling and identification
SLTA	Protocol for the transportation of hazardous substances	2 staff	Creating a system to ensure proper transportation of hazardous substances
Justice	Prosecutors to be trained for cases involving chemical incidents	2 staff	Chemicals, their uses and their effects on public health and the environment
Customs	Chemical identification Chemical handling and storage	2 staff	Chemical labelling and identification (GHS)
MFA	Monitoring of National implementation of International conventions and agreements in relation to chemical waste management	2 staff	Installation of monitoring system

Table 13-2: Resources Needed by Government Institutions to Fulfil Responsibilities Related to Chemicals Management

Concerned Institution	*Specific responsibilities for which resources are allocated*	*Number of Professional Staff Involved*	*Type of Expertise Available*	*Financial Resources Available (per year)*

SEPEC	Lead phase-out Storage of fuel and liquid gas	8 staff	Handling of chemicals Transportation, storage and distribution	Local funding

Table 13-3: Resources Available in Non-Government Institutions

13.2 RESOURCES FROM DEVELOPMENT ASSISTANCE ACTIVITIES

Many developing countries and those in economic transition benefit from multi-lateral and bi-lateral assistance activities related to the management of chemicals and related waste. In the case of Seychelles, the two main projects being undertaken is the SAICM and the EU project which are described in Chapter 12 section 2.

It is important to note that SEPEC is in the process of phasing out lead in fuel after having analysed the dangers that the substance poses to human health and the environment. The project is being financed by the company but they are receiving technical assistance from an international organisation. The lead-phase out process is actually in its final stage and is Seychelles is expected to be "lead-free" by early 2011.

13.3 ASSESSMENT AND COMMENTS

Most national ministries/agencies and NGOs are equipped such as to be able to deal with minor incidents related to chemicals and related waste management. Some organisations are able to decontaminate the chemical wastes before they are eventually released in the environment, thus causing no harm whilst others simply do not know what to do with the chemical waste as there is no proper facility for disposing of chemical waste in the country.
There is also a national need in strengthening, capacity building and human resources training in all areas of chemical life cycle and chemicals and related waste management. A good number of chemical handlers have had no training in dealing with chemicals and are not aware of their impacts on health and environment. There is a significant deficit in qualified human resources to manage chemicals and related waste safely, e.g. technicians, legal experts, customs officers, factory inspectors, clinical toxicologists, analytical toxicologists etc. What little expertise Seychelles has in the chemicals management context, are either scattered within the various ministries and departments of the country or these people have moved to the private sector and are not playing an active role in this endeavour.

It is perceived that the best strategy to be developed to mobilize sufficient technical and human resources in the country is the establishment of an inter-ministerial committee, which shall keep track of all chemical activities in the country, from importation to disposal. This body should also be responsible to monitor all ministries and organisations involved in chemical handlings and make sure that they are operating in line with their existing regulations and policies. Perhaps there is a need for the Pesticide Board to be more active or even to re-look into their roles and subsequently their structure.

With the construction of a new landfill at Providence, Mahe, there is the potential for encouraging public-private partnerships in the disposal of chemicals and waste management. The new landfill does not make provisions for chemical waste disposal. In the line of better management of waste in the country, the government is tendering for incineration of such waste.

CHAPTER 14: CONCLUSION AND RECOMMENDATIONS

Institutional arrangements for the sound management of chemicals in Seychelles lie with several agencies and departments. However, the absence of coordination undermines the formulation and proper implementation of a strategic approach. There is a need to clarify and harmonise responsibilities of different ministries. This is only possible by the setting up of a central body for the overseeing the management of chemicals at all stages within their life cycle in Seychelles.

In addition, the promotion of sound management of chemicals in Seychelles, calls for appropriate institutional, policy, legal and administrative arrangements to be in place. An effective legal and policy framework for the management and control of chemicals should be multi-sectoral with the ability to promote a coordinated approach which requires the following:

- Develop a national framework in order to address more effectively the issue of chemical impacts on health and environment, through integration of links in policies, strategies, regulations and national development plans.

- Support knowledge acquisition and management in the areas of chemical management, health and environment, particularly through applied research at local and regional levels, while ensuring coordination of scientific and technical publications so as to identify knowledge gaps and research priorities and to support education and training at all levels.

