ELECTRONIC WASTE STATUS IN JHARKHAND

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Abstract:

Technological advancement, increase in purchasing power of consumers and surge in consumerisaion has lead to a situation where everyone is mad about his comfort and is ready for parade to show himself well-off against one and all. This has lead to tremendous development of means for automation of life by means of electrical electronic equipments (EEE) resulting in fading out and compulsorily outdating the existing systems which have some life and may be can serve purpose. The advent of sophistication and services they offer is another matter of concern which increases the end of life situation of these EEE products forcing the world to a pool of land of discarded products which are deadly hazardous and toxic in nature. The contribution of this 1 % electronic waste in developed nations and 2 – 3 % in developing and underdeveloped nations has put the world to a hold on environmental degradation and in a situation where we need to conserve the rich mineral and rare metals and resources from depleting in ways of wrongful discards and allowing it to create our life endangered.

The situation of nation as panorama can be diversed. The situation of developed and educated states in India can offer a slightly better situation compared to the ones where illiteracy and poor living standards are compelling to make use of discarded EEE in name of automation and fashion parade and to be called that we live in elite society. The situation of Jharkhand is one which averages to the remotes of South Africa states where the live is threatened by these toxic and hazardous substances coming out from e wastes.

The situation in the state itself is diversified with the urbanization and literacy level. The connectivity to metro also plays an important role. Influx of discarded e wastes is more in well connected places and the secondary market for employment generation can be well evident from the study.

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The local state government Luke worm approach towards tackling the grave situation in urgent manner can be well seen. The lack of regulatory enforcing arrangements makes the state haven for such dumping parties and the deadly wastes are getting accumulated in the places making life more and more dangerous. The western thinking of "one size fit al" cannot sustain here and is the most affecting philosophy responsible for continued environmental degradation and depletion of rare resources.

Keyword: Electronic waste, Buy back, Appropriate Technology, life Period, Discarded, Household, Business Sector, Software Sector.

Introduction

Industrialization, rapid technological growth and common man's desire to lead automated life with comfort are key factors for development and replacement of electrical & electronic equipments popularly known as EEE. The EEE and information technology (IT) sector is ever fastest growing segment in current scenario at par with the global phenomenon. Transmigration of technological growth of technology across national boundaries has lead to influx of leading multinational brands and companies in manufacturing sector of these EEE has reported as a result of changing policies & exchange of R&D facilities. Advancement in technology results in increase in updated EEE products and this leads to a situation of obsolesce of old products as they lose their usefulness and this leads to end of life rise and hence generation of Waste of Electrical & Electronic Equipments (WEEE)[3] i.e. electronics waste (e waste). Popular electronic products of main considerations mainly consists of audio equipment, batteries, copiers, computers, DVD, electronic gadgets, electronic toys , electrical home appliances, electric equipments, fax machines, laptops, lamps, mobiles, Printers, televisions, VCRs, stereos, etc. Trends of frequent influx and flow and trends have resulted in accelerated manifold growth of electronic waste also known as e waste.

Imports of used, outdated electronic products in name of technology transfer and up-gradation to third world countries having vast potential of consumerisation or market from the developed countries are the main reason of upsurge of e waste. As an estimate for developed countries waste accounts for 1 % of the total solid waste but in case of developing countries it ranges from 2.5 to 3 %[1]. The lesser amount of e waste may seem to be fewer volumes but due its toxic and highly hazardous nature is proving deadly to the environment and is becoming main source of almost all types of pollution degradation. Tackling of such menace requires adequate safeguard and regulatory measures. Identification of sources, availability of reliable data and extent of preparedness is to be ascertained for arriving at appropriate mechanism development thus we see that the development of such regulatory mechanism is at elementary level across the globe.

The physiological status symbolism idea of society, economical betterment i.e. increases in purchase power & affordability of population is creating larger markets for electronic products.

Contribution of gray market where computers, mobile repairing and other electronic items are assembled plays significant role in e waste generation. These gray markets can be seen well developed in the small cities where in name of local repair all sets of reuse, recycle, remove and rebranding takes place. These factors are well evident when we segmentise the total lot into subgroups. In market driven society out sourcing and services which create

more job avenues are taken prominent roles. The IT sector in this connection plays an important role and is rapidly reaching almost all looks and corners. The mood and frequent changes in needs are resulting in increased optimized software, hardware and firmware's which is also proving to be intelligent area of e waste generation. Increased purchasing power and availability of hard cash without much effort are also resulting in frequent changes of electronic gadgets resulting in frequent exchange of old electronic products contributing more and more towards e wastes. BPOs and multiple activity centers contributing e wastes are identified and studied in detail.

