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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: Study, Awareness Raising and Capacity building about Electronic Waste in Nepal
NGO: Center for Public Health and Environmental Development (CEPHED)
Country: Nepal
Date: February 2011

Elements of SAICM Covered:

Activities relating to identification and assessment of where issues relating to the sound management of chemicals arise during the lifespan of electrical and electronic products, including the design of such products, green chemistry, recycling and disposal, in particular in the context of the requirements of the Basel and Stockholm conventions, participation in the workshop on electronic waste be held in the margins of the meeting of the Open-ended Working Group meeting of the Basel Convention and follow up recommendations and options for the SAICM OEWG and ICCM3 (ICCM2 decision II/4)

Definition of e-waste and near end of life items and the hazardous chemicals contained in them:

Electronic waste or E-waste, for short, is a generic term embracing various forms of electric and electronic equipment that have ceased to be of any value to their owners. There is not yet a standard definition of e-waste; however, the table below lists the few accepted definitions.

Table 1: Definitions of E-waste.[1]

EU WEEE Directives (EU, 2002a)	Electrical or electronic equipment which is waste… including all components, sub assemblies and consumables, which are part of the product at the time of discarding. Directives 75/442/EEC, article 1 (a) defines waste as any substances or object which the holder disposes of or is required to dispose of pursuant to the provisions of natural law in force.
Basal Action Network(Puckett and Smith, 2002)	E-waste encompasses a broad and growing range of electronic devices ranging from large household device such as refrigerator, air conditioner, cell phones, personal stereos and consumer electronics to computers which have been discarded by there users.
OECD, 2001	Any appliances using a electric power supply that has reached its end of life.
Sinha, 2004	An electrically powered appliance that no longer satisfies the current owner for its original purpose.
StEP, 2005	E-waste refers to the reverse supply chain which collects products no longer desired by a given consumers and refurbishes for the consumer, recycles or otherwise processes waste.

CHEMICALS CONTAINED IN E-WASTE:

E-waste has been emerging as a new problem and issue of concern for everybody. Though being new, it has been raised as a disturbing problem for a future. As we are becoming more dependent on electronic products to make life more convenient, the used obsolete products are growing. These products contain harmful chemicals like: Lead, Cadmium, Mercury, Plastics, Barium, Beryllium, Phosphorus and additives. So, if they are not disposed of or recycled properly, these toxic materials can create health as well as environmental problems.

Every new electronic product is future waste. E-waste contains more than 1000 different substances and chemicals, many of which are toxics and are likely to create serious problems.

The table below shows where in the EEE the toxic substances are used and their effects on health.

Table 2 : Toxic substances in EEE and its effects.[2]

Toxic substances	Used in	Effects
Lead	1. Used in the glass panels and gaskets in computer monitors. 2. Solder in printed circuit boards and other components.	Damages central and peripheral nervous systems, blood systems, kidneys and reproductive systems in human.
Cadmium	Occurs in infra-red detectors and semiconductors chips. Some older cathode ray tubes contain cadmium.	It mainly affects kidneys.
Mercury	Thermostats, sensors, relays, switches, medical equipment, lamps, mobile phones and batteries.	Damages organs including brain, kidneys and foetus.
Plastics	Mainly used in PVC (PVC elements are found in cabling	When burn it produces hydrogen chloride gas which

[1] Global Perspective of e-waste. R.Widmer et al. / Environnemental Impact Assessment Review 25 (2005). Page : 436-458

[2] Toxic link, E-waste in India.

	and computer housing.)	combine with water and form HCL; cause a respiratory problems.
Barium	Used in computers in the front panel of a CRT, to protect user from radiation.	Causes brain swelling, muscle weakness, damages heart, liver and spleen.
Beryllium	Commonly found on motherboards and finger clips.	Causes lung cancer and skin diseases.
Phosphor and additives	Applied as a coat on the interior of the CRT faceplate.	Damages kidneys.

Toxins do not respect geographical boundaries. When electronic waste (example: computer casings and parts) are burned for energy or to "mine" copper or gold, heavy metals and substances are released into the atmosphere. Toxic gases like dioxins and furans can travel across oceans and continents in a matter of days and persist in the environment.

If the electronic waste is dumped into waste stream banks and landfills, the toxins present in e-waste may percolate or leach down into the ground water tables along with the rain water or surface water, thus contaminating it and making it unfit for drinking purposes. Similarly, if they are released as effluent into lakes, ponds, streams and rivers, they can kill the aquatic animals and biota.