- Establish a sound surveillance system for chemicals management to allow measurement of interlinked health and environment impacts and to identify emerging risks, in order to manage them better.

- Set up effective mechanisms for reinforcing compliance with international conventions and national regulations to protect the population from threats related to chemicals.

- Set up national monitoring and evaluation mechanisms to assess performance in implementing priority programmes and peer review mechanisms to learn from each other's experiences.

- Achieve a balance in the allocation of national budgetary resources for inter-sectoral chemicals management programmes.

The enforcement and enactment of such a legal and policy framework shall lie within the jurisdiction of the proposed central body for the management of chemicals in Seychelles. This institution shall also have as its main role, the implementation of the SA in Seychelles, as per the ICCM's GPA and in line with the vision of the 2002 WSSD for the 2020 target.

Environmental law has been strengthened in Seychelles and environmental rights approaches have also been developed. Such approaches help to create a sound basis for dealing with the problems posed by chemicals, protecting human health and a safe environment, while promoting sustainable development. Nevertheless, there is a lack of development of national legal instruments to implement a comprehensive approach to chemicals in Seychelles. This is intensified by shortages of resource allocation for enforcement, monitoring, and training.

Effective legislation will require the monitoring as well as the establishment of proper management and disposal systems. Establishing such systems and obtaining the requisite equipment is expensive. Opportunities to bring chemical importers and producers in as part of a solution may be difficult but not impossible. While it is important for legislation to create proper liability and cost-recovery measures, through, for example, the incorporation of the polluter pays principle, it is also important to look at possible incentives. Technology and capacity issues will also need to be addressed in the implementation of legislation.

The paucity of information in itself shows that there is a need for capacity building in every aspect of the chemicals management in Seychelles. Hence, capacity building for chemicals information management and technology is considered a top priority for access to the national and the international database in a broadly open policy.

Thus, there is an urgent need to address the above to redress the Seychelles chemicals situation and at the same time to meet the requirements for a sound chemical management system in place for the country.

Public knowledge and information about chemicals and their impacts should be promoted at all sectors and levels within Seychelles. Awareness-raising of chemical safety issues would reduce the occurrence of chemical-related accidents. Labels and other clear instructions may be posted at public places and institutions e.g. clearly labelled chemical and related signs showing hazardous areas.

Under the SAICM's QSPTF, the drafting of the NP which is this document, is the very first and a very significant step in the addressing of chemicals issues nationally as it lays on table-top all issues for consideration when drafting the national plan for better management of chemicals nationally. The next publication, being the assessment of the local capacity, would serve as analysis of how Seychelles can presently deal with the issues pointed out herein and how large the gaps are in the context of Seychelles capacity in relation to the issues of concerns in national chemicals management.

Upon the identification of capacity levels and areas of priority, with the guidance of UNITAR through the QSPTF, the country would then be able to identify areas whereby international support can be directed into for implementation, by the drafting of work plans for action.

ANNEXES

ANNEX 1: GLOSSARY

Agricultural chemical: a substance applied to the soil or to plants in the cultivation of a crop.

Consumer chemical: a substance used mainly as an antiseptic disinfectant, preservative or cleaner.

Formulation: a preparation of a pesticide with other ingredients for effective application against the pest involved.

Impact assessment: a study of the effects arising from the production, storage, use, handling, transport and disposal of toxic substances on the biota.

Industrial chemical: a compound which is feedstock to or output from a transformation process or one that is ancillary to any industrial process or operation.

License: written authorization to perform as a pest control operator.

Pesticide: any substance which by itself, or in combination with others, is proposed, represented or used for destroying or controlling pests.

Pollution Prevention: avoidance of the addition of one or more chemical or physical agents to the air, water or land in an amount, at a rate and/or in a location that threatens human health, wildlife, plants or any other aspect of the environment.

Risk assessment: a study of the probabilities and magnitude of harm to human health or the environment associated with a physical or chemical agent, an activity or occurrence.

Risk reduction: a strategy involving the introduction of control measures to lower the probabilities and/or magnitude of events that are deleterious to human health and the environment.

Rural: having a low population density and being agriculture-based.

Trade: activity of buying, selling or exchanging goods and/or services.

Urban: having a high population density and being non-agriculture-based.

