

POLICY OPTION ANALYSIS

For the

Belize SAICM Initiative

Mainstreaming into Development Plans the Sound
Management of Chemicals (SMC) Priorities for Key

Development Sectors in Belize and SMC

Governance

Project

Development of the Concept papers, Policies and
And Cost Benefit Analysis

Submitted to the

Project Coordinator

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October 28, 2010

Belmopan, Belize

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1.0 Purpose

Develop targeted policies and regulatory responses for selected chemicals management priorities considered from a national development planning perspective.

2.0 Goal

Highlight the legislation and institutional reform necessary to facilitate the implementation of selected priorities and their integration into national development planning¹.

3.0 Background

The benefits of chemicals in modern society are visible in everyday life. They play an important role in the economic development of countries. Virtually everything in daily use involve chemicals: the dyes on clothes, soap and shower gels, toothpaste, breakfast cereals, paints, plastics, lubricants etc. Pesticides and fertilizers contribute to the quality of life by facilitating year-round availability of agricultural produce such as fruits, grains and vegetables. The use of chemicals nonetheless carries with it a variety of risk that often surpasses the benefit. The widespread use of chemicals without good management practices has led to increasing concern over the potential effects of certain substances upon both people and the environment.

To address the potential harmful effect of chemicals, the international community, through specialized agencies of the United Nations system, has developed and promoted the adoption and implementation of a number of conventions and agreements aimed at addressing substances of global concern and developing capacities for the sound management of chemicals more broadly.

The latest initiative of the international community to assist countries in the management of chemicals is the “Strategic Approach to International Chemical Management (SAICM),” adopted by the International Conference on Chemical Management (ICCM) held in Dubai in February of 2006. It is a policy framework to promote chemical safety around the world and to achieve the overall objective of sound management of chemicals through 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.

A Quick Start Program (QSP) has been established for the implementation of SAICM objectives. The purpose is to support initial enabling capacity building and implementation activities in developing countries, least developed countries, small island developing states and countries with economies in transition.

Belize actively participates in international initiatives for chemicals management as noted in the Situational Analysis Report.

4.0 Belize SAICM Project

¹ UNDP Technical Guide for Integrating the SMC in MDG Based Policies and Plans

In 2009, Belize received technical and financial support from the QSP to implement the project: “Mainstreaming into Development Plans the Sound Management of Chemicals (SMC) Priorities for Key Development Sectors in Belize and Associated SMC Governance”

The main components of the project are:

The Situational Analysis which includes:

Baseline analysis

Diagnosis and need assessment.

Identification of national SMC priorities.

Economic valuation and policy options for selected priorities.

Mainstreaming priorities into the national development plan.

In September of 2009, Belize launched the SAICM project aimed at identifying priority sectors and prioritizing chemical management issues of concern, with the purpose of having an integrated approach to the sound management of chemicals in the country, and at the same time to identify the chemical issues of highest priority for mainstreaming into the national development plan. The Situational Analysis document identified priority development sectors and important chemicals in these sectors; it described the status of sound management of chemicals in the country, identifying existing legal and institutional strengths and gaps. With full participation of government ministries, industry and the NGO community, a prioritization exercise was conducted in June of 2010 for the purpose of identifying the high priority chemical management issues. The participants validated what stakeholders had previously identified as important chemical management issues and proceeded to select what was considered to be the four SMC issues of highest priority in Belize:

1. Prevention and Control of Chemical Pollution and Waste with Emphasis on Persistent Organic Pollutants.
2. Enhance Industry Sector Risk Reduction Through the Implementation of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) in Belize.
3. Safe Handling and Use of Chemicals, with an Emphasis on Pesticides, to Address Poisoning, Good Agricultural Practices and Unnecessary Threats to Biodiversity.
4. Chemical Accidents. Expand National Emergency Plans to Include Industrial Accidents Including In Ports and Shipping Channels To Defend Coastal Zone Integrity/Biodiversity and Safeguard Human Health.

In order to further expand on the analysis of the high priority SMC issues, concept papers were developed for each issue. The papers describe the importance of the chemical management issue, the chemicals related to that issue and their potential negative impact on human health and the environment. They also identify the risk posed by existing gaps, remedial actions and the benefits of their implementation.

5.0 Policy Options Analysis

For the purpose of moving the process further toward mainstreaming of SMC priorities into the national development process, available policy options and the implications in terms of cost and required institutional capacity have been assessed for each SMC priority. Since the policy options are numerous and the available resources and time are limited, it becomes necessary to select those areas or work most likely to have measurable effects on the management of chemicals within the context of national capacities and the timeframe of the national planning cycle.