Description of the situation with regard to e-waste that is generated in the country vs. waste that enters the country:

There was not any recorded data or published reference publications about e-waste generation in the country available; hence, this is the first attempt to gather first-hand information about waste generation and waste that comes in from outside the country. A very rigorous field visit, as well as desktop study, were made to gather information and develop the IEC materials on e-waste in the form of a briefing paper, posters, etc. that has been under circulation. We have recently completed the first national workshop on Electronic Waste in Nepal jointly with the Solid Waste Management and Resource Mobilization Center (SWMRMC) of Ministry of Local Development of Nepal. In addition to our study results, we were not able to locate the entry of e-waste from other countries, but its presence cannot be denied.

Analysis of Data from Custom Department:

The record managed by Department of Custom (DOC) was used for analyzing the trend of import of electrical and electronic equipment in Nepal from different routes. The detailed list of EEE imported in Nepal is given in Annex: Table 15.

Televisions

Television has become a part of daily life. Before 1985, it is estimated that there were only 400 televisions in the country for watching videos and some of the receiving channels from India[3]. Initially Nepal television was established in January 1985 as a project and broadcasting regular programs for two hours a day was started from the end of 1985[4].

In the case of Nepal, televisions are mostly imported from other countries and some are assembled in the country. Recently, a few companies in Nepal have started manufacturing. Following are the data received from DOC relating to the import of television and television parts in Nepal from the year 2057/058 (2000/01) to 2062/063 (2005/06).

[3] MOEST 2008, Report on identification and Quantification Products that will convert into E-waste in Nepal.
[4] NTV Web-site: www.explorenepal.com/ntv

Table 3: Import of Television and Television parts from the year 2057/058 to 2062/063.

Fiscal Year	057/58	058/59	059/60	060/61	061/62	062/63	Total
	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
TV	65,316	65,134	71,798	109,194	145,577	245,908	702,927
TV, Radio Parts	1143839	1339262	4302153	1405565	1130021	323607	9644447

Source: Compiled from the information of Department of Customs

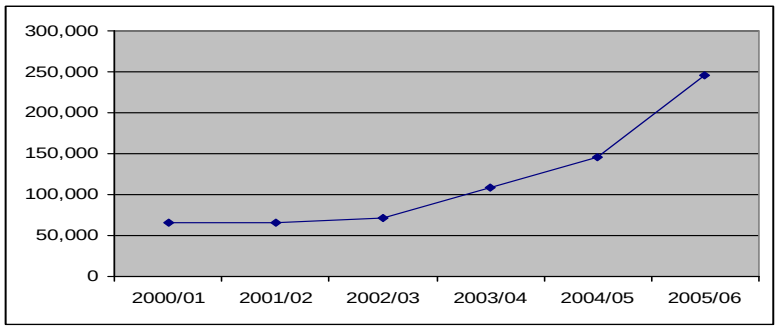

Figure 1: Import of Television.

While depicting the import data into the graph the above figure was generated- this clearly shows that the trend of import is increasing each year.

Computers

Computers are used in every sector nowadays. They are used in the domestic sector, commercial sector, industrial sector, media houses, etc. In the case of Nepal, Mainframe computers entered into Nepal in 1971 for the population census of same year. Then in 1974, the National Computer Center was established.

With the growth of the IT industry in Nepal, the use of computers is also increasing. Basically, it has become the need of today's generation. The import data of computers and computer parts in Nepal from the year 2057/058 (2000/01) to 2062/063 (2005/06) is given in table below.

Table 4: Import of Computers and Computer parts from 2057/058 to 2062/063.

Fiscal Year	057/58	058/59	059/60	060/61	061/62	062/63	Total
	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
Computer	37,073	26,526	20,777	46,566	25,238	216,713	372,893
Computer Accessories	7,533,276	1,219,875	851,538	1,325,175	3,284,255	29,496	14,243,615
Computer Monitor		22,546	3,035	73,310	46,828		145,719

Source: Compiled from the information of Department of Customs

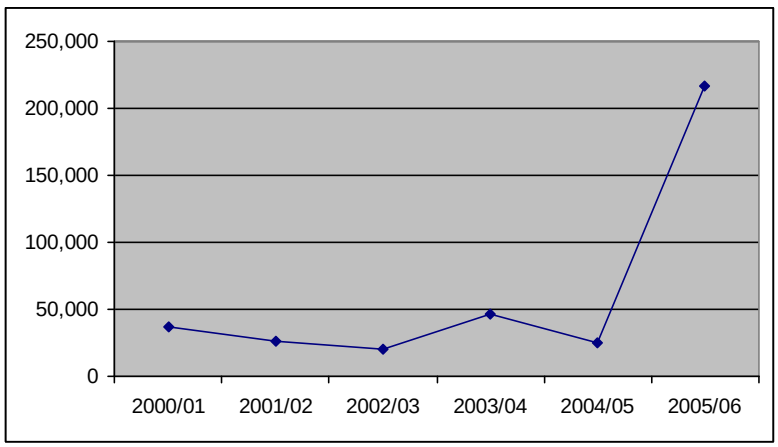

Figure 2: Import of Computers

The graph above replicates that the trend of computer imports have steadily increased from the year 2004/05 (2061/062 B.S.).

