International SAICM Implementation Project (ISIP)

In 2010, in an effort to demonstrate SAICM implementation via IPEN Participating Organizations, IPEN launched an International SAICM Implementation Project, also known as ISIP. ISIP aims to mobilize resources for initial enabling activities pertaining to national priorities, in keeping with the work areas set out in the strategic objectives of section IV of the SAICM Overarching Policy Strategy.

In particular, the ISIP supports the Governance objective of SAICM’s Overarching Policy Strategy paragraph 26, which calls for enhanced “cooperation on the sound management of chemicals between Governments, the private sector and civil society at the national, regional and global levels.”

In addition, ISIP builds on the 2008-2009 Global SAICM Outreach Campaign to raise awareness about SAICM and strengthen collaboration among the public interest, health and labor sectors.

ISIP Objectives

ISIP’s four objectives include:
- Promoting the need for sound chemicals management
- Advancing National SAICM Implementation
- Promoting global SAICM implementation by global civil society
- Building capacity among NGOs developing countries and countries with economies in transition

Title of activity: Mobilizing people on Arsenic poisoning due to illegal pesticides use in Sri Lanka

NGO: Centre for Environmental Justice (CEJ)
Country: Sri Lanka
Date: November, 2012

Elements of SAICM Covered:

Promote substitution for highly toxic pesticides including effective non-chemical alternatives (27); Provide training in alternative and ecological agricultural practices, including non-chemical alternatives (51); Encourage industry to extend product stewardship and to voluntarily withdraw highly toxic pesticides which are hazardous and cannot be used safely under prevalent conditions (30); Promote integrated pest and integrated vector management (29); Establish programmes for monitoring chemicals and pesticides to assess exposure (66)

Description of:
The highly hazardous pesticide(s) registered/sold and/or in use in your country:
In Sri Lanka, the names of prohibited, limited and permitted Pesticides are given under the gazette extraordinary no. 1254/8 of 18th September 2002. Accordingly the act gives details of registration number, commercial name, active ingredient and the permitted level of the active ingredient (Annex2). This indicates the number of prohibited pesticides so far is 31 containing 24 active ingredients and the numbers of restricted/limited pesticides are 107 that contain 90 active ingredients. For household pest control there are 107 chemicals containing 38 active ingredients while number of permitted pesticides are 398 having 90 active ingredients.

However, in comparison to the WHO list of moderately hazardous active ingredients, there are 25 in Sri Lanka's permitted pesticides, according to the gazette. However in some pesticides, the permitted dose is given in the percentage, whereas in the WHO list the dose is given in mg/kg. Therefore further investigations are required to state whether they are at risk level.

Alternatives and/or bio pesticides available, if any:
There are alternatives for both pest & weed control. But the people are opposed to use these giving several reasons such as
- Lack of ingredients such as Neem leaves to produce adequate amount of pesticide
- Time consumption
- Difficulty in application for large paddy areas
- Less effectiveness.

Health and environmental effects of the pesticides:
According to the Paper published in 1987 on “Survey of acute pesticide poisoning among agricultural workers in four Asian countries” carried out by Jayaratnam, Lun and Phoon, In Sri Lanka The major class of pesticides responsible for poisoning among patients admitted to the hospitals are organophosphorus compounds (69.1 % of cases). In the same paper reasoning of pesticide poisoning is given as Occupational-30%, Non-occupational-27%, Suicide-34%, Homicide 3% out of total 94 patients studied.\(^1\)

In 1989 Karallyadda and Senanayaka in their study on “Organophosphorous insecticide poisoning” sites that “Organophosphorous insecticides account for more than 50% of all acute poisonings in hospital practice in Sri Lanka”.\(^2\)

