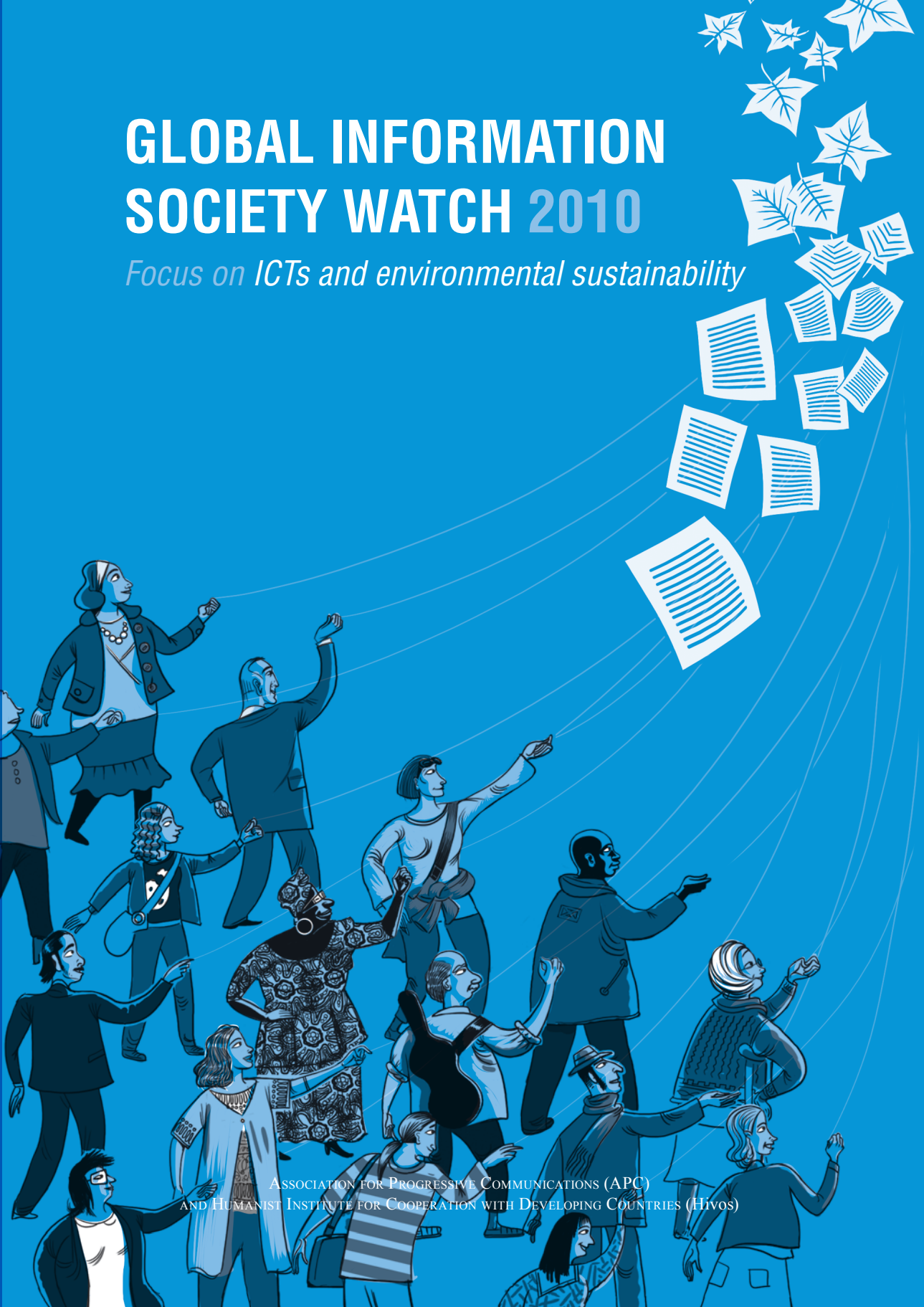
GLOBAL INFORMATION SOCIETY WATCH 2010

Focus on ICTs and environmental sustainability



Association for Progressive Communications (APC)
and Humanist Institute for Cooperation with Developing Countries (Hivos)

Global Information Society Watch

2010

Steering committee
Marjan Besuijen (Hivos)
Anriette Esterhuysen (APC)
Loe Schout (Hivos)

Coordinating committee
Karen Banks (APC)
Monique Doppert (Hivos)
Karen Higgs (APC)