Note: *This figures only covers the data recorded with the custom department- there is a policy about the importation of electronic products while traveling abroad for Nepalese citizens. If a person stays more than a week abroad, s/he is entitled to carry back a laptop and other house-hold electronic products. This mostly gets into the country unrecorded.*

Mobile Phones

Communication sectors have made the world so small. In the context of Nepal, the telecom sector is the only sector that has a good growth rate despite of the country's political instability. Telecommunication was started in Kathmandu in 1913 but telephone distribution to the general public was initiated from 1915. STD service was commenced from 1984 and 1999 saw the launching of GSM Mobile services[5].

According to the report entitled "Nepal Telecom, Mobile Internet forecast" released in October 2010, the total number of mobile subscribers is over 10.0 million, with the annual growth rate over 30 percent in the year 2010[6].

The fixed line penetration is still low at 2.46%. And the gap between fixed line penetration and mobile penetration is still getting wider. Mobile service in Nepal has shown the whopping growth of 1.67%[7]. The import data of telephone and mobiles are given in the table below:

Table 5: Import of Telephone and Mobiles from 2057/058 (2000/01) to 2062/063 (2005/06).

Fiscal Year(Nepali year /English Year)	057/58	058/59	059/60	060/61	061/62	062/63	Total
	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	
Telephone Equipment	16754340	477690	15745333	1500973	1301300	444639	36224275
Telephone parts						356092	356092
Telephone Set	287,285	321,558	335,920	409,910	1,047,654	251,145	2,653,472
Pager, mobiles, wireless phones	52399	2785	952	0	26208	28661	111005

Source: Compiled from the information of Department of Customs

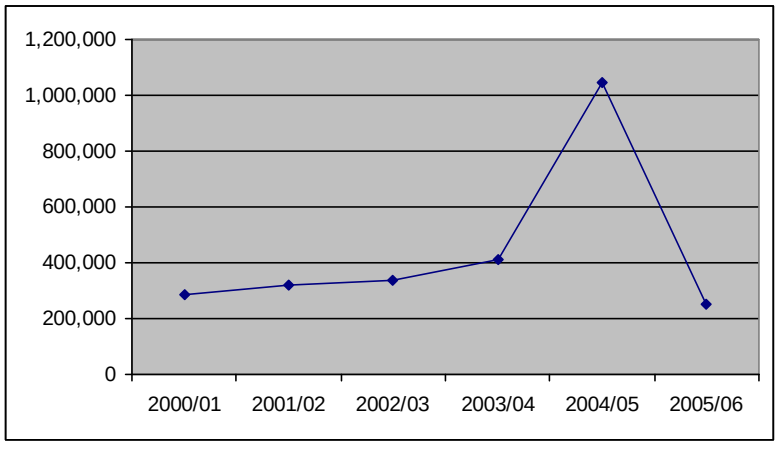

Figure 3: Import of Telephone Sets.

[5] MOEST 2008, Report on identification and Quantification Products that will convert into E-waste in Nepal.
[6] http://www.reportlinker.com/p0312066/Nepal-Telecoms-Mobiles-Internet-and-Forecasts.html.
[7] SACEP and Development Alternatives. 2007. Position Paper on e-waste Management In South Asia.

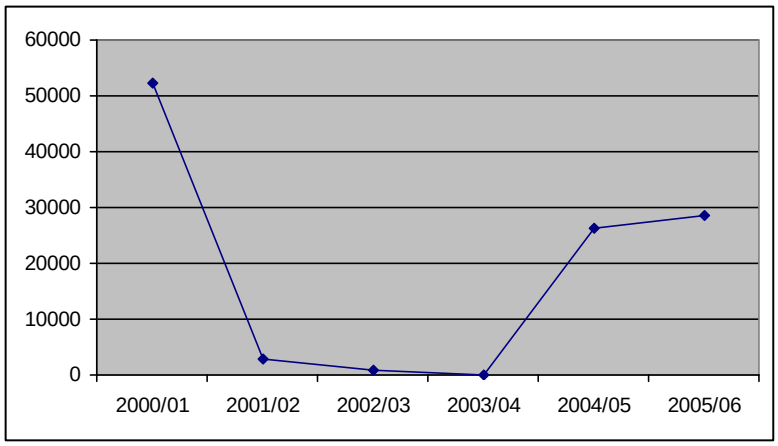

Figure 4: Import of pagers, mobiles and wireless phones.

According to the graph above, the import of telephone sets shows a decreasing trend, while the import of mobiles and wireless phones shows an increasing trend. This concludes that mobile phones are popular among consumers and therefore, its demand is increasing as well.