Idwien et al. record in their study on “Neurological symptoms among Sri Lankan farmers occupationally exposed to acetylcholinesterase-inhibiting insecticides” published in 2003, that “Twenty-four percent of surveyed farmers had suffered at least once from acute pesticide poisoning. Farmers showed significantly more inhibition of cholinesterase activity than controls. Acute symptoms indicative for exposure to cholinesterase-inhibiting pesticides were associated with farming and a higher degree of cholinesterase suppression (more than 13% inhibition). Integrated Pest Management (IPM) training seemed to result in less insecticide use and less cholinesterase inhibition”.\(^3\)

\(^1\) [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2491026/pdf/bullwho00075-0093.pdf](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2491026/pdf/bullwho00075-0093.pdf)

\(^2\) [http://bja.oxfordjournals.org/content/63/6/736.extract](http://bja.oxfordjournals.org/content/63/6/736.extract)

In addition, with regard to the pesticides most of the recent studies focus on heavy metal contamination that can be caused by usage of agrochemicals.

Jayasumana et al. in their paper on “Presence of Arsenic in pesticides used in Sri Lanka” mention the hazardous effects of Arsenic on both environment and people as; “It has serious environmental impacts like the destruction of fish, bird wildlife and the quality of the habitat. The increase of cancer, chronic kidney disease, diabetes mellitus, heart diseases suppression of the immune system, sterility among males and females, neurological and behavioral disorders, especially among children, has been attributed to chronic arsenic poisoning”.

Jayarathnam in his paper on “Acute Pesticide Poisoning: A Major Global Health Problem” gives the table below indicating the deaths related to pesticides between 1984-1988. It is seen that 9-12% of deaths out of the deaths recorded in the hospitals were caused during this period of time.

“TABLE 4: HOSPITAL ADMISSIONS FOR PESTICIDE POISONING, SRI LANKA, 1984-1988

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>16 085</td>
<td>1 459</td>
</tr>
<tr>
<td>1985</td>
<td>14 423</td>
<td>1 439</td>
</tr>
<tr>
<td>1986</td>
<td>14 413</td>
<td>1 452</td>
</tr>
<tr>
<td>1987</td>
<td>12 841</td>
<td>1 435</td>
</tr>
<tr>
<td>1988</td>
<td>12 997</td>
<td>1 524</td>
</tr>
</tbody>
</table>

Source: Ministry of Health, Sri Lanka

The book written by Krishna Wijebandara gives the following information on pesticide poisoning. “According to the given information on hospitalization in year 2000 Annual Health Bulletin, diseases of gastrointestinal tract, respiratory system, blood circulation system are mainly distributed in main agricultural districts thereby people are highly vulnerable to the effects of pesticides”.

Indoor Morbidity Statistics by Broad Disease Groups, in ANNUAL HEALTH STATISTICS – 2007 records 1 148 deaths out of 17 723 hospitalizations due to Toxic effects of pesticides.

Information on pesticide levels in the environment, in food, or in people: Recent studies for levels of pesticides in environment, food or people were not found.

Existing pesticide legislation in your country:

With the open import policies, the doors were left wide open for unscrupulous traders to import hither to the prohibited products as well. At that time with the agitation and lobbying by the department of agriculture and other governmental and nongovernmental bodies, the pesticide legislation was enacted in 1980. It is the main act to deal with pesticides in the country.

Control of pesticides Act No. 33, Adopted in 1980 is an act to provide for the licensing of pesticides; to regulate the import, packing, labeling, storage, formulation, transport, sale and use thereof; for the appointment of a licensing authority for pesticides; for the establishment of a Pesticides Formulary Committee.

The gazette extraordinary no. 1254/8 of 18th September 2002 gives the names of prohibited, limited and permitted Pesticides in Sri Lanka.

Also Customs Ordinance, National Environmental act and Consumer affairs Authority act regulate hazardous and toxic chemicals.

Agriculture is the main sector that applies all kinds of pesticides in addition to the household pest management.

All the relevant legislation/policies/plans/strategies influencing the development of agriculture based on the National agricultural policy for food and export Agricultural crops and floriculture done by the Ministry of Agriculture Development and Agrarian Services are indicated in the National Climate Change Adaptation Strategy for Sri Lanka.