6.0 *Prevention and control of Chemical Pollution and Waste with Emphasis on Persistent Organic Pollutant (POPs)*

In the document “Belize National Profile and Assessment of the National Infrastructure for the management of Chemicals” it is stated that “The dioxins, furans and hexachlorobenzene emissions are unintentionally released from combustion processes like waste incineration, burning of garbage at landfills or municipal or urban dump sites, burning of agricultural fields, burning firewood, and the production of lime”. The same document states that waste incineration accounts for most of the emissions, a main source being the KHMH hospital which is located in the country’s most populated city.

To date, no action has been taken in-country to address the by-products of uncontrolled burning and the unintentional release of harmful chemicals into the environment.

With respect to waste disposal, an IDB-funded municipal garbage project is in its final stage of development but deals primarily with the establishment of a sanitary land fill and the disposal of domestic and commercial waste. It will not have the capacity to treat hazardous material, and consequently the issue inadequate incineration of medical waste remains unaddressed.

The unintentional release of furans and dioxins from burning of agricultural fields calls for a change in harvesting and land preparation practices.

The problem of improper disposal of medical and other hazardous waste requires the construction of an incinerator that meets international emission standards and is capable of handling up to 2,000 tons of waste per annum. This facility should be complemented by a medical and hazardous segregation, collection and transportation system.

Several work areas are available to begin addressing this high priority SMC issue:

1. Develop the enabling legal framework for the management of waste.
2. Review and update National Implementation Plan for POPs and UPOPs.
3. Identify and dispose of obsolete stocks of pesticide so that they are disposed of in an environmentally-sound manner.

4. Develop a national waste management plan to begin phased improvements in how waste is collected, segregated and soundly recycled or disposed of.
5. Waste management awareness-raising

Taking into consideration what is already in progress, the available timeframe and required resources, it is felt that these activities are feasible for mainstreaming into the next development planning cycle.

The implementation of policy options (2) and (3) implies updating of legislation, situational analysis of new POPs, final disposal abroad of POPs stockpiles, promotion of green cane harvesting and mechanized land preparation in agriculture. Policy options (1), (4) and (5) require the updating of legislation, waste management situational analysis, development of waste management plan that addresses identified waste management gaps, and development and implementation of a waste management education and awareness program. The estimated cost to implement the actions addressing this sound management chemical issue is USD\$1,860,000.00

7.0 *Enhancing Industry Sector Risk Reduction Through the Implementation of the Global Harmonized System of Classification and Labeling of Chemicals (GHS) in Belize.*

GHS enhances the protection of human health and the environment by providing an internationally-comprehensive system of hazard communication; reducing the need for testing and evaluation of chemicals at the national level; and providing information to users on hazards and the safe handling of chemicals, thus reducing risk. Guidance documents exist on GHS implementation strategies, legislation, situation analysis, chemical hazards, labelling and safety data sheets. Technical support is also available for capacity building from UNITAR, ILO and OECD.

Stakeholders participating in the prioritization exercise to select high priority chemical management issues agreed that this issue was of great concern due to the unnecessary exposure to which workers were subjected because of limited knowledge on the hazards of chemicals they work with on a daily basis. Currently there is no legislation requiring employers to inform workers about chemical hazards and as such the ICM and other stakeholders were unanimous in recommending the implementation of the GHS in Belize.

The following steps will be taken to begin addressing this priority issue:

1. Review applicable national legislation and begin aligning with GHS requirements.
2. Establish roles and responsibilities of employees, chemical suppliers and government in the implementation of GHS.
3. Establish an information clearing house for hazard information.

4. Prepare safety data sheets and labels applicable to Belize building on the GHS source material.
5. Develop and implement GHS awareness raising and capacity-building program.