Probable E-waste generation in future:

Waste Generation from Televisions

Considering the import data on televisions, the average weight of televisions (23 Kg) and the average life span (10years), and assuming 25% of the average weight is used for refurbishing (75% is generated as waste by weight), the following figures of waste generation can be drawn at the end of life.

Table 6: Probable waste generation from televisions.

Years (BS) / English Year	067/68 (2010/2011)	068/69 (2011/2012)	069/70 (2012/2013)	070/71 (2013/2014)	071/72 (2014/2015)	072/73 (2015/2016)
Waste generation in future	1126701 Kg	1123561.5 Kg	1238515.5 Kg	1883596.5 Kg	2511203.25 Kg	4241913 Kg

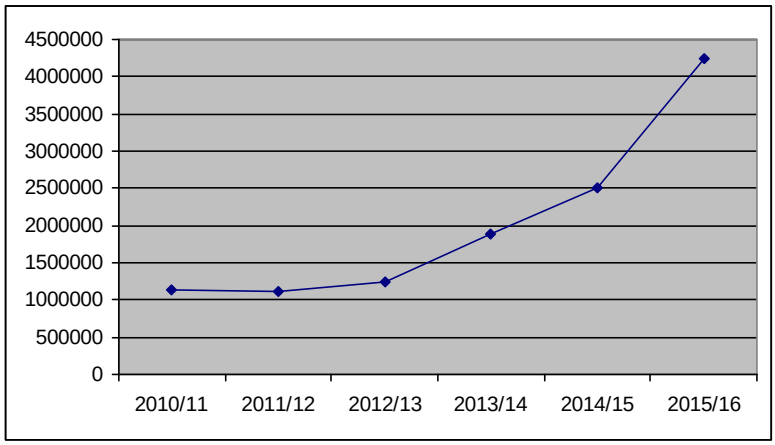

Figure 5: Waste generation from televisions

This shows that after 10 years of use from the import year, the amount of waste generated from televisions will keep increasing because each year the quantity of televisions imported has increased. The real evidence of the generation of waste from TVs are the appearance of different parts of TVs at scrap dealer businesses, as well as sometimes in the waste streams.

Waste Generation from Computers

To obtain the probable waste generated after the useful life of computers, let us consider the import data of computers, average weight (20 Kg) and average lifespan (5 years), and assume that 25 % of the average weight is used in refurbishing and 75% is discarded as waste. The following assumption for computer waste generation is then obtained.

Table 7: Probable waste generation from computers.

Years	062/063 (2005/2006)	063/64 (2006/2007)	064/65 (2007/2008)	065/66 (2008/2009)	066/67 (2009/2010)	067/68 (2010/2011)
Waste generation in future	556095 Kg	397890 Kg	311655 Kg	698490 Kg	378570 Kg	3250695 Kg

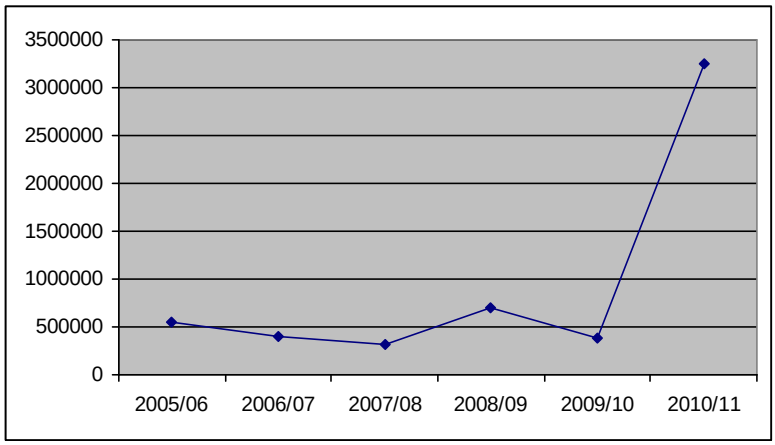

Figure 6: Waste generation from computers.

It can be concluded that if the same trend of import continues, then in near future discarded computer parts will occupy the largest section of electronic waste. The real evidence of the generation of waste from computers is the appearance of different parts of computers in scrap dealer businesses, as well as sometimes in the waste streams.

Waste Generation from Mobiles Phones

Regarding mobiles, it seems that, among the electronic devices used in Nepal, mobile phones have the shortest normal lifespan of about 1 to 2 years on average. And assuming 10 million subscribers using one handset of the mobile, it will generate 10 million discarded mobile sets after its useful life. The average weight of the mobile phone in the market was found to be from 200 to 300 gm.

Total e-waste generated from each item in the study.