Project coordinator
Karen Banks

Editor
Alan Finlay

Assistant editor
Lori Nordstrom

Publication production
Karen Higgs

Graphic design
MONOCROMO
info@monocromo.com.uy
Phone: +598 2 400 1685

Cover illustration
Matías Bervejillo

Proofreading
Stephanie Biscomb, Lori Nordstrom, Álvaro Queiruga

Financial partners
Humanist Institute for Cooperation with Developing Countries (Hivos)
Swedish International Cooperation Agency (Sida)
Swiss Agency for Development and Cooperation (SDC)

Global Information Society Watch
Published by APC and Hivos
2010

Creative Commons Attribution 3.0 Licence
<creativecommons.org/licenses/by-nc-nd/3.0/>
Some rights reserved.
ISBN 92-95049-96-9
APC-201011-CIPP-R-EN-PDF-0087

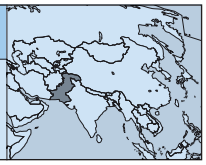
APC and Hivos would like to thank the Swedish International Cooperation Agency (Sida) and the Swiss Agency for Development and Cooperation (SDC) for their support for Global Information Society Watch 2010. SDC is contributing to building participation in Latin America and the Caribbean and Sida in Africa.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Foreign Affairs FDFA
Swiss Agency for Development and Cooperation SDC

PAKISTAN

Bytes for All
Shahzad Ahmad and Maryam Rehman
pakistanictpolicy.bytesforall.net



Introduction

Using different kinds of electronic equipment today is so much a part of our daily lives, we hardly think of the way the world would be without electronics. The extreme growth rates in take-up of information and communications technologies (ICTs), minimal initial set-up costs and ever-shortening planned obsolescence rates result in large quantities of electrical and electronic equipment being added to the waste stream.

In recent years a great deal of attention is being devoted to the environmental impact of computers and other electronic equipment, as these items pose a massive problem for municipal landfills and health hazards to human life.

Pakistan, a country with a diverse landscape, hosts large deserts, gushing rivers, and a number of the highest peaks in the world. But its environment is marred with many environmental issues such as uncontrolled urbanisation, poor solid waste management, degradation of forests, scarcity of water, excessive use of pesticides for agriculture, poor environmental standards in industries, and weak governance structures. Environmental laws enacted are not enforced properly to help stop the disasters.

Being an agriculture-based country, experts consider climate change a great threat. Listing the vulnerabilities, they are concerned about crop failure and loss of livestock, which will lead to food insecurity and serious conflicts over resources. Droughts, floods, scarcity of water resources, health risks, meagre energy resources, and socioeconomic and socio-political instability can play havoc with the country's large population.

The recent monsoon floods that started in the last week of July 2010 are also thought to be influenced by climate change – increased temperatures, rapid glacial melt and unusual precipitation.

Policy and legislative context

The environmental movement in Pakistan took root in the early 1980s. The government took various steps including the enactment of the Pakistan Environmental Protection Ordinance in 1983, followed by the formation of the Pakistan Environmental Protection Council (PEPC) in 1984, an apex body for setting up environmental policies in the country. However, no major action in terms of environmental policies or practices were carried out until 1992, when the government endorsed the National Conservation Strategy (NCS) as an environmental policy at the sectoral level.

As part of Pakistan's commitment to the environment, the then prime minister of Pakistan presented the NCS at the Rio Earth Summit in 1992.[1] This also proved to be the starting point of the revolution of ICTs in the country, when the United Nations awarded a grant to Pakistan via the International Union for Conservation of Nature (IUCN) for the implementation of its much-acclaimed Sustainable Development Networking Programme (SDNP).[2] The SDNP initiative pioneered email and internet in the country for use by the masses.

Though the deterioration of the environment continued at a rapid pace, significant steps were taken towards institutional development and policy formulation to safeguard the environment in the country. Important milestones include the Pakistan Environmental Protection Act in 1997,[3] the establishment of Federal and Provincial Environmental Protection Agencies (EPAs), the approval of National Environmental Quality Standards (NEQS),[4] the initiation of the Provincial Conservation Strategies, and acceptance of local communities/NGOs as partners in environmental management.

The National Environmental Policy 2005[5] and Mid-Term Development Framework 2005-2010[6] are other important milestones. The environmental priorities established in these various government policies are summarised in Table 1.

Solid waste management in the policy documents always refers to municipal or industrial waste, while climate change is never referred to in the context of ICTs and environment sustainability. To bring these issues to the fore, there is a long way to go with specific interventions, focusing on the government in general, but the private sector in particular.