Till 2011 census Jharkhand had 22 districts and each one had small or large towns of significant importance[20]. The survey and study of all segments has been taken up for identification of e waste situation. The segments are divided into sections and groups for proper representation. Questioners were prepared and distributed among the selected groups homogeneously identified. The data are collected and statistical manipulations and exercises were done to arrive at findings which have been put forth in the following sections of this paper.

E Waste Scenario, Concerns & Trends

The MIAT and GTZ studies suggest that in India alone e waste has piled upto 800000 tones in India by 2012 itself showing an upsurge of 200 to 400 % growth for non computer e waste sections and in case of computers it is likely to cross 500 % growth rate by 2017[1,2]. Strategic Management Systems for electronic waste particularly for developing and underdeveloped countries can put in as comparative manner to show the approach among the e waste managing nations. These can be tabulates as represented in table1. Comparative strategies among the nations like China, India, South Africa and Switzerland representing most EEE generating nation, EEE consumer nation, third world nation and developed nation for EEE cases respectively[21].

Table 1 Approach Details of Developing country China, India, Third World Country S Africa & Developed Switzerland

Important aspect	*China*	*India*	*South Africa*	*Switzerland*
Technology Development	Indigenous & few borrowed	Borrowed, indigenous	Only Borrowed	Indigenous Developed & trans boarder migrated from fellow nations
Existing waste management system	Organized for urban areas	Mostly unorganized with rare exceptions for metros	Highly unorganized	Swiss Association for the Information, Commn and Organizational (SWICO) Technologies, Organized system
E waste management	Non specific & Semi organized	Mostly unorganized and informal	Not specific	Not specific
Actors	Manufacturers, distributors, traders, importers, consumers, recyclers, scrap dealers and disposers.	Manufacturers, distributors, traders, importers, consumers, formal and informal recyclers and scrap dealers.	Distributors, traders, importers, consumers,recyclers , collectors, sorters and disposers.	Manufacturers, distributors, traders, importers, consumers, recyclers, licensed collectors and licensed dismeltors and refiners.
Formal e waste	EMPA, GTZ and EECZ	Mostly under Pollution control boards	DESCO Electronic recyclers &	SWICO and SENS (Swiss Foundation for Waste

collection centers			Universal recycling co.	Management)
Disposal / dumping sites	Outlined Municipal sites & illegal sites	Landfills	Landfills	Landfills
Disposal site technologies	Lacks legal collection systems	Lacks proper collection system	Partly Permitted sites with tech.	Systematic and meticulous process

Various studies have put the state wise e waste figures in percentage till 2012 as mentioned in table 2[21]. The graphical representation of it is shown in the figure 1.

Table 2 Showing Details of State wise E Waste Contribution in India

Sl	States	E waste in % in India	Sl	States	E waste in % in India
1	Maharashtra	13.88121	19	Uttarakhand	1.123886
2	Tamil Nadu	9.235316	20	Himachal	1.092317
3	Andhra Pradesh	8.751912	21	Jammu & Kashmir	1.041916
4	Uttar Pradesh	7.108937	22	Goa	0.292682
5	West Bengal	6.888625	23	Tripura	0.259058
6	Delhi	6.662478	24	Chandigarh	0.246321
7	Karnataka	6.244472	25	Pondicherry	0.194619
8	Gujarat	6.159256	26	Meghalaya	0.144903
9	Madhya Pradesh	5.341829	27	Nagaland	0.099364
10	Punjab	4.765149	28	Arunachal Pradesh	0.090188
11	Rajasthan	4.332633	29	Andaman Nicobar	0.063138
12	Kerala	4.226421	30	Mizoram	0.054647
13	Haryana	3.086305	31	Manipur	0.05451
14	Bihar	2.092461	32	Sikkim	0.053483
15	Orissa	2.011792	33	Diu & Daman	0.02794
16	Assam	1.490594	34	Dadar & Nagar Haweli	0.019928
17	Chhattisgarh	1.472242	35	Lakshadweep	0.005067
18	Jharkhand	1.384383			