Each of these items has a different normal lifespan and becomes obsolete within a different time period. So, considering this, the total e-waste generated from each electronic good at the end of its lifetime is given in the table below (this data is generated from electronic equipment imported till 2005/06 according to the data provided from the Custom Department, but till 2010 more numbers of goods have been imported in Nepal, which is not considered in the following table):

	Television	Computers	Mobiles
Total e-wastes	12125490.75 Kg= 12125.49 tonne	5593395 Kg = 5593.395 tonne.	10 million= 3000000 kg= 3000 tonne.

Description of the current practices for dealing with e-waste and near end of life electrical equipment:

Issues of electronic waste are still not taken seriously, as they have not so far been considered as one of the waste categories, despite the fact that all municipalities have been receiving waste collected from city households and business centers that contain some e-waste. As I have said, this is the first research and reporting on e-waste in Nepal, and it tries to summarize the first-hand experiences of current practices adopted for dealing with e-waste and near end-of-life management of electrical and electronic equipments. We were able to made observations as well as interview some of the dealers, retailers, and local government institutions dealing with the waste, repairs and maintenance shops, people engaged with waste collection, transportation, handling, transforming and even processing of the e-waste in all these four megacities of Nepal.

The following section describes the current practices of dealing with e-waste and near end-of-life management of electrical and electronic waste in Nepal.

E-waste Practices in four Cities of Nepal:

Nepalgunj

Nepalgunj is one of the big municipalities of Nepal and is situated in the far western part of Nepal, bordering India. According to the authority of Nepalgunj Municipality, 20-22 tons of waste is collected per day from the municipal areas. The Nepalgunj Municipality has developed an "Integrated Sustainable Waste Management Plan," but there isn't a specific provision or planning to manage e-waste. The Municipality opens the tender to sell the collected e-waste. Besides this, according to the Municipality, the fused tubes collected from the street lights are used in the Hindu and Muslim festivals (Mohharam).

The Municipality provides the license for the electronic dealers and retailers as well as kawadiwala (waste) dealers who collect the e-waste from the mobile kawadiwala under the revenue section to deal with electronic goods. Almost 150 kawadiwalas are in Nepalgunj. Theses kawadiwalas export the e-waste to the Indian market Rupaidiha. The major e-waste collected by the kawadiwalas were televisions, monitors, telephone sets, table fans, refrigerators, etc. The registered kawadiwalas have to pay Nrs 1500 per year as revenue to the Municipality. In total, Nrs 2,25,000 (about 3215 US$) is collected as revenue by the Municipality from the kawadiwalas.

After the processing of e-waste, it mostly goes to the Indian market Rupahidia and to the industrial area of Nepalgunj. They mostly extract iron, glass and plastics parts form the collected e-waste. Regarding the health issue, kawadiwalas have not reported any kind of health problems from their work, according to our questionnaire survey.

Many of the kawadiwalas are not aware of the presence of toxic substances in the e-waste. Very few knew that needles from hospitals are dangerous and acid in electronic and electrical equipment is risky to handle. The kawadiwala earn rupees 100 to rupees 500 (US$ 1.5 to US$ 7) per day by processing such e-waste. These e-wastes are generally recovered free hand without taking any precaution.

Table 8: Types, quantity and rate of purchase of wastes in Nepalgunj.

Types	Quantity/number	Rate	Remarks
Iron	10-50 Kg	18-22	Per day
Plastics	10-40 Kg	5-20	Per day
Copper wire	5-20 Kg		Per month
Refrigerator	1-3		Per month
Television/computer monitor	1-3		Per month

(Source: Market Survey)

It was observed that both assembled and branded products are available in the market. The market is largely occupied by Chinese products (mobiles, radio/tape, VCD/DVD player), as well as products exported from Korea (television, refrigerator) and India.

Table 9: Types of electronic device sold in Nepalgunj.

Type	Number	Country	Assembled	Branded	Remarks
Television	500-1000	Nepal, Korea	✓	✓	Per year
Desktop computer	200-250		✓	✓	Per year
Laptops	80-100			(Acer, Dell, Compaq)	Per year
Mobiles	300-350	Chinese, Nepal, India.			Per year

(Source: Market Survey)

Besides the above listed electronic devices, other equipment such as refrigerators (1000-1200/year), VCD/DVD players (100/year), and music systems (200-250/year) are available and sold in the market.

The availability of Chinese products with comparatively lower prices than others has increased its popularity among the consumers. So, the trend of buying a new product rather than repairing the old one is increasing. Some of the repair maintenance services in Nepalgunj have been providing their services for 25 years, and according to them there is 60% decrease in electronic equipment coming for repair and maintenance in comparison to the past five years. During this long period of service most of the people involved in repair and maintenance have experienced health problems such as headaches, eye pain, eye irritation, etc.

The devices that come for repairing is of a maximum of 10 years old. The parts that remain unused after refurbishing are usually sold to the kawadiwalas, which seems to be the final destination of any e-waste.