Pakistan is party to the following chemicals- and waste-related international conventions:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- Stockholm Convention on Persistent Organic Pollutants
- Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer.

1 Also known as the United Nations Conference on Environment and Development: www.un.org/geninfo/bp/enviro.html

2 www.sdnp.undp.org

3 www.environment.gov.pk/act-rules/envprotact1997.pdf

4 www.environment.gov.pk/smart/site/NEQS.html

5 www.environment.gov.pk/nep/policy.pdf

6 www.planningcommission.gov.pk/MTDF%20Review%202007-08/MTR.pdf

Table 1. **Environmental priorities as listed in different policies**

National Conservation Strategy (NCS) 1992-2000 *Priorities*	National Environmental Action Plan (NEAP) 2001 *Core Areas*	National Environmental Policy (NEP) 2005-2010 *Key sectoral issues*	Mid-Term Development Framework (MTDF) 2005-2010 *Key sectoral issues*

• Maintaining soils in croplands
• Increasing irrigation efficiency
• Protecting watersheds
• Supporting forestry and plantations
• Restoring rangelands and improving livestock
• Protecting wetlands
• Conserving biodiversity
• Increasing energy efficiency
• Developing and deploying renewables
• Managing urban waste
• Supporting institutions
• Integrating population and environment
• Preserving cultural heritage
	• Clean air
	• Clean water
	• Solid waste management
	• Ecosystem management
		• Water management and conservation
		• Climate change, air quality, noise pollution and waste
		• Energy efficiency, renewables
		• Agriculture, livestock
		• Forestry, plantations
		• Biodiversity, protected areas
		• Management
		• Cross-sectoral issues: environment and
		  • population
		  • gender
		  • health
		  • trade
		  • poverty
		  • local governance
			• Climate change
			• Solid/hazardous waste management
			• Fresh water, sanitation, slums and squatter settlements
			• Air pollution
			• Forestry and watershed management
			• Biodiversity, wildlife and protected areas
			• Rangeland management
			• Desertification
			• Energy conservation and renewables
			• Marine pollution
			• Multilateral environmental agreements
			• Cross-sectoral environmental concerns
			• Trade and environment
			• Human resource development
			• Environmental education and awareness
			• Research on environment

E-waste in Pakistan

When it comes to electronic waste (e-waste), Pakistan is at the receiving end of the "e-waste divide" due to widespread poverty and sharp inequality. Some may even see this as evidence of our greater ability to use and reuse material items more effectively than the wasteful West. Yet this inconsiderate attitude that results in e-waste dumping is already emerging as one of the major hazards to the health of both the environment and the people.

We already know that e-waste is as much a problem as other waste that is regularly generated by industrial societies. The health and environmental hazards associated with e-waste are mostly due to electronic goods containing significant quantities of toxic metals and chemicals. If these are left untreated and lie around in landfills or dumps, they leach into the surrounding soil, water and the atmosphere, thereby generating obvious adverse effects for human health and ecology. Many elements of the waste are hazardous, as the circuit boards, cathode ray tubes, connectors and other elements that are essential for most electronic goods almost always contain poisonous substances such as lead, tin, mercury, cadmium and barium.[7]

Old electronics are often lumped into municipal waste and then burnt, releasing toxic and carcinogenic substances into the air, which may stunt brain development, disrupt hormone functions or affect reproduction. Chemicals such as beryllium, found in computer motherboards, and cadmium, used in chip resistors and semiconductors, are poisonous and could lead to cancer. Chromium in floppy disks, lead in batteries and computer monitors, and mercury in alkaline batteries pose severe health risks.

Since recycling of e-waste often results in very high costs, developed countries have a tendency to dump their

7 Figures regarding major exporters of e-waste are available at the Electronics TakeBack Coalition website: www.electronicstakeback.com/Tools/Facts_and_Figures.pdf

e-waste into underdeveloped countries like Pakistan, often after the equipment has become obsolete. In Pakistan, e-waste dumping is encouraged by a number of legal, economic, social and political factors. Disparities in domestic legal standards between developed and developing countries have encouraged transboundary North-South movements of waste and toxic products. Pakistan faces the problem mainly on two fronts: on the one hand, it is used as the dumping ground for over 50,000 tonnes of e-waste[8] by developed countries and, on the other, it generates thousands of tons of local e-waste every year. However, many industrialised European Union countries have introduced stricter environmental standards and waste disposal legislation and have made regional arrangements concerning transboundary movements.

