

GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and
a sustainable world: Responses from
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch 2020

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ARGENTINA

REUSE OF TECHNOLOGY AND RIGHTS: WORK, ACCESS AND A HEALTHIER ENVIRONMENT



Nodo TAU

María Florencia Roveri
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Introduction

Waste from the disposal of electronic devices is a growing environmental problem. These technologies, especially those used for information and communications, are now central to everyday life, even more so in the current context of social isolation due to the COVID-19 pandemic.

Many voices are expressing that technological innovation is the solution to the main problems of humanity, hand in hand with developments in artificial intelligence (AI), the internet of things (IoT) or new forms of connectivity.¹ Others, however, are warning that these solutions lead to a disproportionate increase in the consumption of devices, the production of which implies the increased extraction of natural resources, energy consumption and the generation of waste.

Collecting, recovering, refurbishing, reusing, repairing and recycling are concepts that delineate the links of a chain that in different ways extend the life cycle of appliances or their components, reducing their impact on the environment, and promoting the creation of new jobs. At the same time, devices are made available to groups that did not have access to them before.

In this report we discuss projects that deal with the treatment of e-waste in different ways, working towards the realisation of a healthier environment, while providing employment for people and reducing the digital divide.

Background

The institutional framework for environmental care in Argentina started with the reform of the National Constitution in 1994, with its article 41 that recognises that all inhabitants have “the right to enjoy a healthy, balanced environment, suitable for human development and for productive activities to satisfy

present needs without compromising the needs of future generations,” and also that they have “the duty to preserve it.” Later, the General Law on the Environment established “the minimum budgets for sustainable and adequate management, preservation and protection of biological diversity and the implementation of sustainable development.”² Besides this, since 2015 Argentina increased the range of environmental issues with the creation of its Ministry of the Environment.

The treatment of waste has specific legislation such as Law 25,916 for the Comprehensive Management of Household Waste, with special programmes for waste that may present risks, and Law 24,051 on Hazardous Waste, considered expired and creating conflict between national and provincial regulations.³

Waste from electrical and electronic equipment (WEEE) has two particularities: it contains elements of high danger for the environment and health, and it is the waste mostly reused in its parts and materials, with up to 90% of it recoverable.⁴ The materials that can be recovered are minerals, metals, plastics and printed circuits that have a high value for the metals they contain. As these circuits are not feasible to recover in Argentina, they are exported to companies in Europe and the United States.

Treating WEEE as “household waste” may imply that there are few risks involved, that it can be hoarded indefinitely or discarded with other waste in the landfill. In turn, considering WEEE as “hazardous waste” complicates the procedures for transportation, collection and treatment. Specialists affirm that as long as the equipment is kept entire, without disassembling it, it should not be considered dangerous.

Due to the lack of specific legislation for WEEE, international conventions ratified by Argentina are applied to e-waste, such as the Basel Convention on the Control of Transboundary Movements of Hazardous

¹ See, for example, the session at the 2020 Internet Governance Forum (IGF) on “How AI, 5G and IoT can save the planet”, at: <https://intgovforum.org/multilingual/content/igf-2020-ws-319-how-ai-5g-and-iot-can-save-the-planet>

² <http://servicios.infoleg.gob.ar/infolegInternet/anexos/75000-79999/79980/norma.htm>

³ <https://www.argentina.gob.ar/sites/default/files/estructura-normativa-de-residuos-1.pdf>

⁴ Nodo TAU. (2016, 18 September). TIC, residuos electrónicos y desarrollo sostenible. APC. <https://www.apc.org/es/news/tic-residuos-electr%C3%B3nicos-y-desarrollo-sostenible>

Wastes and their Disposal⁵ and the Stockholm Convention on Persistent Organic Pollutants,⁶ among others. The Basel Convention also establishes the principle of extended producer responsibility (EPR), a fundamental instrument of waste management policy.

There were two attempts to promote WEEE management laws in Argentina. In 2011, a bill that included EPR obtained half sanction in the Senate, but the resistance of companies to assume this obligation interrupted the progression of the legislation. In 2018, this bill was presented again, including with the support of Greenpeace,⁷ but its progress through the Senate was stopped again. Today, the management of waste treatment is sustained in local government programmes and initiatives by small enterprises, regulated in some cases by provincial legislation.