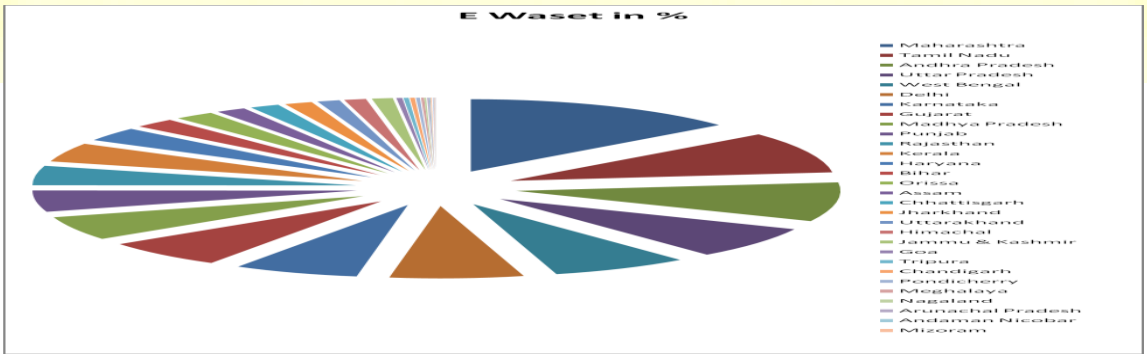

Figure 1 Showing percentage representation of E waste generation in India state wise

Jharkhand State: Studies and Data Outlines

To get the overall scenario and situation of e waste stocks in Jharkhand following strategies were employed for obtaining data in order to conduct our studies:-

1. Think group was involved to frame a proper questioner. The questioner was developed, circulated among the target group identified and data's based on the questioner were collected from door to door survey by the self help group members. These datas received basically from the diversified socio economic groups across the sections for proper ascertaining practical sample data of the state of affairs so far practicable. The group identified and created were as follows :-

a) Households,
b) Business organizations & institutions including offices
c) Manufacturers, dealers, Importers / exporters, EEE second-hand shops, EEE repair shops, Recyclers / dismantlers, Processors of recyclable materials, Re-users, EEE collectors, R&D units including similar types of institutions and organisations.

2. Interview and fact collection efforts were undertaken from selective group. This was done to get facts & figures, intents flowed by principle of thoughts of the end users.
3. Purchasing pattern, resource availability, recycling, reuse and disposal practices were obtained and tabulated i.e. ascertained and processed.

   Effectively main seven types of commonly used consumer commodity of EEE were identified and taken account of for determination of pattern of e waste disposal. These seven identified EEE items are Computers including its monitors of either LCD / CRT types, Laptops, most frequently used by masses Mobiles, Refrigerators finding places in almost all urban houses, Air conditioners (AC) , Batteries used for UPS or alternate lighting arrangements.

In all districts of Jharkhand the 100 sets of questioners making it total 2200 sets in equal numbers were delivered to three groups through email, post and distributed manually.

Responses from the three categories of target groups are as follows mentioned in the table

In household category for all districts responses from 1484 were received back. The responses mentioned in table 4 are mainly the response that reflects the mood of the consumers on individual basis.

Business organizations & institutions including offices: Out of total 2200 targets, the 1713 receipts reveal the mood of the bulk user and policymakers. The details of responses are in table 5.

The Manufacturers, Importers / exporters responses from the targeted 2200 which is 1670 in numbers are in conformity of the e waste generation as it was most likely that the e waste would be nil only as the EEE products are not put to use themselves and are extended to others only for conversion to e waste after extensive use and handling, recycling and reuse. The details are in table 6.

Figure 3 indicates the targets verses responses of all the three categories.

Table 3 Showing the Responses in the three Segments Identified and Planned

Districts	Household	Business organizations & institutions including offices	Manufacturers, Importers/exporters etc.

	Population in lac	Questionnaire sent	Questionnaire received	Districts	Questionnaire sent	Questionnaire received	Districts	Questionnaire sent	Questionnaire received
Ranchi	22.14	100	95	Ranchi	100	91	Ranchi	100	79
Lohagrdaga	2.89	100	69	Lohagrdaga	100	79	Lohagrdaga	100	81
Gumla	7.08	100	54	Gumla	100	74	Gumla	100	64
Sindega	4.46	100	46	Sindega	100	66	Sindega	100	76
Palamu	11.83	100	75	Palamu	100	79	Palamu	100	78
Latehar	4.67	100	43	Latehar	100	73	Latehar	100	63
Garhwa	8.01	100	54	Garhwa	100	64	Garhwa	100	74
W Singhbom	10.81	100	66	W Singhbom	100	76	W Singhbom	100	76
Saraikela	7.07	100	76	Saraikela	100	86	Saraikela	100	84
E singhbom	16.13	100	91	E singhbom	100	81	E singhbom	100	75
Dumka	9.51	100	74	Dumka	100	79	Dumka	100	77
Jamtara	5.45	100	56	Jamtara	100	86	Jamtara	100	84
Sahabganj	7.37	100	49	Sahabganj	100	79	Sahabganj	100	69
Pakur	5.64	100	51	Pakur	100	71	Pakur	100	81
Godda	8.61	100	52	Godda	100	82	Godda	100	79
Hazaribagh	18.36	100	83	Hazaribagh	100	83	Hazaribagh	100	83
Chatra	6.13	100	55	Chatra	100	75	Chatra	100	71
Koderma	3.95	100	79	Koderma	100	82	Koderma	100	79
Giridih	14.96	100	71	Giridih	100	76	Giridih	100	74
Dhanbad	19.5	100	91	Dhanbad	100	71	Dhanbad	100	79
Bokaro	14.54	100	83	Bokaro	100	81	Bokaro	100	73
Deoghar	9.33	100	71	Deoghar	100	79	Deoghar	100	71