Policy option (1) creates the enabling legal environment to implement GHS. It establishes the role and responsibilities of key players as it relates to information dissemination and awareness. Option (2) is partially addressed in the legal instrument, and is complemented by the GHS awareness-raising and capacity-building program. Option (3) deals with the issue of hazardous data collection, processing and availability for public use. Policy option (4) calls for the development of national safety data sheets and labels using UN guidance document. In addition to the international standard for information to be included, the national safety data sheet should take into consideration culture, language, and literacy rate of target population in order to ensure effective transfer of information. Policy option (5) requires the development of a public awareness plan to promote GHS implementation along the entire spectrum of chemical use. The estimated cost to implement the actions addressing this sound management chemical issue is USD\$225,000.00

8.0 *Safe Handling and use of Chemicals with Emphasis on Pesticides to Address Poisoning, Good Agricultural Practices and unnecessary threat to Biodiversity.*

In Belize, Agriculture, Forestry and Fishing continue to form the foundation of the productive sector and the rural economy of Belize. 11.65% of GDP and 26.2% of total employment is directly dependent on agriculture, fisheries & forestry. What is the key to understanding the importance of this sector is its direct contribution of 65% of our entire nation's exports earnings. It follows that large amounts of pesticides are imported and used in this sector.

An acute pesticide intoxication study conducted in 2003 found that a large number of preventable intoxications occur annually. This study also showed that as much as 36.7% of papaya workers in one year suffered from contact dermatitis due to workplace pesticide exposure. The improper use of pesticides releases high quantities of these chemicals in the environment with negative impact on local ecosystems and biodiversity. The application of good agricultural practices in farming and food processing around the world has demonstrated its contribution to safeguarding the health of people handling pesticides by introducing practices that reduce exposure, intoxications and poisoning. It also minimizes the impact on the environment from runoff and threats to biodiversity. Required initiatives are:

1. Develop and promote the implementation of GAP including Integrated Pest Management.
2. Promote access to lower risk or safer pesticides.
3. Promote the use of pest and disease-resistant crop varieties
4. Provide training in alternative and ecological agricultural practices, including non-chemical alternatives.

5. Regulation on safety gears availability at the workplace and awareness program on personal protection while handling pesticides.

The required actions to implement policy option (1) are to develop the scope and strategies for the national GAP program, to develop crop-specific IPM manuals and the development of a national awareness IPM program. The implementation of policy options 2, 3 and 4 are components of national training and awareness programs to be implemented through the existing agriculture extension services. This requires the development of GAP and IPM capacity-building programs for agriculture extension officers, the development of an IPM training manual for farmers, and the integration of GAP and IPM into the school of agriculture curricula. The estimated cost to implement the actions addressing this sound management chemical issue is USD\$400,000.00

9.0

Chemical Accidents Preparedness. Expand National Emergency plans to Include Industrial Accidents including in Port and Shipping Channels to Defend Coastal Zone Integrity/Biodiversity and Safeguard Human Health.

The oil spill in the Gulf of Mexico (2010) and the ongoing national debate on the granting of offshore oil exploration rights to companies has served to raise the level of national awareness regarding the eventuality of a major accident where chemicals are involved.

Prior to 2006, Belize was a net importer of fuel and lubricants-related chemicals. As of that year, oil production was initiated with 29 million gallons. The annual production has been steadily increasing reaching 48.04 million gallons in 2008 and 53.58 million gallons in 2009. Approximately 7% of the production is transported to Guatemala, which is about 25 miles away, by road. The remaining 93% is transported to the southern port of Mango Creek, which is approximately 125 miles away. Notwithstanding the fact that the Belize National Energy (BNE) Company has a good transport safety program in place, the risk exists for an accident to occur. It is not surprising, therefore, that stakeholders identified chemical accidents as a high priority chemical issue requiring urgent attention at the highest level. Recent accidents involving a natural gas explosion, highway oil spill and processing plant chemical spill in a nearby river has shown that agencies responding to these events were not prepared to adequately deal with the problem and level of coordination was poor.

Nationals have identified the lack of disaster preparedness to deal with industrial and chemical accidents as a major SMC issue confronting Belize; consequently, they see the need to formulate prevention and response measures to mitigate environmental and health impacts of emergencies involving chemicals.

The single most important work area to address this SMC issue is to develop an integrated national system to prevent major industrial accidents and for emergency preparedness and

response to accidents and disasters involving chemicals. It should be noted that the infrastructure required (NEMO, fire department, police, Health) for such systems already exist but capacities must be enhanced to respond in context of a chemical-related emergency.

Improvements in this area will require the following:

1. Review legislation dealing with accidents prevention, preparedness and control.
2. Industry hazard identification and risk assessment.
3. Incorporate into national disaster preparedness plan a chapter on industrial and chemical prevention and response, utilizing OECD, WHO and IPCS guidance documents.
4. Support industry to develop on-site accident prevention and response plans. The estimated cost to implement the actions addressing this sound management chemical issue is USD\$265,000.00

10. Action plan

Goal

To put in place the required legislative and institutional infrastructure to support the implementation of policies and actions addressing the identified high priority SMC issues.