ANNEX 2: ABBREVIATIONS

CA = Capacity Assessment

DoE = Department of Environment

EPA = Environment Protection Act

FAO = Food and Agricultural Organization

GEF = Global Environment Facility

GHS = Global Harmonization System

GPA = Global Plan of Action

ICCM = International Conference on Chemicals Management

IFCS = Inter-governmental Forum on Chemicals Safety

ILO = International Labour Organization

IOMC = Inter-Organization Programme for the Sound Management of Chemicals

IOT = Indian Ocean Tuna

IPCS = Inter-governmental Panel on Chemicals Safety

LCD = Least Developed Countries

LUNGOS = Liaison Unit for Non-Governmental Organization of Seychelles

LWMA = Landscape and Waste Management Agency

MARPOL = Marine Pollution

MDG = Millennium Development Goal

MEEHR = Ministry of Education, Employment and Human Resources

MFA = Ministry of Foreign Affairs

MHAET = Ministry of Home Affairs, Environment and Transport

MINRI = Ministry of Industries, Natural Resources and Investments

MLUH = Ministry of Land Use and Housing

MoA = Memorandum of Agreement

MoF = Ministry of Finance

MoH = Ministry of Health

NATCOF = National Consumers' Forum

NIP = National Implementation Plan

NP = National Profile

NSB = National Statistic Bureau

OECD = Organisation for Economic Co-operation and Development

PIC = Prior Informed Consent

POPs = Persistent Organic Pollutant

PRTR = Pollutant Release and Transfer Registers

PUC = Public Utilities Corporation

QSP = Quick Start Program

QSPTF = Quick Start Program Trust Fund

SA = Strategic Approach

SAA = Seychelles Agricultural Agency

SAICM = Strategic Approach to International Chemicals Management

SBS = Seychelles Bureau of Standards

SCAA = Seychelles Civil Aviation Authority

SCCI = Seychelles Chamber of Commerce and Industries

SEPEC = Seychelles Petroleum Company

SeyBREW = Seychelles Breweries

SeyFA = Seychelles Farmers' Association

SEYPOL = Seychelles Police

SIBA = Seychelles International Business Authority

SIDS = Small Island Developing States

SIF = Seychelles Islands Foundation

SMSA = Seychelles Maritime Safety Administration

SPA = Seychelles Port Authority

SPDF = Seychelles People Defence Forces

STAR = Societé de Traitment et d'Assainaisment Regionale

TRANSEC = Transport Security

UN = United Nations

UNCED = United Nations Conference on Environment and Development

UNDP = United Nations Development Program

UNEP = United Nations Environment Program

UNIDO = United Nations Industrial Development Organization

UNITAR = United Nations Institute for Training and Research

UNISEY = University of Seychelles

WHO = World Health Organization

WSSD = World Summit on Sustainable Development

ANNEX 3: NAMES AND ADDRESSES OF KEY STAKEHOLDERS

NAMES OF PARTICIPANTS	MINISTRIES/DEPARTMENTS/ORGANISATION	TELEPHONE/EMIAL
Mr. Alain De Letourdie	SEYPEC	Tel: Email: a.deletourdie@seypec.gov
Mr. Alain Decomarmond	Disaster & Risk Management	Tel: 722980 Email: adecomarmond@gov.sc
Ms. Brenda Andimignon	Public Education & Community Outreach - DOE	Tel: 722111 Email: brenda_andimignon@hotmail.com
Mr. David Marie	Seychelles' Farmers Association	Tel: 510881 Email: davidmarie55@ymail.com
Mr. Edson Nanon	Seychelles Fire & Rescue Services	Tel: 289950/723751 Email: edsonnanon@yahoo.com
Ms. Eualie Sabury	Public Health Services	Tel: 388079/520997 Email: esabury@gov.sc
Ms. Juliana Legaie	Department of Environment (WEP)	Tel:723506/670530 Email: j.legaie@env.gov.sc
Mr. Keven Aglae	Employment Department	Tel: 676214/722122 Email: iaeaco@employment.gov.sc
Ms. Linda Bristol	Seychelles Land Transport Agency	Tel: 224449/ Email: linda@slta.sc
Ms. Mariette Lucas	UNISEY	Tel: 722859 Email: mariettelucas@hotmail.com
Mrs. Norelis Naya	Public Utilities Corporation	Tel: 719042 Email: nnaya@puc.sc
Mr. Samuel Brutus	Seychelles Agricultural Agency	Tel: 566136 Email: samuelbrutus@hotmail.com
Mr. Vivian Radegonde	Seychelles Bureau of Standards	Tel: 578920/380400 Email: radegondev@yahoo.com
Ms. Maria Jannie	Financial Controller (SAICM)	Tel" 765315 Email: mariajannie@intelvision.sc mena_jannie@hotmail.com
Mr. Leslie Judith	Occupational Health	Tel: 588572/388086 Email: lyza01@hotmail.com
Ms. Susan Marie Jeanne	CUSTOM	Tel: 714864 Email: susan.marie-jeanne@src.gov.sc
Ms. Edwina Alcindor	CUSTOM	Tel: 783858 Email: mialiandra@yahoo.com
Mr. Lemmy Payet	National Consultant (SAICM)	Tel: 722074 Email: lkpayet@hotmail.com