In 2019, the government relaxed, through a decree, the import requirements of waste from other countries, a setback in environmental matters that placed Argentina at risk from the possible entry of hazardous waste. The current Ministry of the Environment repealed it with another decree,⁸ arguing that “it went against the promotion of a recycling industry, the development of the circular economy and the comprehensive management of waste and its recovery.” The Ministry also set up a Technical Working Table on the Circular Economy to “promote the recovery of waste generated in our country as input for industrial processes or products for direct use.” This table considers all types of waste, including scrap metal, but does not specify WEEE.

Consumption and disposal vs. reuse and rights

A constant in local environmental policies is the tension between environmental care and the economic interests of productive sectors (paper, mining, agriculture).⁹ Economic systems that are sustained through consumption promote the excessive production and commercialisation of products, and the unsustainable extraction of resources from the Earth. It involves the increasingly shorter life cycles

of the products – related to planned obsolescence – and an increase in the generation of waste.

In the meantime, electrical appliances and especially information and communications technology (ICT) devices have become essential tools, required to solve more and more tasks – but this does not imply that they are more and more accessible. This tension between needs and difficulties in access to technology continues to increase the digital divide. This time of isolation during the pandemic has evidenced this gap even more.

Circular economy and WEEE

Electrical or electronic equipment (EEE) becomes WEEE when the user decides to not use it anymore. The useful life of an electronic device varies considerably according to the type of device and factors such as the existence of a culture of reuse, the ease of access to new technologies or the economic situation, among others.¹⁰ In Argentina, all three of these factors are important, and impact differently on the e-waste situation.

From a circular economy approach, when EEE is discarded, if it still works properly, it can be reused; if it does not work well, it can be repaired by technicians or people interested in learning. If it is not possible to refurbish the technology, its parts can be used to repair other devices, or it can be disassembled into its primary materials to use them in new production processes. If none of the above occurs, it goes to final disposal. This is the menu of possibilities for EEE in the process of becoming WEEE.

From refurbishing, a path branches into the new use of the device. The Barcelona-based organisation eReuse.org¹¹ developed a traceability and certification methodology for computing devices to formalise the extension of the use of the repaired devices. They also propose that the definition of the destination of the device should be collective – that is, it should be useful for social and collective purposes and as a social good:

Socio-economic-environmental interactions take place between people involved in the Circular Economy as they manage and govern the material commons made up of a set of devices, components and raw materials.¹²

5 <https://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>

6 <https://www.pops.int>

7 Cámara de Diputados de la Nación. (2018, 6 September). Nueva presentación de la ley de gestión de residuos y aparatos electrónicos. https://www.diputados.gov.ar/prensa/noticias/2018/noticias_0708.html

8 <https://www.boletinoficial.gob.ar/detalleAviso/primera/225465/20200214>

9 Gutiérrez, R. A., & Isuani, F. J. (2014). La emergencia del ambientalismo estatal y social en Argentina. *Revista de Administração Pública*, 48(2). <https://doi.org/10.1590/0034-76121700>

10 Maffei, L., & Burucua, A. (2020). *Residuos de Aparatos Eléctricos y Electrónicos (RAEE) y empleo en la Argentina*. ILO. https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---ilo-buenos_aires/documents/publication/wcms_737650.pdf

11 <https://www.ereuse.org>

12 Franquesa, D., & Navarro, L. (2018). Devices as commons: limits to premature recycling. *Proceedings of the 2018 Workshop on Computing within Limits*. <https://computingwithinlimits.org/2018/papers/limits18-franquesa.pdf>

Environmental impact

The world generated 53.6 million metric tonnes of e-waste in 2019,¹³ 7.3 kilograms per year per inhabitant, 21% more than in 2014. If no measures are taken, it will grow 56% more by 2030, doubling the amount in 16 years. Argentina generates around 8.4 kg of e-waste per person annually,¹⁴ higher than the world average and the average in the region, although below Mexico and Brazil in volume of waste, and Chile and Uruguay in waste generation per inhabitant.

Multiplied by the 42 million inhabitants, there is an annual generation of 360,000 tonnes of e-waste in the country. It is estimated that between 50% and 60% is stored in homes and small institutions, due to lack of knowledge about disposal procedures.¹⁵ Only 10% to 15% goes to repair shops and technical services, and 5% to 10% is recycled to recover materials. It is estimated that 60% of WEEE ends up in landfills, without an adequate recycling process.¹⁶