There are seven main legislations that govern the agricultural sector;
- The Agriculture And Agrarian Services Act 1999,
- Agrarian Development Act No. 46 Of 2000,
- Irrigation Ordinance No. 32 Of 1946; Irrigation Act No. 1 Of 1951 and its subsequent amendments,
- Soil Conservation Act No. 25 Of 1951; amended in 1996,
- Plant Protection Act No. 35 Of 1999,
- The Seed Act No. 22 Of 1980,
- Control of Pesticides Act No. 33 of 1980.

Also seven other legislations having an impact on the agriculture
- The National Environmental Act No. 47 Of 1980 and the amendment No. 56 Of 1988,
- Coast Conservation Act No. 57 Of 1981, and amendment No. 64 Of 1988,
- Felling Of Trees Control Act No.9 Of 1951,
- Urban Development Authority Law No. 37 Of 1978, as amended by subsequent Acts, the recent ones being Act No. 44 Of 1984 And Act No. 4 Of 1992,
- Flood Protection Ordinance No. 4 Of 1924,
- The State Lands Ordinance No. 8 Of 1947 and amendments,

Also, there are three other policies;
- The National Policy On Agriculture Of 2002,
- The National Livestock Policy,

Use of IPM and ecological agriculture:
Integrated Pest Management was not observed among the farmers in the study. Ecological agriculture or organic farming is practiced by only few farmers. When agricultural lands are located all together, one or few farmers converting to organic farming is not enough.

However, there are programs to encourage organic farming such as giving them a market under certain conditions to be maintained.

According to the National Climate Change Adaptation Strategy for Sri Lanka, there is a special project of the DOA (Department of Agriculture) that promotes organic agriculture for both the local and the export market. The Integrated Plant Nutrition System (IPNS) has been initiated by the DOA in order to reduce the use of artificial fertilizer.

Project Outcomes:

Description of the activity conducted to reduce the threat posed by highly hazardous pesticides and advance this SAICM aim.
The priority was given to conduct medical clinics for pre-identification of CKDDue (Chronic Kidney Disease of unknown etiology) patients as it is believed to be caused by contaminated
water. It is the current concept that pre identification of the disease helps to stop the kidney damage at the damaged point and thereby prevent death cases due to this disease.

Medical clinics were conducted in Anuradhapura (Padaviya Fig.1), Polonnaruwa (Hingurakgoda fig.3) and Ampara Districts (Dehiattakandiya Fig.2). Discussions were made with the MOH (Medical Officer of Health) doctors of Hingurakgoda, padaviya and the DMO (District Medical Officer) of Dehiattakandiya in order to obtain dates for conducting medical clinics.

Clinics were conducted in different ways. Blood test for sugar level, blood pressure and BMI (using height & weight) was measured and suspected people were referred to the hospital. In some clinics screening was done using a simple urine test.

Figure 1 Clinic conducted at Padaviya (collecting urine samples for testing)

Figure 2 Clinic conducted at Dehiattakandiya (measuring blood pressure)

Figure 3 Blood testing at the clinic conducted at Hingurakgoda
In the former clinical program done, at Anuradhapura in 2009 only about 6% of diseased was traced, but by today it has been increased up to about 11%.

Table 1. Numerical elaboration of attendants for medical clinics

<table>
<thead>
<tr>
<th>Place of the clinic</th>
<th>Total attendants (#)</th>
<th>Suspected / referred to hospital (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hingurakgoda</td>
<td>208</td>
<td>24</td>
</tr>
<tr>
<td>Dehiattakandiya</td>
<td>152</td>
<td>08</td>
</tr>
<tr>
<td>Anuradhapura (Padaviya)</td>
<td>2952</td>
<td>185</td>
</tr>
</tbody>
</table>

During this project several groups of farmers were given a questionnaire in order to find out their practices in farming, especially on the usage of pesticides. The work on the questionnaire was done in small groups in order to grab everybody’s attention. In addition each question was explained before filling up thereby to obtain clear information. Details of the workshops are given in table 2.