Kathmandu

Kathmandu is the capital city of Nepal and inhabited by about 1.5 million people. Informal interviews carried out in different government offices concluded that there are no provisions of license to import electronic equipment; *i.e.* it can be imported for business purposes or they can also be imported by single persons. For imports individually for household purposes, an individual has to inform and pay the necessary custom tariff to the government by bringing an approval letter to Department of Commerce from the Ministry of Information and Communication. However, data were not available.

No plan or activities towards environmentally sound management of e-waste were found via the contacted government officials from any concerned government authorities regarding e-waste and its management.

The largest market of the EEE is Kathmandu, being the business center for the whole country. A market survey shows that business has decreased in comparison to past years, but the consumers have not stopped buying EEE. Like other places, the market of Kathmandu is also occupied by Chinese products. Besides Chinese, the electronic equipment found in Kathmandu are from India, Singapore, Japan, Malaysia and others.

Since large numbers of electronic devices are used in Kathmandu, large numbers come for repairing. But, like other places, the people involved in repair and maintenance have not had training of management of e-waste nor are they aware of the health hazards from e-waste.

The one and only destination of discarded e-waste in Kathmandu seems to be kawadiwalas, and the other unsorted ones find their way to the general solid waste stream ended by the bank of rivers or temporary landfills sites. Kawadiwalas collect the remaining unused parts from repair

and maintenance shops. It does not seem that there is a fixed price to buy e-waste in Kathmandu, which entirely depends on the condition (whether it can be reused or it is of no use). As the metal recovery from these waste are completed, remaining parts go to places like Birgunj and Janakpur to be exported to the nearest Indian markets.

Table 10: Types, quantity and rate of purchase of wastes in Kathmandu.

S.N	Types of waste	Quantity	Amount	Price
1	Vehicle (dynamo, fan, battery)	100 ton	1 ton	14,000
2	Computer	100 piece	1 piece	12,000
3	T.V, Radio, VCD	Not fixed	1 kg	25-30
4	Water pump	Not fixed	1 quintal	Rs.250

Pokhara

Pokhara is another big and touristic city of Nepal. The number of tourists visiting Pokhara is increasing, along with the city population itself. So, it is understandable that to meet the need of the city dwellers, provide comfort and to attract the tourists, a large number of electronic and electrical equipment are imported, sold and used, which in the future turn into e-waste.

The exchange scheme for old electronic devices was observed only in some retail shops of Pokhara during the market survey. They usually separate the usable parts and sell rest unused parts to kawadiwalas. According to them, they collect such old devices *3 boras* each month and they earn 35,000 every 6 months.

Table 11: Types of electronic device sold in market of Pokhara.

Types	Number	Country	Assembled	Branded
Television	10-45/month	China, Nepal		✓
Computer	30-50/month	-	✓	✓
Mobiles	15-30/month	China, India		✓
Refrigerator	4-5/month	-		✓
VCD/DVD players	10-20/month	China		✓
Radio/tape	4-5/month	China, Malaysia		✓
Music system	2-3/month	Nepal, China		✓

(Source: Market Survey)

Responses from repair and maintenance shops reflect that the electronic devices that often come for repair in Pokhara are computers and mobiles in a ratio of 200:50 per month. All the equipment that comes for repair is not much older than 7 years. Refurbishing is practiced regularly in the area. The unused parts are then either thrown in garbage containers or sold to kawadiwalas.

The kawadiwalas separate the iron, copper and plastics from e-waste and the remaining are thrown in municipality vehicles. Metal recovery is done free hand without any protective measures, despite knowing that it is hazardous.

Table 12: Types, quantity and rate of purchase of wastes in Pokhara.

Types	Quantity/number	Rate	Remarks
Iron	500Kg	20-25/Kg	Per month
Paper	150Kg	15/Kg	Per month
Plastic	1 ton	5/Kg	Per month
Copper wire	10 Kg	10/Kg	Per month

(Source: Market Survey)

Biratnagar

Biratnagar is the second largest city of Nepal and is also known as an industrial citiy, as most of the industries' establishments and production units are located in this city (after Kathmandu).

Biratnagar municipality has a diverse population with different ethnicities and cultures. Most of the people residing in the area use electricity and electrical equipment to simplify their daily lives. So, it is obvious that there is generation of e-waste in the area. But the Biratnagar Municipality does not consider e-waste as a municipal waste and therefore there is no legal or technical provision to deal with e-waste, and it seems that there is no any plan to address e-waste in future either.

Every company needs to be registered to sell their products in Nepal. Approximately 250 dealers and retailers are registered in Biratnagar, but still thousands of them are yet to be registered. Market monitoring in Biratnagar municipality shows that the market is mostly covered by Chinese and then by Korean products.

Table 13: Types of electronic device sold in Biratnagar per year.