Pakistan is a signatory to the Basel Convention[9] and ratified it on 24 July 1994. This convention monitors the movement of toxic wastes like e-waste. However, the convention becomes flexible when the goods are to be used for the purpose they were designed for (i.e. old computers are to be used as second-hand machines). As a result, the relevant regulating agencies in Pakistan allow the import of used computers, as these will be reused.

Since much of these consignments are in practice stripped and sent for recycling, the rules of the Basel Convention are actually ignored because the machines are no longer used for productive purposes. For hazardous substances this is the only international environmental treaty signed by Pakistan's government.[10]

The prices of used computers are low compared to new ones, creating an increase in demand for old computers. However, such equipment also uses up more energy and people are unaware of both the environmental and health problems which can arise when these are disposed of, usually in a very short span of time.

Karachi is a major dumping ground for e-waste from all around the world. Although the dumping of waste is prohibited under the EPA Act of 1997,[11] no serious action is taken. Most of the scrap is dumped in the town of Surjani. In the district of Lyari, livelihoods are eked out by hundreds of workers including women and teenage children who dismantle the electronic scrap and extract valuable components such as copper. It may appear to be a convenient choice of making a living on trash, but the workers have no idea of the hazards they are exposed to. They usually burn the plastics without proper safety measures or use furnaces that have serious health consequences.

In the Shershah area, unusable parts and machines are brought to enterprising recycling initiatives, which are overwhelmingly from the informal sector, where occupational safety laws, safety measures and prerequisites such as properly ventilated working areas are rarely in place.

The workers, mostly women and children, are exposed to all sorts of toxins. The waste generated by this industry is dumped in the Lyari River, and eventually finds its way into the Arabian Sea, where it contaminates the marine ecosystem. Some of the waste is dumped in landfills, where it contaminates the soil after leaching through. Such landfill sites are also not properly administered.

So far no strategy has been devised to tackle e-waste in Pakistan, nor are there provisions to regulate e-waste disposal in the national IT Policy and Action Plan of 2000.[12] At the South Asian Association for Regional Cooperation (SAARC) level there is a ban on hazardous waste and radioactive waste in its environmental strategic development goals,[13] but unfortunately e-waste is not included in it.

Given the above background and issues, Mobilink, a leading mobile phone operator in the country, has initiated the Mobilink Handset Recycling Program,[14] in collaboration with the Pakistan Association of the Deaf (PAD) and the Disabled Welfare Association (DWA). This programme aims at sharing the benefits of mobile communication with the hearing impaired and the disabled, as well as minimising the environmental impact of e-waste through recycling.

Old and damaged mobile phones, batteries, chargers and accessories, irrespective of the model and make, are donated by simply dropping them in the recycling bins that have been specifically placed for this purpose at select Mobilink centres across Pakistan.

The company has teamed up with Ring Pakistan, a leading multinational specialising in GSM products and after-sales services, to restore functionality using high environmental and social standards. Repairable and partially repairable mobile phones and accessories are shared with PAD and DWA.

The donated mobile phones found to be unusable are disposed of in proper manner by Waste Busters,[15] an internationally recognised, fully integrated waste management organisation.

E-waste is an issue which clearly must be addressed immediately before it becomes even more of a problem. Strategies must be evolved to reduce the generation of e-waste, to prevent the legal or illegal import of such waste, and to develop feasible and safe ways of dealing with it within our own context and requirements. Otherwise the unregulated accumulation of e-waste may well lead to a public health disaster in the near future.

8 www.dawn.com/wps/wcm/connect/dawn-content-library/dawn/news/sci-tech/12-pakistan+a+dumping+ground+for+e-waste--bi-14

9 www.basel.int

10 Details on Pakistan's environmental agreements can be found in Hassan, J. (2005) *Multilateral Environmental Agreements*. www.lead.org.pk/c11-1nts/faculty%20Presentation/Jawad%20hassan.ppt

11 www.pakistan.gov.pk/divisions/environment-division/media/Pakistan_Environmental_Protection_Act.pdf

12 www.pasha.org.pk/_data/userfiles/cmsfile_1204713727_national_it_policy_1_.pdf

13 SAARC Strategic Development Goals: www.saarc-sec.org

14 www.mobilinkgsm.com/about/media/press/recycling.pdf

15 www.wastebusters.com.pk

ICTs and climate change

Pakistan is a low-emission country, but at the receiving end of negative impacts of climate change. Vulnerable as many developing countries are, the focus and attention of policy and development around climate change issues in the country remain on traditional areas including agriculture, water resources, food security and disaster management.