Mr. Viral Dhanjee	LUNGOS	Tel: 718800 Email: technoglass@hotmail.co.uk\
Mr. Michel Jean-Louis	NATCOF	Tel: 524145 Email:
Mr. Anderson Mousbe	Seychelles Port Authority	Tel: 722733 Email: psso@seychellesports.sc
Mr. Ned Wirtz	Seychelles Port Authority	Tel: Email:
Mr. Begum Nageon de Lestang	Coordinator (EMPS)	Tel: Email:
Ms. Tally Domingue	Seychelles Fire & Rescue Services	Tel: 289598/594506 Email: commandcentre@seychelles.net
Mr. Paul Labaleine	Disaster & Risk Management	Tel: 722101/322889 Email: plabaleine@statehouse.gov.sc
Mr. Randy Stravens	Seychelles Agricultural Agency	Tel: 519863 Email: rs25goal@hotmail.com
Ms. Shirley Joubert	Department of Environment	Tel: 722342 Email: jou5s4@gmail.com
Mr. Cliff Gonsalves	Evaluator (SAICM)	Tel: 722780 Email: c.gonzalves@env.gov.sc
Mrs. Veronique Payet	Landscape, Waste Management Agency	Tel: 722712 Email: v.payet@env.gov.sc
Mrs. Julita William	Registrar Pesticide	Tel: 388484 Email: williamb913@hotmail.com
Ms. Begum Nageon de Lestang	Coordinator (EMPS)	Tel: Email:

ANNEX 4: STAKEHOLDER ENDORSEMENT FORMS

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Bernard Crogrennec for and on behalf of STAR Seychelles registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Crogrennec Bernard.
Position: Director
Organization: STAR Seychelles

Signature: ..... Date: 19/11/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I David Rowson for and on behalf of Island Redevelopment Company registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: David Rowson
Position: Environmental Health and Safety Supervisor
Organization: IDC

Signature: _____ Date: 12/10/2010

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Marthe Faure for and on behalf of Seychelles Civil Aviation Authority (SCAA) registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Marthe Faure
Position: Occupational Health and Safety officer
Organization: SCAA

Signature: [signature] Date: 18/11/2010

SEYCHELLES CIVIL AVIATION AUTHORITY

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I SUSAN MARIE-JEANNE for and on behalf of CUSTOMS DIVISION registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: SUSAN MARIE-JEANNE
Position: 2ND I/C SUPPORT EXAMINATION.
Organization: S.R.C – CUSTOMS DIVISION

Signature: _____ Date: 19/10/10.