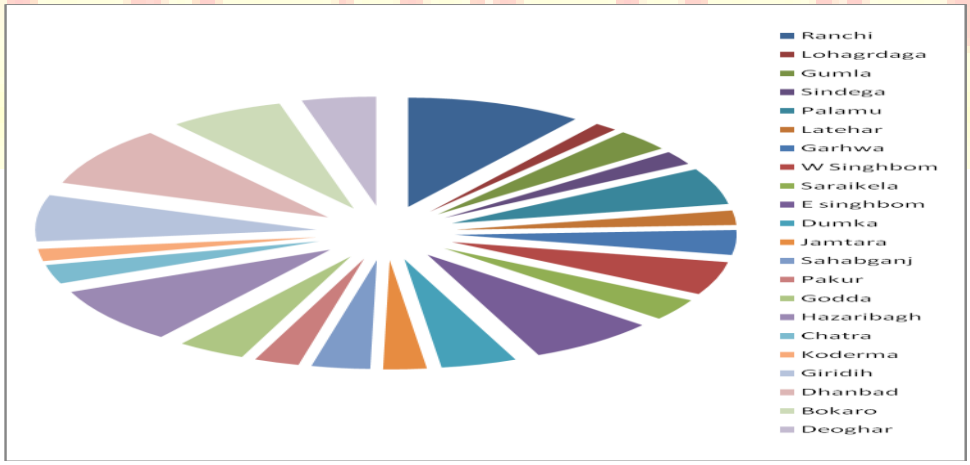

Figure 2. showing population demography of districts

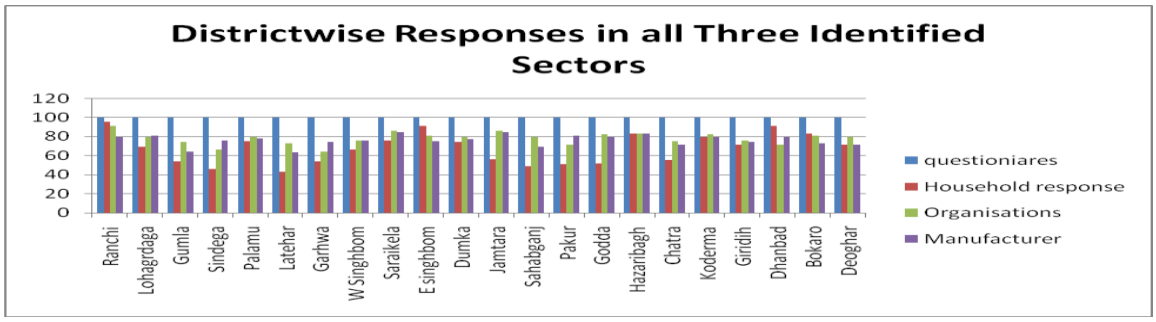

Figure 3 depicting distributed and received questionnaire for three groups

Sample Surveys Details

In survey for household segment e wastes scenario all together 2200 questionnaires were sent and only 1484 were received i.e. 716 did not bother to respond/reply.

In the next segment of business organizations and institutions the received number of responses were 1713 i.e. 487 chose not to respond/reply.

In the last segment i.e. manufacturers, importers / exporters etc category responses from 1670were received indicating that 530 chose to be non responsive.

Re-users / Recyclers/ Second hand market holders Questionnaires

In this category mainly four groups existed and they were

a. Raddiwala / kabariwala i.e. Scrap metal collectors
b. Second hand dealers and repairing shops
c. Formal pollution board listed/licensed vendors and
d. Informal vendors irrespective of that they are raddiwala or otherwise but are active in this field.