Types	Number	Country	Assembled	Branded	Remarks
Television	150	Korea	✓	✓	Per year
Computer	65	-	✓	✓	Per year
Mobile	300	Korea, Chinese, Indian	✓	✓	Per year
Refrigerator	300	Korean		✓	Per year

(Source: Market Survey)

The goods listed above are major electronic devices that have comparatively more demand in the market of Biratnagar. Except these, Chinese products like VCD/DVD players and music systems are also available in the market. Among these equipments, Indian devices frequently come for repairs whereas Chinese products rarely come for repair. The market survey shows that repairs charged for these electronic items has slightly increased from past years.

The devices that often come for repair are 5 to 15 years old. 50% to 85% parts of equipments are refurbished, depending on electronic devices, and then the rest are sent to kawadiwala as e-waste. During the study it was observed that people involved in repair and maintenance in Biratnagar had some health problem arising from their work such as eye irritation, backache, respiratory problems and skin infection.

The e-waste collected by kawadiwalas is usually broken to extract metals from it. After that the remaining parts are sent to different parts of Nepal, especially Birgunj, and to India. By processing theses e-waste the kawadiwalas in Biratnagar earn rupees 100-500/ day.

Table 14: Types of waste, quantity and rate of purchase in Biratnagar.

Types	Quantity/number	Rate	Remarks
Electronic equipment	4-8 Kg	Upto Rs. 24/Kg	Per month
Plastic	50-150 Kg	Upto Rs. 10/Kg	Per month
Paper	20-25 Kg	Upto Rs. 8/Kg	Per month
Computer parts	3-4 Kg	Upto Rs. 10/Kg	Per month
Battery	5-7 Kg	Depends on the quantity	
Wires, phone set, mobile	5-6 kg	Upto Rs. 10-20/Kg	Per month

(Source: Market Survey)

The following chart summarizes the flow of e-waste from equipment to waste conversion and reaching to the final destination.