The environmental impact of e-waste lies in its components and how they are treated. They contain heavy metals, such as lead, mercury, cadmium and beryllium, and dangerous chemicals such as brominated fire retardants, which affect the hormonal, nervous, reproductive, circulatory and urinary systems, and can produce allergies and even cancer.¹⁷ The main risks posed by WEEE that is poorly treated or in uncontrolled landfills are the possibility that the compounds are released into groundwater through the ground or into the air during fires. According to the UN Environment Programme, the practice of burning is frequent, and the damage can reach global dimensions by emitting

persistent organic and inorganic compounds, such as dioxins, furans and mercury vapour.¹⁸

The sector most exposed to these toxic substances is that of informal urban recyclers, due to lack of knowledge or means to handle these components. Many of them – particularly unorganised workers – treat waste at home, including the incineration of cables or other materials, generating situations of contamination for themselves, their families and their general environment.¹⁹

Work reality of WEEE

Electronic waste, in addition to being a serious environmental problem, constitutes new sources of employment in tasks such as collection, recovery, repair, recycling, separation, disassembly, material recovery and export. Most recently, the erasure of computer data has emerged as an important employment opportunity

The International Labour Organization (ILO) is developing several reports on WEEE and employment in Argentina, focusing on working conditions, professional skills²⁰ and the promotion of green employment.²¹ One of their most recent works analyses the WEEE value chain, revealing the situation in different provinces.²² According to these reports, it is estimated that the activities of treatment and recovery of materials generate about 3,000 jobs, while the repair of equipment is responsible for another 33,000. Other studies differ significantly in the figures, which shows the difficulty in accessing comparable statistics.

In Argentina, according to the ILO, even without a WEEE law, in the segments of the chain that are economically sustainable – either because there is a market for recycled products or because of the support of state agencies – the activity is carried out with adequate environmental standards and creates quality jobs. This reality is limited to the capital of the country and the four provinces with more economic activity, with equipment coming from the public sector and medium-sized and large

13 Forti, V., Baldé, C. P., Kuehr, R., & Bel, G. (2020). *The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential*. United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR) – co-hosted SCYCLE Programme, International Telecommunication Union (ITU) & International Solid Waste Association (ISWA). https://www.itu.int/en/ITU-D/Environment/Documents/Toolbox/GEM_2020_def.pdf

14 Baldé, C. P., Forti, V., Gray, V., Kuehr, R., & Stegmann, P. (2017). *The Global E-waste Monitor 2017: Quantities, flows and resources*. United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA). <https://www.itu.int/en/ITU-D/Climate-Change/Documents/GEM%202017/GEM%202017-E.pdf>

15 Fernández Protomastro, G. (2013). *Minería urbana y la gestión de los recursos electrónicos*. Grupo Uno. <https://mineriaurbana.org/libro-mineria-urbana>

16 Maffei, L., & Burucua, A. (2020). Op. cit.

17 ILO. (2019a). *Estimación del empleo verde en la Argentina. La cadena de valor de los desechos electrónicos*. ILO. https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---lo-buenos_aires/documents/publication/wcms_750434.pdf

18 ONU Medio Ambiente. (2018). *Perspectiva de la gestión de residuos en América Latina y el Caribe*. Programa de las Naciones Unidas para el Medio Ambiente, Oficina para América Latina y el Caribe. https://wedocs.unep.org/bitstream/handle/20.500.11822/26448/Residuos_LAC_ES.pdf?sequence=1&isAllowed=y

19 Maffei, L., & Burucua, A. (2020). Op. cit.

20 ILO. (2019b) *Competencias profesionales para un futuro más ecológico*. ILO. https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_709122.pdf

21 ILO. (2020). *Argentina. Potencial de creación de empleos verdes en un marco de transición justa*. Programa ILO/Empleo Verdes. https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/documents/publication/wcms_749114.pdf

22 ILO. (2019a). Op. cit.

companies, which is the most profitable segment. This involves the most formalised and sustainable sector of the WEEE chain, with the estimated creation of some 600 formal jobs.²³

At the same time, informality is one of the main problems in waste treatment, as 84% of workers are informal recyclers, the most precarious link in the chain. Among them, male labour predominates, although with a higher proportion of women and young people than in other segments and with participation of child labour in the recovery of waste (9,000 or 10% are women).²⁴

Training is the main factor of inequity in access to employment. A minority of the workers registered in the collection segment of the work chain have completed secondary studies, while in repairs, the majority have secondary or higher studies. It is also training that could transform inequity in relation to women's working conditions.²⁵ A recent report by the UN²⁶ analyses two desirable future employability scenarios: one oriented towards a circular economy and the other towards energy sustainability. In both cases, job creation is subject to investment in training to develop job skills. WEEE is a genuine source of employment in desirable futures, but there must be financing. This is one axis of this issue. Who will assume this responsibility?