Since the target group is not elite or educated, responses were collected by the interview with such individuals or groups. The volumes and weight of the e wastes calculated in this study are as per the standards fixed or maintained in report of UNEP volume I published.

Obtained informations were tabulated for statistical evaluations. Details data for all eight listed segments of the e waste are as enumerated / documented in the tables listed here under.

Table 4 Showing E waste generation from household

Components	***Household sector e waste survey (Total received records 1484 from all districts)***								
	Large scale			***Medium scale***			***Small scale***		
	Used	***Repaired/ discarded***	***E waste***	***Used***	***Repaired/ discarded***	***E waste***	***Used***	***Repaired / discarded***	***E waste***
Computers	1409	1121	22420	1131	126	415.9	12	3	8.72
Laptops	1242	167	585.5	298	123	80.5	32	4	6
Printers	454	111	555	223	72	210	9	2	4.1
Mobile phones	8052	3246	1623	1678	1054	106	890	341	34
TV	3436	803	16060	1231	491	3211	776	456	451

Refrigerator	959	137	4110	328	91	1121	35	6	30
AC	998	153	3060	541	148	412	4	2	8
W machines	2256	223	4460	349	171	98	80	36	181
Total e waste	52873.5 kg/yr			5654.4 kg/yr			722.82 kg/yr		

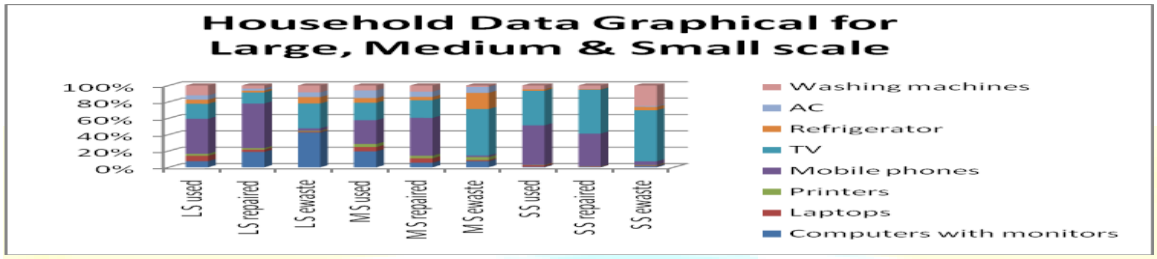

Figure 4 showing Household E waste details as per table 4

The major e waste generated in this segment is in the TV field followed by computers although the mobile users was the second largest i.e. after TV. The e wastes figures from the Singhbhom and Ranchi districts were largest compared to the districts of Latehar, etc which registers the least ones. This is understand as major markets and availability of products, paying capacity and alertness and sense of safeness of the population in places of Jamshedpur and Ranchi are higher compared to the other areas.

Table 5 showing E waste generation from Business organizations & institutions including offices

Components	Software sector e waste survey (Total received records 713 from all districts)								
	Large scale			Medium scale			Small scale		
	Used	Repaired / discarded	E waste	Used	Repaired / discarded	E waste	Used	Repaired / discarded	E waste
Computers	81265	8098	241802	2987	812	23360	698	146	4343
Laptops	19826	1665	5877.5	421	146	512	268	73	180.5
Printers	2872	976	4880	1321	638	3190	121	28	140
Mobile	21748	1289	317.3	1173	456	45.9	164	51	6.36
TV	1357	291	4376	962	216	1756	175	43	644
Refrigerator	767	123	3680	146	81	1940	41	23	692
AC	2189	1141	21640	856	232	4280	112	46	860
W machines	123	49	980	41	12	240	13	4	80
Total e waste	283552.8 kg/yr			35323.9 kg/yr			6945.86 kg/yr		

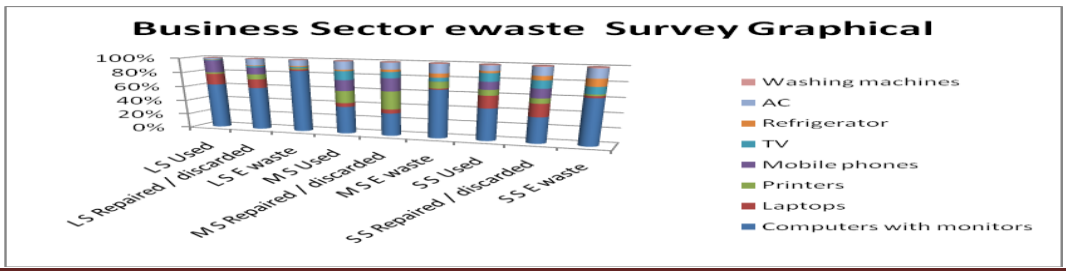

Figure 5 Showing details of Business Sector e waste

As the major business, official and educational organizations are situated in the Jamshedpur, Ranchi and Dhanbad in the respective districts showing bulk users are in the computer, laptop, and all other segments responsible for e waste generation. These sections alarmingly represent such behavior for major e waste generations also. The less populated and poverty driven districts markedly generated lower e waste in such segments.