Table 2. Details of the awareness workshops conducted

<table>
<thead>
<tr>
<th>Place of the workshop</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehiattakandiya</td>
<td>23/04/2012</td>
</tr>
<tr>
<td>Nagaswewa</td>
<td>15/06/2012</td>
</tr>
<tr>
<td>Sooriyapokuna</td>
<td>16/06/2012</td>
</tr>
<tr>
<td>Hungamalagama</td>
<td>16/06/2012</td>
</tr>
<tr>
<td>Mahawanawela</td>
<td>16/06/2012</td>
</tr>
<tr>
<td>wahamalgollawa</td>
<td>23/06/2012</td>
</tr>
<tr>
<td>Rambawa</td>
<td>23/06/2012</td>
</tr>
<tr>
<td>Mylankulama</td>
<td>22/08/2012</td>
</tr>
<tr>
<td>Kumbukwewa</td>
<td>22/08/2012</td>
</tr>
<tr>
<td>Ruwanpura</td>
<td>23/08/2012</td>
</tr>
<tr>
<td><strong>TOT training</strong></td>
<td></td>
</tr>
<tr>
<td>Bakmeedeniya</td>
<td>23-25/04/2012</td>
</tr>
</tbody>
</table>

The participants of the survey were mostly men that engaged in paddy cultivation and few women that mange home gardens. Most of the participants had schooling only up to primary education. 61% of them had engaged in cultivation for more than 25 years and initiated cultivation as a practice of the family. They have experienced all kinds of diseases in their
cultivation. Most of them identify the disease by their own experience, secondarily through an agrarian officer.

In the study group 53% of participants use agrochemicals while the rest would go for either natural or traditional pest control mechanisms. Among those who use agrochemicals, the majority (42%) choose the chemical by their experience while about 32% of farmers take advice from the agricultural officer. About 16% agreed that they take the advice of the shop keeper in selecting the pesticide. However 50% of them said they read the dose from the label and most of the others (24%) apply by experience, as they have been using the same chemical over years. Application of weedicide is often a practice but other chemicals such as pesticides (insecticides, fungicides) are only applied when such disease is observed. Yet in conversations it was revealed that recently farmers started to apply chemicals in order to dry off the paddy stem, thereby to make easy for harvesting. In some places good practices for storage and disposal of pesticide bottles were observed such as, either bringing the pesticide only when necessary and otherwise keeping it buried in the paddy field or locked up in a box. After usage they keep them aside and either sell or bury. But in some places bottle collectors were found to sell them to bakeries to use them in producing heat. Additionally, in some areas separate barrels were provided by companies to collect the empty bottles.

TOT was carried with participation of the members of village farmers associations where they share the knowledge with association members. This workshop mainly targeted raising awareness on pesticides, usage and its ill effects.

The current Pesticides act was used to introduce the prohibited and limited pesticides. This raised much curiosity in people as they were completely unaware of this act and were depending on either the Agricultural officer or the shop keeper in selecting pesticides. Furthermore it was decided to nominate “Green Stores” that sell standard pesticides by knowledgeable sellers that will make available safer pesticides for people. However this process is still on the developing stage.

**Impact on target groups:**
After each session of awareness-raising, farmers agreed with the fact that pesticides affect the health and also that protective ware should be worn. They were keen to know whether their pesticide is listed under the limited or banned pesticides. It was some of their idea that government should ban the toxic pesticides and make available of safer products. Some farmers provided us with information on alternative natural pesticides.

**Impact on target policies:**
Although CEJ had appealed for the justice of the court by the time of commencing this project, it must be mentioned that people’s opinions and support developed through dealing with other parties throughout the implementation of this project did strengthen the position of CEJ in the court case.