Waste collecting in the pandemic

During the social isolation imposed by the pandemic, waste pickers resumed their work sooner rather than later.²⁷ They had to define protocols for their care and control of the spread of the virus. Cooperatives and organised workers were able to do it in better conditions, with more resources to support people. This situation further evidenced the risks of informality.

"The state is lacking!" said a leader of a waste pickers cooperative at a recent webinar on inclusive recycling,²⁸ demanding public policies, prioritisation of each phase of the chain and protection of the most precarious actors from the abuses of other actors. She also called on the awareness of citizens and the media to highlight the social role of

informal recyclers. "Without *cartoneros*,²⁹ we would be swimming in a world of garbage," she said.

Social recovery and access

Other actors have joined the WEEE value chain. According to a report published by the ILO, between 2009 and 2012, in the times of the WEEE legislative debate in Argentina, various initiatives addressed the recovery of computer equipment for social inclusion and shortening the digital divide, while generating opportunities for professional training, job placement and income.³⁰ These undertakings contribute to education, information and communication, tasks in which social organisations were pioneers.³¹

The following are some of these programmes:

- The E-Waste Programme of the University of La Plata, with the volunteer work of students, carries out the reuse of equipment that is donated by being left at a place assigned by the provincial government. The resulting WEEE is treated through authorised operators. They also carry out training and outreach and awareness work.
- The Disposal of Disused Technologies Programme,³² implemented by the Buenos Aires Penitentiary Service, organises social recovery initiatives in prisons. About 40 inmates work there.³³ They receive computers from public agencies or companies. If the computers cannot be repaired, they sell the materials in the open market. To collect devices, they carry out campaigns with municipalities, ministries or companies.
- The civil association Nodo TAU.³⁴ Since it started, Nodo TAU has been dedicated to the recovery of computers for social organisations and community telecentres. After developing experience in training in the treatment of WEEE, in 2019 Nodo TAU completed the commissioning of a computer waste management plant dedicated mainly to refurbishing. Young people are trained and work there, within the framework of a provincial employment programme. The training includes computer

23 Ibid.

24 INDEC. (2018), *Encuesta de Actividades de Niños, Niñas y Adolescentes 2016-2017*. http://white.lim.ilo.org/ipecc/documentos/eanna_2018.pdf

25 ILO. (2019b). Op. cit.

26 ONU Medio Ambiente. (2018). Op. cit.

27 Sulé Ortega, J. (2020, 22 June). El papel esencial de los recicladores en tiempos de pandemia. *El País*. https://elpais.com/elpais/2020/06/12/planeta_futuro/1591966071_168333.html?ssm=TW_CC

28 <https://bit.ly/2Ps15SS>

29 *Cartoneros* is the term used in Argentina for waste pickers/informal recyclers. It is derived from the word *cartón*, or cardboard, so it roughly translates as "people who collect cardboard".

30 Maffei, L., & Burucua, A. (2020). Op. cit.

31 ONU Medio Ambiente. (2018). Op. cit.

32 Servicio Penitenciario Bonaerense. (2020, 8 June). Extenderán a diez las plantas de reciclado de tecnología en desuso. <http://www.spb.gba.gov.ar/site/index.php/component/content/article/100-institucion/10496-extenderan-a-diez-las-plantas-de-reciclado-de-tecnologia-en-desuso>

33 ILO. (2019a). Op. cit.

34 <https://tau.org.ar/raee-planta>

repair, materials recycling, the sorting of circuit boards, good environmental practices, social economics, marketing and management.

Access costs and policies

Despite the increasing consumption rates of computers and mobile phones, access continues to be a pending right for a high percentage of the population. Latin America is defined as the most unequal region on the planet, and this inequity is also manifested in access to technology. In 2019, it was recorded that although 82.9% of the population of Argentina has access to the internet, only 60.9% of urban households had access to a computer; so 40% of the population does not have a desktop device to access.³⁵

The digital divide worsens when quality of connectivity is considered. In the province of Santa Fe, only 18% of the population has access to a quality connection. The Alliance for Affordable Internet (A4AI) recently released the “meaningful connectivity standard”,³⁶ defined in terms of type of connectivity, devices used and information accessed. The statistics shared in this study show a higher access rate in urban centres, in sectors with higher literacy rates, and more among young people than in older people, showing the existing gaps.