Table 6 Showing E waste generation from Manufacturers, Importers/exporters etc.

Components	Software sector e waste survey (Total received records 375 from all districts)								
	Large scale			Medium scale			Small scale		
	Used	Repaired/ discarded	E waste	Used	Repaired / discarded	E waste	Used	Repaired / discarded	E waste
Computers	10046	25	Returned	1608	6	Returned	1361	4	Returned
Laptops	6471	21	Returned	289	2	Returned	6	0	0
Printers	6847	16	Returned	331	3	Returned	69	0	0
Mobile	26123	9	Returned	491	9	Returned	113	0	0
TV	14347	11	Returned	1928	39	Returned	1291	31	Returned
Refrigerator	4711	5	Returned	11	0	0	10	0	0
AC	1258	6	Returned	1071	12	Returned	11	0	0
W machines	2218	4	Returned	392	6	Returned	282	18	Returned

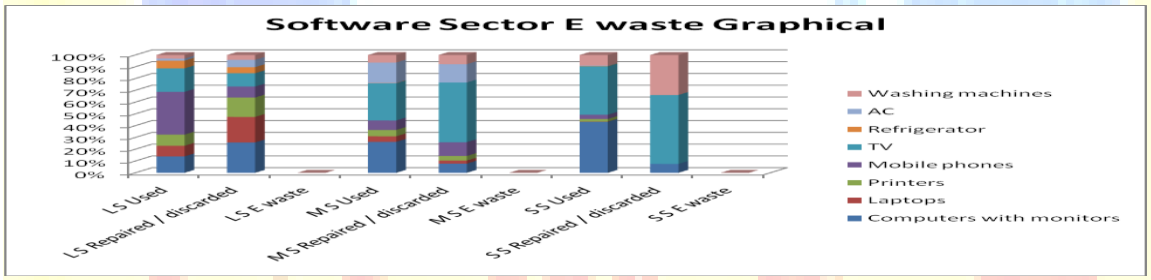

Figure 6 showing e wsate in Software Sector organisations

Prime manufacturer/importer/exporter/ distributors/ dealers are located in Jamshedpur, Ranchi and well connected Dhanbad major cities. The connectivity of Jamshedpur and Dhanbad to Kolkata is easier and hence these cities were better having facilities of returning the damaged products. The company owned maintenance and service centers or franchise for this matter are mostly located in Ranchi followed by Jamshedpur. The Dhanbad is well connected to Kolkata so the service providers are mostly attending form the nearby metro only.

Segment wise Results and Discussions

Household: Responses from survey of total 2200 out of which 1484 responded indicates trend of generation of e waste in particular pattern as depicted in the graphical. Here the consumers are divided per family members in large, medium and small sections. The overall trend in this survey shows that EEE are improperly maintained conditions. In most of the time get repaired when they get defects to the extent it can squeezed for maximum life span of any

product for getting maximum worth without facing tackling the other factors which prevail for changes of product in society. The authorized centres personals or even second hand dealers come for the repairing and reuse.

The minimization of neglect, lesser care of products, lack of proper use, improper use and frequency are the sole causes of low generation of e waste. The outdated Computers, Laptops, Printers, Televisions, Air conditioners nd other EEE products etc get exchanged in the market and often get their reflection as e waste in the next group where we deal with the reusers and recyclers etc. The table for this survey shows the details of use and e waste generation. The e waste generation from the products which came from the gray market is seen as major contributors. The items and products of the standard companies often do not contribute much to this stream as these are properly matched and employ proper technology for sustainability of products and other are taking care of preventive management. The Maximum of e waste generated in computer and laptops are because of their low life span and fast changing technology, frequent upgradation of software versions requiring even new match able hardware for matching available speed of peripherals. Another important factor is choice of lesser repairs resulting in lesser generation of e waste.

