RONGO UNIVERSITY SCHOOL OF INFOCOM; Bsc. Informatics Year 3.1

UNIT: Green Computing

Presented By: Ms. Tabitha N.

Consequences of poor e-waste handling

- The ecological, economic and social consequences resulting from poor handling and management of e-waste include:

Environmental consequences

- Air pollution, especially when e-waste is burnt
- Waste management problem of non-biodegradable equipment
- Toxicity and radioactive nature of e-waste to the human, water, soil and animals
- Blockage of water runoff channels
- Increased amount of waste
- Waste management disposal problem

Social consequences

- E-waste affects people's health (e.g. lead poisoning and cancerous mercury).
- Growth of informal waste disposal centres in the neighbourhood
- Informal trade and management of e-waste
- Loss of appreciation for ICT

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Consequences of poor e-waste handling

Economic consequences

- Substantial public spending on health care
- Investments in complex and expensive environment remediation technologies
- Loss / waste of resources that can be recycled for re-use
- Opportunities for recycling industries and employment lost
- Ozone depletion has led to unpredictable weather conditions. Prolonged droughts and floods demand the use of resources which should be deployed for growth and development in other sectors.

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Weaknesses the government is facing.

Weakness

- Lack of coordinated approach across the Ministries to deal with e-waste
- Lack of awareness of the need for the ewaste management system
- No mechanism to implement the policy intentions (e.g. MoIC policy statement)
- Limited national capacity to process e-waste
- Lack of a mechanism to separate e-waste from solid waste and a structured system of e-waste collection
- None or limited extended producer/supplier responsibility
- Lack of affordability of new IT
- Lack of collection systems leads to e-waste being stockpiled at homes, office and repair shops
- No national e-waste policy in Kenya
- Lack of formal training in e-waste management.

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Threats the government is facing.

Threats

- Dumping of e-waste by developed nations
- Hazardous nature of e-waste
- No regulatory and policy structures to safeguard health, environment and social consequences of e-waste
- Limited capacity of MENR, NEMA and other government agencies to deal with e-waste.
- Significant amount of second-hand equipment in the market with short remaining lifespan.

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Opportunities the government gets.

Opportunities

- Willingness by stakeholders to contribute to e-waste management; CCN has allocated land to CFSK to build a national e-waste recycling centre
- Employment opportunities
- Informal business in recycling found around dumpsites can be formalized
- Capacity in formal business can be developed
- Some manufacturers e.g. (Sony Ericsson, LG) and suppliers and service providers (e.g. Safaricom) are implementing take back schemes
- Funds available that can be used by small entrepreneurs (e.g. CDF, Youth and Women Fund).

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Converting the challenges into opportunities

Despite the problem of e-waste, its proper management using environmentally sound systems, presents numerous socio-economic opportunities that can stimulate entrepreneurship, employment and enhancement of livelihoods.

a. Recycling level.

Organisations and individuals that will be licensed to recycle will either create job opportunities or self-employ themselves. Experiences across the world indicate that the scale of operation for recycling e-waste is growing at viable and potentially profitable rates.

b. Dismantling and refurbishing level.

The refurbisher extends the functional life of electronic or electrical equipment by breaking apart the end of use equipment and selling the parts that can still be used. This process, besides creating job opportunities, saves the environment by diverting large volumes of e-waste from energy-intensive down cycling processes where the equipment is reverted to raw materials for use in manufacturing. The environmental and social benefits of refurbishing and reuse include diminished demand for new products and virgin raw materials and diminished use of landfills.

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Converting the challenges into opportunities

c. Collection level.

Through the Producer Responsibility Organization (PRO) and *take back* systems those who collect e-waste and hand it over to recyclers, refurbishers and treatment plants are paid a *take back* fee which in away provides for livelihoods.

d. Creation of artificial mines. It is a fact that e-waste contains hundreds of tonnes of various metals. These metals can be isolated, treated and made available for use in new forms. This is done by establishing metal separation facilities at landfills or e-waste deposits. This process not only creates employment but also reduces metal loading on e-waste deposit sites and hence reduces the risk of soil contamination, besides making available new metals for use.