This reality was debated after the rise of telework and distance education in the context of social isolation. In some working-class neighbourhoods in the city of Buenos Aires, 60% of households have only one mobile phone.³⁷ How is technological appropriation promoted with access sustained by mobile phones? Different voices, especially from the educational field, affirm that access from a mobile phone promotes a consumer role, not only of technology but also of content, while desktop devices allow a more productive use of these resources.

Policies for access to devices

The government has developed policies in Argentina to promote access to technology. Among these, two programmes stand out:

- The “My PC” programme, launched by the Ministry of the Economy in 2005, has encouraged the purchase of computers with financing from public and private banks. It continues today,

and specifically targets retired people. However, the costs of the devices are very high, equivalent to approximately seven minimum pensions. Very recently, the government launched a programme for teachers, who exhausted the available stock in four hours, highlighting the great need for these devices.³⁸

- The Conectar Igualdad (CI) programme,³⁹ implemented by the Ministries of Education and Planning, distributed five million netbooks to students in public secondary schools and teacher training institutes between 2011 and 2015. The programme was discontinued in 2016, but the current government announced it will resume the programme. It was praised in the country and across the world, although it has also received criticism, particularly about its computer repair policy.⁴⁰ Similar experiences in the region also dealt with this aspect. The Ceibal programme in Uruguay⁴¹ developed a strategy for the treatment of broken devices, while Canaima Educativo in Venezuela⁴² received similar criticism as CI.

During isolation, with the growing need to work from home and to support education, the demand for computer repair and repaired computers increased in general. Many CI netbooks were repaired, both in homes and in schools, to be used by students.⁴³ It is important to note that CI netbooks use free software which, unlike proprietary software, facilitates their refurbishing.

Mobile phones: An issue on their own

Mobile phones are devices with a faster obsolescence, and with a circuit of repairers who limit reuse due to lack of spare parts. Statistics are difficult to access in this field. However, the GSMA,⁴⁴ the world chamber of mobile phone companies, provides

35 INDEC. (2020). *Acceso y uso de tecnologías de la información y la comunicación*. https://www.indec.gov.ar/uploads/informedesdeprensa/mautic_05_20A36AF16B31.pdf

36 <https://mailchi.mp/webfoundation/meaningful-connectivity-unlocking-the-full-power-of-internet-access>

37 https://www.youtube.com/watch?v=Hx_WSsjNszs&feature=youtu.be

38 *Página/12*. (2020, 1 August). En sólo cuatro horas se cubrieron los primeros créditos para que los docentes compren computadoras. *Página/12*. <https://www.pagina12.com.ar/282235-en-solo-cuatro-horas-se-cubrieron-los-primeros-creditos-para>

39 https://es.wikipedia.org/wiki/Conectar_Igualdad

40 Roveri, F. (2016, 8 April). Desconexión sideral: desmantelamiento del Programa Conectar Igualdad en Argentina. *APC*. <https://www.apc.org/es/en/node/21592>

41 Mántaras, P. (2020, 27 July). La otra vida de la máquinas. *Galería Montevideo*. <https://galeria.montevideo.com.uy/Revista-Galeria/-Como-se-gestionan-y-a-donde-van-a-parar-los-desechos-electronicos-en-Uruguay--uc759315>

42 <http://canaimaeducativo.me.gob.ve/>

43 CONICET. (2020, 8 July). Inclusión digital: bases para una continuidad pedagógica a distancia de emergencia. *Nodal*. <https://www.nodal.am/2020/07/argentina-inclusion-digital-bases-para-una-continuidad-pedagogica-a-distancia-de-emergencia-por-conicet/>

44 <https://www.gsma.com/latinamerica>

indices from the sector perspective in Latin America. In its 2019 report,⁴⁵ it indicates that in Argentina there is a 60% penetration of mobile phone subscribers, and a 69% adoption of smartphones. This is a figure that can also be read as an indication of the number of people without mobile access.

Zelucash⁴⁶ is a company dedicated to the refurbishing of mobile phones. It buys smartphones that are no longer being used through an internet platform, and refurbishes and sells them with a guarantee at affordable prices. “Before the concept of used electronic products with a guarantee existed, people discarded their phones in 12 or 14 months,” explains the founder of the company. Now, the guarantee of quality and legitimate origin of these devices (that is, they are neither stolen nor counterfeit) can extend their use for up to four years, he added.⁴⁷

Cultural change and reuse every day

One key aspect of the waste problem is the habits of the population. In the case of electronic waste, reuse presents the complexity of repairing devices, the technical knowledge involved or the difficulty of accessing spare parts, in a market that encourages throwing away and buying new. Another consumer model is possible, and choosing repair over disposal is also possible.