In case of TV the changing technology and pattern of consumers are basic cause of shifting of product say from CRT to LCD to LED to newer curved LED technology have one group to lower affordable groups and ultimately resulting in the obsolesce i.e. e waste.

The refrigerator is the other EEE product which often gets converted to e waste mainly because of high repairing cost resulting in less preventive maintenance, rough use frequent power fluctuations improper earthing in house wirings. The high rate of recovery of the items is not easy and volumes of metallic part results in the major e waste by weight and volume in this case. The second hand market for such products is also not that promising even though in day to day life but back systems by dealers and shop ones are frequently evident. These exchanged products often reach market with repairing and result in large delayed e waste in turn.

From the above discussion one may like to enumerate the disposal trends prevailing in market and masses. The disposal trends can be seen as shown in table 7 obtained from the study survey.

Table 7. Methods of disposal of EEE

Activity	*Frequency*	*Percentage*
Disposable EEE keep in house	231	15.6
Send to manufacturer	56	3.8
To Repair/ Recycle centre	281	18.9
Transfer to relative	154	10.4
Charity transfer	182	12.3
Waste bins	393	26.5
Others	187	12.6

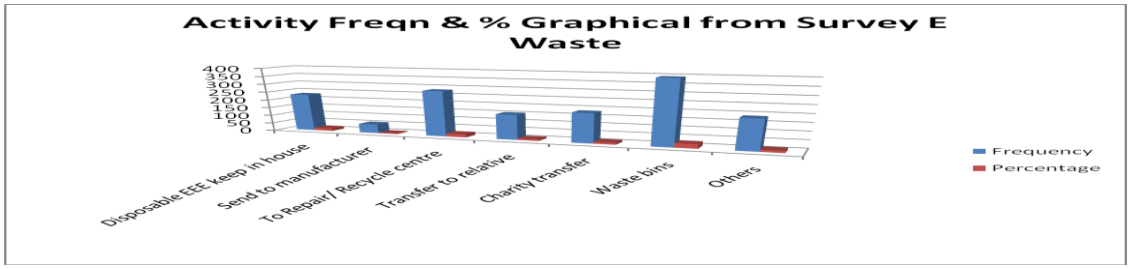

Figure 7 showing Disposal Activity Freq. & Percentage

Business organizations & institutions including offices: The survey for 2200 distributed questionnaire out of which 1713 were received/ collected and related details/information were tabulated and statistical findings were made out from these. The analytical analysis of trends of e waste generation percentage and Volume wise can be explained in different ways. The volume wise e waste generation reported in this situation is also maximum in cases of computers, Laptops and printers in IT sector followed by TV, AC, fridge, washing machine and mobile.

The weight-wise/volume-wise e waste generation percentage wise is maximum in case of Refrigerator section followed by AC, TV, Washing machine, Computers, Printers, laptops and Mobile respectively. The amount of e waste generated is understandably largest in the large scale sector and minimum in small sector seeing the use of segment wise units in it and awareness towards it.

E waste generation from Manufacturers, Importers/exporters etc: In this category we observe that since the perishable products are not in use hence the generated e waste is minimum. The e waste generation in these cases is only due to transportation in which these get damaged during transportation and hence may require repairs resulting in small amount of e waste. The e waste produced is almost nonexistent in this case. The damaged items are often returned back to the importers / exporters / manufacturers or assemblers hence the e waste volumes are not with these units. These parties make use of the new parts for repairing other unit and hence the e waste accumulation / generation is negligible. In this survey study only branded parties and reputed assemblers of area/region were contacted hence the actual real story/representation of very small, cottage type industries or local manufacturers scenario could not be studied.

Challenges, Concerns and Economics of E Wastes

The compounding pool, mammoth growth and arising concerns for e waste in a sustainable, sound environmental technological development with updating processing advancements, growth of use and throw mindset, pattern of matching the next man psychology and tremendous increase in purchasing power of mankind is increasingly resulting e waste management task a challenging one. The outburst of toxic hazardous constituents of e wastes in the environment resulting in irreparable damage to environment in all aspects is proving that current generation of policymaker are failing in striking balance between safety, cost, advancement of technology, its use with proper environment protection for greener world. Facts and measures for reduction of e waste through recovery reuse and recycle to minimize toxic substances in order to arrive at technology for such labour intensive and safe product

development with enhanced participation of stakeholders in fixing responsibility of managing e waste in more sensible manner needs to be addressed adequately.