Strategies

Capitalize on existing in-country chemical management capacities.

Use a multi-sectoral, multi-stakeholder approach to chemical management.

Draw on existing international technical guidance documents

National Action Plan for the Implementation of SAICM in Belize. 2011-2015

SMC Issue	Selected Policy Options	Actions	Timeframe	Cost USD\$
1. Prevention and control of chemical pollution and waste with emphasis on persistent organic pollutants (POPs).	Identify and dispose of obsolete stocks of pesticide so that they are disposed of in an environmentally sound manner.	Update legislation on waste management including new POPs	2011	\$45,000.00
		Situational analysis of new POPs.	2012	\$250,000.00
		Proper disposal of POPs including medical waste on a recurrent basis.	2013-2015	\$1,200,000.00
		Information generation and communication on green harvesting and land preparation practices	2011	\$120,000.00
	Establish the enabling legal framework for the management of waste.	Attitude, Knowledge and Practice study on waste management.	2011	\$30,000.00
		Develop waste management policy document and update legislation.	2012	\$45,000.00
		Waste management awareness raising program.	Develop and implement waste management awareness plan including green harvesting and land preparation practices.	2012-2013
	Develop a national waste management plan to begin phase improvements in	Establish and begin the implementation of a national		

	how waste is collected, segregated and soundly recycled or disposed of.	action plan with respect to waste prevention, waste minimization, waste separation and disposal through the application of best practices.	2012-2015	\$120,000.00
2. Enhancing Industry Sector Risk Reduction Through the Implementation of the Global Harmonized System of Classification and Labeling of Chemicals (GHS) in Belize.	Review applicable legislation and begin aligning with GHS requirements.	Review and align legislation with GHS requirements.	2011	\$45,000.00
	Develop GHS situational analysis and national GHS action plan, including the establishment of hazardous information clearing house.	Conduct GHS situational analysis.	2011	\$30,000.00
	Establish roles and responsibilities of employees, chemical suppliers and government in the implementation of GHS.	Incorporate in legislation the role of main stakeholders in the implementation o GHS	2011	\$30,000.00
	Prepare safety data sheets and labels.	Develop Belize safety data sheet and labels.	2012	\$30,000.00
	Develop and implement GHS awareness raising and capacity-building program.	Develop and implement GHS action plan including awareness raising actions.	2012-2015	\$90,000.00
3. Safe Handling and use of Chemicals with Emphasis on Pesticides to Address Poisoning, Good Agricultural Practices and unnecessary threat to Biodiversity.	Develop and promote the implementation of GAP including Integrated Pest Management.	Determine scope and strategies for national GAP program.	2011	\$30,000.00
		Develop crop-specific IPM manuals.	2012	\$60,000.00
		Conduct inventory of farmers applying pesticides and pesticide use.	2011	\$100,000.00
		Develop national GAP and IPM awareness program.	2012	\$120,000.00
		Integrate GAP and IPM into the school of agriculture curricula.	2013	\$90,000.00
	Promote access to lower risk or safer pesticide.	Train farmers on the use of alternative safer pesticides	2013-2015	\$60,000.00
	Promote the use of pest and disease-resistant crop varieties	Conduct demonstration projects on alternative farming.	2013-2015	\$50,000.00
Provide training in alternative and ecological agricultural practices, including non-chemical alternatives	Develop and implement capacity building for agriculture extension officers.	2012-2013	\$100,000.00	
	Develop farmer's IPM training manuals and capacity building program.	2012	\$60,000.00	
4. Chemical Accidents Preparedness. Expand National Emergency plans to Include Industrial Accidents including in Port and Shipping Channels to Defend Coastal Zone Integrity/Biodiversity and Safeguard Human Health.	To develop an integrated national system to prevent major industrial accidents and for emergency preparedness and response to accidents and disasters involving chemicals.	Review legislation dealing with accident prevention, preparedness and control.	2011	\$45,000.00
		Hazard identification and risk assessment.	2011	\$45,000.00
		Incorporate into national disaster preparedness plan a chapter on industrial and chemical prevention and response using OECD, WHO and IPCS guidance documents.	2012	\$25,000.00
		Develop guidelines for industrial accidents involving hazardous chemicals.	2012	\$25,000.00
		Support to industry in the development of onsite accident preparedness plan.	2012-2015	\$125,000.00
TOTAL COST				USD\$3,020,000.00

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