CUSTOMS REPUBLIC OF SEYCHELLES

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I RANDY STRAVENS for and on behalf of NATIONAL PLANT PROTECTION OFFICE registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: RANDY STRAVENS
Position: PRINCIPLE PLANT PROTECTION OFFICER
Organization: SEYCHELLES AGRICULTURAL AGENCY (SAA)
PLANT & ANIMAL HEALTH SERVICES (PAHS)
Signature: Stravens Date: 12/10/2010

Ministry of Environment, Natural Resources & Transport
Dept. of Natural Resources
Plant Protection Services
Republic of Seychelles

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Michel J. Mellie for and on behalf of National Bureau of Statistics registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: MICHEL J. MELLIE
Position: PRINCIPAL STATISTICIAN
Organization: NATIONAL BUREAU OF STATISTICS

Signature: M J M Mellie Date: 11/11/2010

NATIONAL BUREAU OF STATISTICS
P.O. Box 206
VICTORIA, MAHE
SEYCHELLES

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I MARK BENOITON for and on behalf of INDIAN OCEAN TUNA Ltd registered company / ~~Governmental body~~ / ~~NGO~~ of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / ~~Department~~ / ~~Organization~~ sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / ~~Department~~ / ~~Organization~~, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name:
Position:
Organization:

Signature: _____ Date: 11.11.10

For G.M. Mr A. Lazazzara

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Lianette Laurette for and on behalf of Import/Export Permit, Ministry of Finance registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Lianette Laurette (Mrs).
Position: Director Import/Export Permit
Organization: Ministry of Finance

Signature: _____ Date: 27/10/10.

27/10/10.

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Lena Desaubin for and on behalf of Landscape & Waste Management Agency registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Lena M Desaubin
Position: CEO
Organization: Landscape & Waste Management Agency

Signature: Lena Desaubin Date: 20/10/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I KEVIN HUMPHREY for and on behalf of the S.S.P.C.A registered company / Governmental body / ~~NGO~~ of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: KEVIN HUMPHREY
Position: ANIMAL WELFARE OFFICER.
Organization: Seychelles Society for the Prevention of Cruelty to Animals. SSPCA.
Signature: [signature] Date: 12/10/10.

Tel : 611004
SSPCA
Mobile : 710088

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Jules Baker for and on behalf of Employment Department registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Jules Baker
Position: Director General Employment
Organization: Employment Department

Signature: _____ Date: 20/10/10

MINISTRY OF EMPLOYMENT & HUMAN RESOURCES DEVELOPMENT
DIRECTOR GENERAL
OFFICIAL
REPUBLIC OF SEYCHELLES

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I JONES MADELEINE for and on behalf of CHIEF FIRE OFFICER. registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: JONES MADELEINE
Position: SUB INSPECTOR.
Organization: SEYCHELLES FIRE & RESCUE SERVICES AGENCY.

Signature: [signature] Date: 12/11/10.

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

Department of Environment Seychelles saicm UNEP unitar

I JENNY AGLAE for and on behalf of Ministy of Health. registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Jenny aglae.

Position: Stock Control Asst.

Organization: Cleaning Material Store.

Signature [signature]

Date: 26/10/10.

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I JAMIE FORMERT for and on behalf of SEYPEC registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: JAMIE FORMERT
Position: ASSESTANT OPERATION MANAGER.
Organization: SEYCHELLES PETROLEUM CO. LTD.

Signature: JAMIE FORMET
Assistant Operations Manager
SEYCHELLES PETROLEUM. CO. LTD

Date: 15/10/2010

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Jacques Bell for and on behalf of The Ministry of Foreign Affairs registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Jacques Bell
Position: Third Secretary, Treaties and Consular Affairs Division
Organization: Ministry of Foreign Affairs of Seychelles

Signature: [signature]

Date: 8/11/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I, Dr. Rolph A. Payet, for and on behalf of Environmental Management Plans of Seychelles (EMPS): 2010 - 2020 , registered Inter-Governmental body of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: ROLPH A. PAYET

Position: PRESIDENT & VICE-CHANCELLOR

Organization: UNIVERSITY OF SEYCHELLES

Signature: ----------

Date: 05th November 2010

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I DR. JIMMY G. MELANIE for and on behalf of VETERINARY SERVICES registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Dr. JIMMY G. MELANIE
Position: P.V.O
Organization: VET. SERVICES - SAA

Signature: ----------

Date: 12/OCT/2010

SEYCHELLES AGRICULTURAL AGENCY • VETERINARY SERVICES •

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Darrel Benoit for and on behalf of PUC registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Darrel Benoit
Position: Health & Safety officer
Organization: PUC

Signature: Date: 11/11/10

PUBLIC UTILITIES CORPORATION ★ PUC ★ WATER & SEWERAGE DIVISION

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I CORNELIA AFI ATSYOR for and on behalf of WHO registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: CORNELIA ATSYOR
Position: WLO
Organization: WHO