While several ICT-based systems and procedures are deployed to mitigate and minimise climate change impacts (e.g. early warning systems), an integrated approach to look at the use of ICTs and their connection with climate change is still missing.

However, telecommunications operators are now getting increasingly concerned about climate change and how they can adapt to minimise its negative impacts. On 9 August 2010, the Pakistan Telecommunication Authority (PTA) and cellular mobile operators in Pakistan signed a memorandum of understanding[16] on infrastructure sharing. By signing this memorandum, the mobile companies have agreed on the long-awaited tower-sharing concept, which had been implemented on a small scale earlier. This arrangement will greatly help reduce environmental hazards and fuel costs for running mobile phone towers. It is expected that wireless local loop (WLL) companies will follow suit. A group has been formed that will recommend the procedures for sharing towers for WLL companies operating in Pakistan.

Action steps

The e-waste issue so far has received little attention from the government and NGOs. To date, no scientific study has been made to assess the impact of e-waste processing on our environment. There is no reliable data available on the volume of used electronic components imported and the fraction of it recycled or dumped as solid waste. There is a dire need to determine the detrimental impact of e-waste processing on public health. This necessitates fast-tracking measures and a national strategy to avoid transforming the cities of Karachi and Lahore into dump yards.

A combination of legal, economic, social and political factors are contributing to the emergence and expansion of movements of hazardous waste and products from industrialised to developing countries. The majority of the world's toxic pollution is produced in Organisation for Economic Co-operation and Development (OECD) countries, which generate more than 95% of all hazardous waste – the principal waste-exporting countries being Germany, the Netherlands, the United States, the United Kingdom and Australia.

In order to address the e-waste crisis in Pakistan:

- In its forthcoming IT Policy, the government of Pakistan must include the issues of greening ICTs and e-waste disposal as priority objectives with proper provision for financial and human resource support.
- Funding should be set aside for the implementation of the various provisions of the Basel Convention.
- A special fund should be set up by OECD countries to help educate workers in the industry, as well as law-enforcing agencies, regarding the hazards from e-waste.
- Raising awareness about e-waste issues is necessary at different levels including government, NGOs, the private sector and the general public.
- To ensure sustainable e-waste management, an adequate regulatory and legal framework has to be developed and implemented.
- To meet the greening ICTs objectives, telecommunications operators should also think of sharing other resources such as optical fibres, franchises, customer care centres, etc.
- The improved coordination of government departments for regulating e-waste and greening ICTs in Pakistan is necessary. ■

16 www.pta.gov.pk/index.php?option=com_content&task=view&id=1420&catid=92&Itemid=301

GLOBAL INFORMATION SOCIETY WATCH 2010

GLOBAL INFORMATION SOCIETY WATCH 2010 investigates the impact that information and communications technologies (ICTs) have on the environment – both good and bad.

Written from a civil society perspective, **GISWatch 2010** covers some 50 countries and six regions, with the key issues of ICTs and environmental sustainability, including climate change response and electronic waste (e-waste), explored in seven expert thematic reports. It also contains an institutional overview and a consideration of green indicators, as well as a mapping section offering a comparative analysis of "green" media spheres on the web.

While supporting the positive role that technology can play in sustaining the environment, many of these reports challenge the perception that ICTs will automatically be a panacea for critical issues such as climate change – and argue that for technology to really benefit everyone, consumption and production patterns have to change. In order to build a sustainable future, it cannot be "business as usual".

GISWatch 2010 is a rallying cry to electronics producers and consumers, policy makers and development organisations to pay urgent attention to the sustainability of the environment. It spells out the impact that the production, consumption and disposal of computers, mobile phones and other technology are having on the earth's natural resources, on political conflict and social rights, and the massive global carbon footprint produced.

GISWatch 2010 is the fourth in a series of yearly reports critically covering the state of the information society from the perspectives of civil society organisations across the world.

GISWatch is a joint initiative of the Association for Progressive Communications (APC) and the Humanist Institute for Cooperation with Developing Countries (Hivos).

GLOBAL INFORMATION SOCIETY WATCH
2010 Report
www.GISWatch.org

ISBN 92-95049-95-0
9 789295 049956

APC

HIVOS