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E-WASTE LEGAL FRAMEWORKS.

- There are no specific national environmental laws or Guidelines for e-waste. None of the existing environmental laws make any direct reference to the handling of electronic and electrical waste. However provisions made for Environmental Management and Coordination (Waste Management Regulations) regulations 2006, may apply to electronic waste where they can be classified as hazardous waste.

1. Existing policy

i) International instruments

- Kenya is a signatory to many agreements and conventions on environmental management. These include support for the provisions of Agenda 21 amongst other declarations and statements of principle, such as the Rio Declaration in 1992 on Environment and Development.
- Kenya is also party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
- Kenya also supported the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste at the Conference of the Parties (CoP 8) meeting in Nairobi, 2007.
- The declaration sought to develop a work plan for the environmentally sound management of electrical and electronic waste (e-waste), focusing on the needs of developing countries and countries with economies in transition.

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E-WASTE LEGAL FRAMEWORKS.

ii) Sessional Paper No 6 of 1999 on Environment and Development

- In 1999 the Government of Kenya produced the Sessional Paper No 6 on Environment and Development.
- The overall goal of the policy was to integrate environmental concerns into the national planning and management processes and provide guidelines for environmentally sustainable development. The policy paper identified areas requiring action which included development of comprehensive waste management policy, guidelines, and standards.

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E-WASTE LEGAL FRAMEWORKS.

2. Legislation

- The Environment Management and Coordination Act of 1999 is an ACT of Parliament that provides for the establishment of an appropriate legal and institutional framework for the management of the environment.
- The act allows the minister in charge of environment to gazette standards, regulations and guidelines for the proper management, conservation and protection of the environment.
- The Environmental Management and Co-ordination (Waste Management) Regulations 2006, is the government's legal instrument that deals with waste management in Kenya. Although there is no direct provision for e-waste, the Waste Management Regulations 2006 apply to electronic waste by virtue of their composition which includes several of the substances listed as hazardous waste.

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E-WASTE LEGAL FRAMEWORKS.

3. Institutional framework

i) The Ministry of Environment and Mineral Resources

- The Ministry of Environment and Mineral Resources (MEMR) is responsible for the environment at policy level. One of its key functions is the full implementation of the Environmental Management Coordination Act (EMCA) 1999 which defines hazardous waste, pollutants and pollution. To achieve this objective, the Ministry's role is to create an enabling environment through policy, legal and regulatory reforms for environmental and natural resources management.

ii) The National Environment Management Authority

- The National Environment Management Authority (NEMA) is the principal instrument of Government in the implementation of all policies relating to the environment. In the NEMA strategic plan 2010-12, key objectives include universal compliance and enforcement of environmental regulations, developing guidelines and standards and the prosecution of offenders failing to meet the provisions of the EMCA 1999. The lead agencies that are also pertinent to ewaste management include the Ministry of Information and Communication, Communication Commission of Kenya (CCK), Kenya Bureau of Standards (KEBS), Kenya Revenue Authority (KRA), Ministry of Education, Ministry of Local Government (MoLG) and City Council of Nairobi (CCN).

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E-WASTE LEGAL FRAMEWORKS.

iii) Ministry of Information and Communication

- The Ministry of Information and Communication (MoIC) has recognised the potential challenge posed by e-waste and has included a clause in its 2006 policy document that specifically addresses the issue.

iv) Communications Commission of Kenya

The CCK is working on issues of enforcement through the Unified Licensing Framework (ULF).

v) Ministry of Local Government

- The Ministry of Local Government (MoLG) is developing a solid waste management policy and the CCN is developing an integrated solid waste management strategy in conjunction with UNEP.

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