We are aware that worldwide formal sectors for recycling are 5 to 10 % where as facility for recycling in informal sector is the remaining mammoth percentage. The initial estimate suggests that 90-95 % of e-waste gets recycled in India in the informal sector which is performed and actuated in highly hazardous conditions by the masses without proper or least know how. The e waste is one which simultaneously posses threat to environment and human kind and opportunity as employment generator at other hand at same time. The e waste contains different hazardous and toxic elements responsible for multiple health problems.

Scraps and remains of the end of life/ discarded products are main source of e waste. Further one can say that products which suffer from the technological obsolescence and permanent damaged conditions and have lost all usefulness results in e waste. Developed nations are addressing this problem by separately designating location for storage of e waste so that it does not mix with solid waste and cause damage to environment. It is becoming inevitable in India also. The much talked but back/ take back/ EPR (extended producers responsibility) which entitles the manufacturers or its importers / agents to take back discarded product or e wastes for disposal in most technological manner as buy back or otherwise arrangement is day by day becoming fact and figure for strict requirement. Lack of awareness of contents, its toxicity and hazardous effects among the users is often becoming source of disaster. Here consumer's ignorance in handling and handing over of product even in case of buy back offers are the main causes. The lack of knowledge of consumer/user regarding usefulness and retrieval of valuables from the e waste which can pay back those handsome amounts often creates a situation that these e wastes are thrown for causing environmental degradation. It these e wastes are returned back to the manufacturers by chain or by official collectors the rare metals and elements useful in further manufacturing of EEE products can be reused and will result in further lowering of cost as a return. There is urgent need of creation of proper awareness about belongingness of e wastes among the handler group is need of hour for minimizing hazards and proper utilization of raw materials and reduction of e waste.

Preservation of environment is nation's state subject so stringent regulatory measures have to be enacted for such purposes. Currently situation of regulations and strictness of adherence is also a divided lot. The overall reaction is that the "who cares" or "it's his responsibility not mine" is the situation among the different groups. The Indian business leaders are also in no mood to change them and are reluctant towards e waste handling through its proper management. In current situation as a common man is sufferer and he is the consumer so it is primilarly his or duty of user to handle the e waste in safe and purposeful manner for mitigating the e waste hazards.

In the current situation since underdeveloped or least developed countries do not have more sophisticated gadgets and EEE so level of pollution or environmental degradation due to e waste is low but the developed nations are forcing them to cut pollution level for their quotas also for meeting the international levels in name of compensating the efforts by providing a small sum and making provision for dumping of their e waste in these counties boundary. Environmental protection from pollution resulting from these EEE and other factors among the developed and under developed nation has given rise to economics of its own kind in needed items and trade and opened new venues. These days health, hygiene and aesthetic reasons for environmental protection have become luxury of the developed

nations. Reduction of pollution levels is increasingly becoming need of all nations resulting in under developed nations becoming experimental grounds of the developed nations for new adventures and experimentations for mitigations resulting in unknown dangers for coming generations.

Conclusions

The position and preposition of Jharkhand state in the Indian scenario has been studied in the present context of developing EEE use and its impacts and presence in all the districts. The society is a dived lot. The prepositions are as predictable among the aware and unaware masses. Awareness for toxicity and harardness among the masses is minimal and needs a radical exercise. Recycling and reuse in name of repairing and jugad/ managing technology is popular. Wastage of raw materials which can be retrieved from the products is continuing. Regulatory mechanism in Jharkhand is at the bottom level. There is no awareness in the local municipal units nor in the pollution board for the specialized waste namely e waste. There are no collection centers not the manufacturers or dealers are in mood of creating awareness for such efforts. The divide for waste generation is as predictable. These have ones are transferring the products to lesser ones and the groups are changing the products till it comes to discarded condition and finally one can see that it ends up in the worst effected social setup. The situation of e waste in the house hold sector, business organizations and software sections are as follows:

House hold sector: Large scale 52873.5 kg/year, medium scale 5654.4 kg/year and in small scale it was reported as 722.82 kg/year

In case of Business organization and institutions for large scale it is 283552.8 kg/yr, medium scale 35323.9 kg/year and in small scale 6945.86 kg / year.

In Manufacturers / importers / exporters etc sector since they are themselves producers so the wastes are transferred to the organization itself so no evidence of e waste was reported.

Need for reduction of e waste is to be taken up. Creation of awareness about ill effects of e wastes constituents and possible retrieval of rare materials for preservation and optimal use needs to be looked into. Regulatory mechanism development and strict implementation at one end and creation of collection centers with inclusion of EPR/ buy back options or take back options needs to vigorously introduced for technology supported disposal.

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