1. FLOWCHART SHOWING THE GENERATION OF E-WASTE.

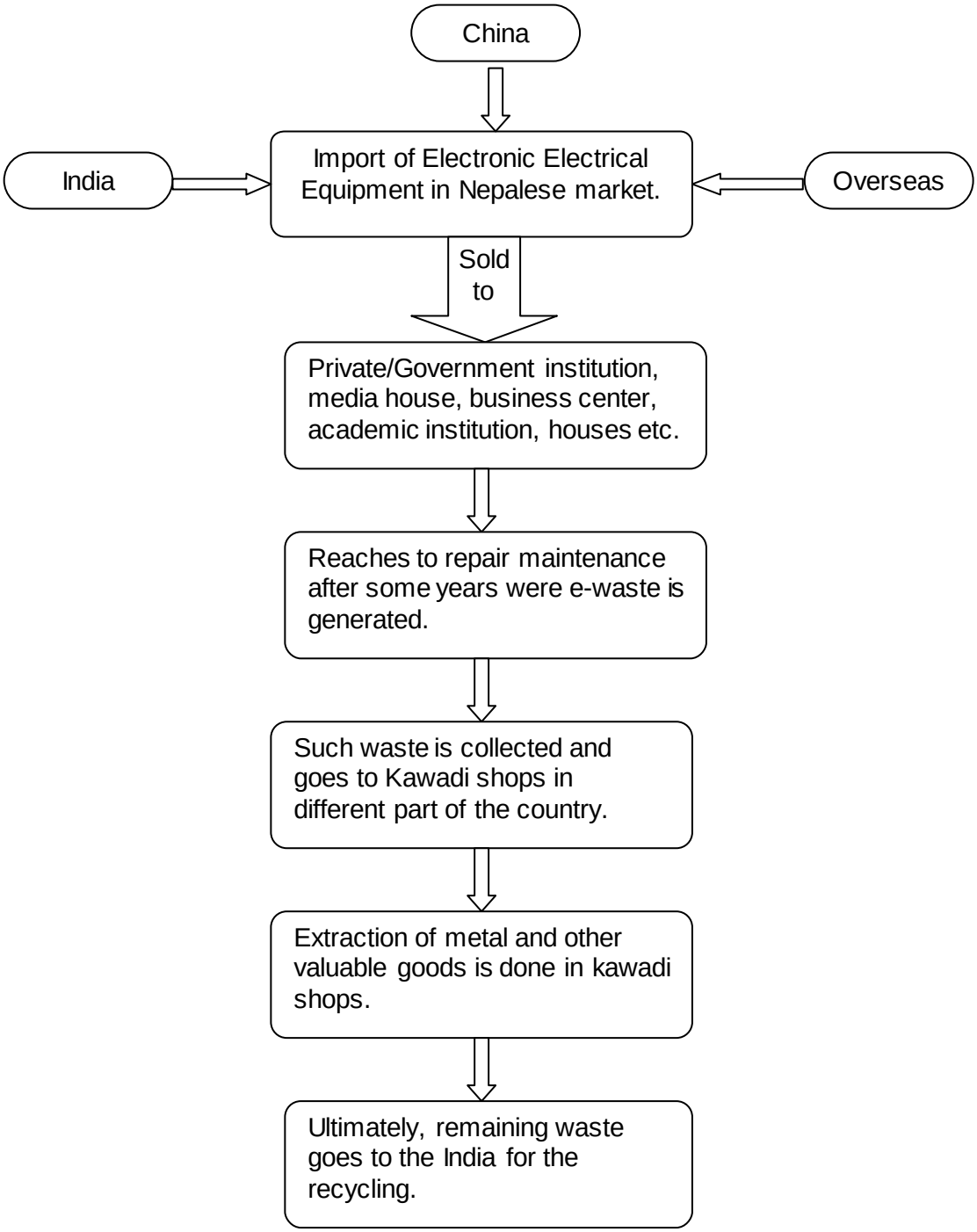

Figure 7: Flow diagram of e-waste generation.

Description of any contaminated sites that have resulted from e-waste:

As such there are no clearly identified contaminated sites declared. However, during this study and field visit we learned that there are numerous electronic and electrical scrap dealers and some identified communities in all urban area engaged in extracting valuable materials and resalable items from obsolete electrical and electronic items in very unhygienic manners, and hence there is a need to identify all these sites and do an environmental assessment (air, water, soil and biological sample testing) to clearly spell out such hotspots. However, with the current stage of study and observation, it can be definitely said that there some sites that might have contamination with several chemicals and toxics substances oozing out of electronics and electrical equipment in all major cities of Nepal.

Project Outcomes:

Description of the activity conducted

- Baseline study of e-waste and its management in Nepal
- Study report on e-Waste.
- Dissemination of the study report on e-waste through media release
- First national workshop on electronic waste

Deliverables, outputs and/or products:

- Baseline study report on e-waste and management practice in Nepal
- Workshop report

NGO Recommendations for next steps:

Rapid increase in the electronic industry and the use of EEE has created a waste crisis in the world that is going out of control and the same situation will arise in Nepal after a few years. The answer to this increasing e-waste crisis is not only finding the place to hide these wastes, but to strengthen the call for sustainable production, environmental justice and corporate and government accountability in order to achieve the goals in e-waste management.

Electronic wastes are very hazardous and, if not managed properly, create threats to health and the environment. There is no effective legislation to control and manage the e-waste in country. The survey shows that government and concerned authorities have not yet started to think of this issue. Thus, there is a chance that e-waste may become the largest waste stream after a few years in Kathmandu, causing health and environment problems.

According to this study and considering the import data provided from Custom Department , the total e-waste generated by the three goods (televisions, computers and mobiles) under this study is 12125490.75 Kg, 5593395 Kg, 10 million (in number) respectively.

Different programs and studies have been carried out regarding e-waste in other countries. But in the case of Nepal, the word “e-waste” still seems to be a very new term. People have not realized that whatever EEE they are using can be a waste. This is because there are not many studies or reports or articles published awakening the public about the hazardous characteristics of e-waste. The awareness level regarding the e-waste in Nepal is nil. These circumstances have been created because no any stakeholders or any other responsible authorities have taken steps towards its management.

However, the e-waste problem is in the preliminary stage in Nepal and it is not too late to think about its management. As it is said that “***prevention is better than cure***” the government and concerned authorities must start to think about environmentally sound management of e-waste as well as end-of-life management of all kinds of EEE along with their import, sale and distribution.

Based on the study, the following are some of the recommendations made to be adopted by the concerned stakeholders, especially concerned government authorities.

- To reduce consumption by repairing the old EEE or by purchasing long life equipments.
- Detailed inventories of each kind of e-waste need to be carried out at a national scale.
- Municipalities, as well as Ministry of Local Development and Ministry of Environment, should take the lead to do complete inventories of e-waste, and there is an urgent need to deal with the e-waste by having proper collection and safe disposal mechanisms in place.
- Recycling of e-waste in environmentally sound manner should be promoted.
- Rules and regulations regarding purchasing, handling and dumping e-waste should be developed and enacted.

- Since the waste stream is very dangerous and causes serious threats to health and environment, e-waste should be categorized under the hazardous waste stream.
- Different campaigns and awareness-raising programs need to be carried out to make people aware of e-waste and its impact on both health and environment.
- All the sectors that handle e-waste and obsolete electronic devices need to be given special capacity-building training to handle and to manage e-waste.
- Studies regarding impacts of e-waste should be carried out and published.
- There is a need to identify all contaminated sites and do an environmental assessment (air, water, soil and biological sample testing) for the identified contaminated sites.