Signature: cly

Date: 27/10/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I CHRISTOPHER HOAREAU for and on behalf of FISH INSPECTION UNIT registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: CHRISTOPHER HOAREAU
Position: DIRECTOR
Organization: FISH INSPECTION UNIT

Signature: _____ Date: 19/10/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I, Antoine Marie-Moustache for and on behalf of Seychelles Agricultural Agency / Food and Agriculture Organization for Seychelles, declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my ~~company~~ / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my ~~Company~~ / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name:
Position:
Organization:

Signature:_____

SEYCHELLES AGRICULTURAL AGENCY
Office of Chief Executive Officer

Date: 27-10-10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Anderson Mousbé for and on behalf of Seychelles Ports Authority registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Anderson Mousbé
Position: Assist Manager Security
Organization: Seychelles Ports Authority

Signature: Mousbé Date: 12/11/10

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I Allen de L'Etourdie for and on behalf of Seychelles Petroleum Company registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name: Allen de L'Etourdie
Position: Chief Fire & Safety Officer
Organization: Seychelles Petroleum Company

Signature: Date: 15/10/2020

Developing an Integrated National Programme for the Sound Management of Chemicals and SAICM Implementation in Seychelles.

I ALEX SOUFFE for and on behalf of SOE, UNISEY registered company / Governmental body / NGO of Seychelles declare that I have seen and understood the contents of the project for the SAICM Quick Start Program Trust Fund (round V), submitted by the Seychelles Department of Environment acting as the National SAICM Secretariat and UNITAR.

I hereby declare that my company / Department / Organization sees this national effort to access this facility and develop an integrated national program for chemicals management as a positive move that would bring benefits to the proper handling and general management of chemicals nationally and would benefit all sectors of the country.

On behalf of my Company / Department / Organization, I therefore convey commitment to the SAICM National Secretariat and UNITAR to provide input and data for the preparation of the National Chemicals profile, the capacity assessment and any other documents related to the same.

Name:
Position:
Organization:

Signature: ASouffe Date: 10/11/10

ANNEX 5: SEYCHELLES PROJECT WORK PLAN

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																									
				2010							2011												2012					
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4		
Establishment of Project Management Infrastructure and Undertaking Preparatory Tasks																													
1	Finalisation of a Memorandum of Agreement (MOA) between UNITAR and Seychelles	Agreed MOA	Seychelles, UNITAR																										
2	Establishment of Project Steering Committee and designation of Project Secretariat	Project Steering Committee and Project Secretariat in place	Seychelles																										
3	Hold a Planning and Inception Workshop with interested parties	Awareness raised, finalised terms of reference and workplan of the project	Seychelles, UNITAR																										
National Chemicals Management Profile Development																													
4	Provision of guidance and training materials to Seychelles for timely distribution in advance of the National Profile updating planning meeting	Documents received and distributed; awareness raised	UNITAR																										
5	Obtain political commitment to prepare a National Profile	Strengthened commitment of key partners involved in chemicals management at the national level and raised awareness	Seychelles																										
6	Hold National Profile Planning Workshop	Agreed National Profile development coordinating mechanisms including workplan and budget for completion	Seychelles, UNITAR																										

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																									
				2010							2011													2012				
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
7	Provide technical advice on development of National Profile	Increased knowledge on chemicals management, SAICM, and National Profile	UNITAR																								
8	Establish a network of contact points and gather relevant information	Strengthened coordination and collaboration of key partners involved in chemicals management at the national level	Seychelles																								
9	Develop drafts of the National Profile	Draft National Profile prepared	Seychelles																								
10	Hold interim meetings to discuss progress	Interim meetings held and strengthened coordination and collaboration	Seychelles																								
11	Prepare final draft of the National Profile	A comprehensive assessment of the national infrastructure, relating to the legal, institutional, administrative, and technical aspects of chemicals management along with an understanding of the nature and extent of chemicals availability and use in the country – the National Profile	Seychelles																								