CEJ filed an application on 02.08.2011, in the Court of Appeal seeking an order in *writ of mandamus* against the **Registrar of Pesticides, Central Environmental Authority, Commissioner General of Agrarian Development, Consumer Affairs Authority and Honourable Attorney General**. Pesticides imported to Sri Lanka contained harmful constituents such as **Arsenic, Mercury** and other heavy metals, and these unauthorized pesticides are imported by submitting forged and illegal data and documents to the Sri Lankan Authorities. Therefore the application asks to reform the law for such contaminated pesticides, to make them unable to import and distribute.
Now the case is in the settlement stage and the Attorney General’s Department has been taking instructions from the relevant Government Authorities, which mentioned, as the Parties to the case, to prepare regulations on importing pesticides.

High Court Writ Action was also filed by CEJ seeking for a Writ of mandamus against the Respondents for compelling them not to release the pesticide containers that contain arsenic (which is harmful for human health) at customs, as that was necessary due to the situation in the country. Considering the circumstances, first time, an interim order was issued by the High Court, stopping the activities which have been taken to release arsenic containers from the Customs Department and if, released from Customs Department, banning the delivering those pesticides to the market. The government authorities (Including Customs Department) couldn’t comply with the court order, as they have already released those containers to the market, and now the Court has directed the relevant authorities to submit a report to the Court on the harmful effects of arsenic, if it is included in pesticides that people use.

**Outreach to stakeholders:**
Since pesticide usage is the practice of farmers, it was decided to reach out to farmers initially to raise awareness on hazards of pesticides, wrong practices in using pesticides, illegal pesticides etc.

Secondly, pesticide sellers were reached out to in order to make safer agrochemicals with alternatives available. The “Green Store” concept.

**Deliverables, outputs and/or products: Annex 1**
- Survey form
- File cover made for Clinics
- Leaflets on:
  - Effects of Arsenic and Cadmium
  - Alternatives to agrochemicals
  - Need of participation in health clinics
- Paper articles
- Press releases

**Communication Efforts:**
The observations made during field visits were often shared with the farmers; for example, hazards of pesticides use, negative practices and especially the issues regarding CKDue patients.

A media conference regarding the CASE NO.CA Ap 531/11 on “seeking an order in writ of mandamus against the Registrar of Pesticides, Central Environmental Authority, Commissioner General of Agrarian Development, Consumer Affairs Authority and Honourable Attorney General” organized by Centre for Environmental Justice (CEJ) was held at Hotel Nippon on 09th August, 2011 from 2pm to 4pm.

**SAICM National Focal Point:**
Secretary, Ministry of Environment, government of Sri Lanka

**NGO Recommendations for next steps:**
With regard to the medical clinics it is recommended to conduct more medical clinics for pre-identification of CKDue patients.

Supplication of purified water for drinking and cooking purposes was found to be an essential step to implement at its earliest.
Annex 1

- Survey form

![Survey form](image)

**Figure 4. Format of the survey form page 1**

Leaflets on:
- Effects of Arsenic and Cadmium
  
  This brochure explains about the hazardousness in usage of pesticides, what Arsenic is, its health effects, about Cadmium and its health effects.

![Brochure on effects of Arsenic and Cadmium on health.](image)

**Figure 5. Brochure on effects of Arsenic and Cadmium on health.**

- Alternatives to agrochemicals
The brochure gives details on alternatives to agrochemicals and methodologies of application. This also contains the names of prohibited pesticides.

Figure 6. Brochure describing about alternatives to agrochemicals and prohibited pesticides.

- File cover made for Clinics
  This is to be used in the clinic as a personal file cover with the information on how to use medicine and things to be brought.

- Need of participation in health clinics
This flyer gives information on the CKDue (Chronic Kidney Disease due to unknown etiology), its distribution and the seriousness of it. Thereby it highlights the necessity of participating in the clinical programs and what people should be doing.

Figure 7. Flyer for clinics
- Paper articles

Figure 1. Paper article on CEJ’s legal action.
- Press releases
Figure 3. Press release on case at the Court of appeal
Annex 2

Government gazette notification

Figure 8 gazette extraordinary no. 1254/8 of 18th September 2002.