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																								
				2010							2011												2012				
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
12	Hold a Final National Profile Review Meeting, and obtain stakeholder endorsement for the National Profile	Strengthened multi-stakeholder involvement; awareness raised; Endorsed National Profile	Seychelles																								
13	Publish and distribute the National Profile (in hardcopy and on the UNITAR/ECB National Profile Homepage and related CD-Rom)	Publicly-available National Profile; awareness raised	Seychelles, UNITAR																								
National SAICM Capacity Assessment Preparation																											
14	Provision of guidance and training materials to Seychelles for timely distribution in advance of the planning meeting for the National SAICM Capacity Assessment	Documents received and distributed; awareness raised	UNITAR																								
15	Hold a National SAICM Capacity Assessment Planning Workshop in consultation with interested parties (including government, business and industry, and public interest and labour organisations)	Agreed details for preparing a National SAICM Capacity Assessment including workplan	Seychelles, UNITAR																								
16	Use the National Profile (and other relevant materials, such as National Implementation Plans for the Stockholm Convention) to inform the assessment	Utility of National Profile highlighted; awareness raised	Seychelles																								
17	Develop draft(s) of the National SAICM Capacity Assessment	Draft National SAICM Capacity Assessment prepared	Seychelles																								
18	Hold regular interim meeting(s) to discuss progress	Interim meetings held and strengthened coordination and collaboration	Seychelles																								
19	Prepare a final draft of the assessment	National SAICM Capacity Assessment prepared	Seychelles																								
20	Present and endorse the National SAICM Capacity Assessment during the National	Strengthened multi-stakeholder	Seychelles, UNITAR																								

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																								
				2010							2011												2012				
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
	Forum on Governance and Priority Setting for SAICM Implementation	involvement; awareness raised; Endorsed National SAICM Capacity Assessment																									
21	Publish and distribute the assessment (in particular, in preparation for the National SAICM Priority Setting Workshop, and on UNITAR's website)	Publicly-available National SAICM Capacity Assessment; awareness raised	Seychelles																								
National Governance Structure Development																											
22	Develop terms of reference for sustained inter-ministerial coordination	Terms of reference for inter-ministerial coordination	Seychelles																								
23	Activate a formal mechanism to ensure coordination of all activities concerned with chemicals and waste management	Formal coordination mechanism established	Seychelles																								
24	Develop a stakeholder involvement policy	Stakeholder involvement policy developed	Seychelles																								
25	Publish and distribute background materials such as national programme documents	Publicly-available background documents; knowledge strengthened; awareness raised	Seychelles																								
26	Hold a National Forum on Governance and Priority Setting for SAICM Implementation with government ministries, stakeholder groups, and UNITAR	Strengthened multi-stakeholder involvement; awareness raised; endorsed National SAICM Capacity Assessment; endorsed inter-ministerial coordination	Seychelles, UNITAR																								

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																							
				2010							2011												2012				
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
		mechanism; identification of national priorities for SAICM implementation and linkages to national development planning																									
27	Publish and distribute endorsed national programme documents (including agreed SAICM governance structure, results of National SAICM Capacity Assessment, national SAICM priorities	Publicly-available national programme documents; awareness raised	Seychelles																								
28	Undertake a series of topic-specific training workshops for target groups	Strengthened multi-stakeholder involvement; awareness raised; training on specific topics	Seychelles																								
29	Hold an Action Plan Skills Building Workshop with interested parties and UNITAR	Strengthened multi-stakeholder involvement; awareness raised; training on topics such as financial resource mobilisation	Seychelles, UNITAR																								
30	Develop action plans to implement two to three partnership projects and undertake enabling activities for the partnership projects	Action plans developed for two to three partnership projects; enabling activities for partnership projects carried out; awareness raised	Seychelles																								
31	Prepare and submit final drafts of the action plans	Final drafts of the action plans	Seychelles																								
32	Holding a Final Project Meeting with interested parties and UNITAR to review project results and agree on a work plan for subsequent action	Strengthened multi-stakeholder involvement; awareness raised	Seychelles, UNITAR																								

No.	Activities	Outputs/Outcomes	Lead Responsibility	Timeframe																								
				2010							2011												2012				
				6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
33	Identify next steps and possible actions to ensure: (i) effective implementation of partnership projects and SAICM in general and (ii) further consolidation of chemicals management into national development planning.	Next steps and possible actions identified	Seychelles																								