There are initiatives in Argentina that promote repair as a key advocacy issue, some inspired by experiences from other countries, putting the prevailing consumption model on the agenda, while promoting a cultural change.

- The organisation Artículo 41⁴⁸ launched Club de Reparadores⁴⁹ (“Repairers Club”) as an itinerant repair event. They hold meetings between those who repair, those who want to learn and those who need this service. In the context of the pandemic, the meetings are held online. They recently launched a repair guide⁵⁰ that publishes repairers by ICT item on a map, limited to the city of Buenos Aires.

- Donde Reciclo⁵¹ (“Where Do I Recycle?”) is an initiative that disseminates information on recyclers, recycling points and knowledge on how to recycle. It is related to Mercado Limbo,⁵² which publishes products made from reused materials. The site facilitates the collection of WEEE (including equipment and batteries) that is then referred to companies that carry out proper WEEE management.⁵³

Hacker and feminist values

The initiatives that promote cultural change with regards to consumption and disposal allude to principles close to the hacker philosophy and its relationship to technology.⁵⁴ The promotion of reuse refers to values such as shared technical knowledge, open codes, collective action, collaborative mapping and the democratisation of information.

It is interesting to observe this parallel in discourses between those who promote the extension of the life of devices as an ecological practice and those who work towards democratising access to technology and knowledge. It creates a kind of metaphorical feedback between the culture of reuse and the progressive activism on technology for the promotion of rights.

There is also a confluence of concepts in relation to feminism. The initiatives that try to mitigate the negative effects of the massive consumption of technology align with the proposals of feminist economics, cyberfeminism and ecofeminism,⁵⁵ with their ways of sustaining life more anchored in nature and in life cycles than in extraction and disposal. They see resources as common goods, and part of a collective and community responsibility. This is a whole paradigm shift.

Is the work on sustainability sustainable?

Waste treatment policies are aligned with environmental sustainability. But are programmes that support waste treatment sustainable? Most of the actors linked to waste management mention sustainability as a problem. The costs of recovery and recycling do not cover the costs of the proper management of waste. The extent of responsible consumption is still incipient as a source

45 GSM Association. (2019). *La economía móvil en América Latina 2019*. GSMA. <https://www.gsma.com/latinamerica/wp-content/uploads/2020/02/Mobile-Economy-Latin-America-2019-Spanish-Executive-Summary.pdf>

46 <https://www.zelucash.com>

47 Torino, M. (2019, 2 November). La república de la basura electrónica. *Aconcagua.lat*. <https://aconcagua.lat/cambiar/la-republica-la-basura-electronica/>

48 <https://articulo41.org>

49 <http://reparadores.club> and <https://www.facebook.com/ClubDeReparadores>

50 <https://reparar.org/proyecto>

51 <https://www.dondereciclo.org.ar>

52 <http://www.mercadolimbo.com>

53 ILO. (2019a). Op. cit.

54 Himanen, P. (2002). *La ética hacker y el espíritu del informacionalismo*. <http://eprints.rclis.org/12851/1/pekka.pdf>

55 Araiza Díaz, V., & Martínez Quintero, A. (2017). Tejiendo lo común desde los feminismos: economía feminista, ecofeminismo y ciberfeminismo. *Boletín Científico de Ciencias Sociales y Humanidades de ICSSH*, 5(10). <https://www.uaeh.edu.mx/scige/boletin/icshu/n10/ea.html>

of transformation in society: “refurbished” is not a valued stamp of approval on technological devices in this country yet.⁵⁶

At the same time, there are strategic tasks involved in waste treatment that nobody wants to pay for – the removal of disused devices, for example. As in other spheres, these tasks also require the support of the state – in case profitability is not guaranteed – which needs to understand waste management as a public service and also as an economic activity.⁵⁷

“But not only the state,” says Protomastro,⁵⁸ a specialist in WEEE management, who adds:

We must achieve a standard that involves all the value chains, because it is a problem that we all generate and we must therefore all participate in the solution. This should be neither a free hand to the market nor a compulsive obligation on manufacturers. The solution lies in shared responsibility.

Conclusion

Access to devices that allow communication remains a right that is not guaranteed to all of society. These devices are immersed in a system that overwhelms environmental resources, that leaves them out of date before their time, and that generates a significant amount of waste that is complex to manage correctly. At the same time, the increase in the use of devices consumes energy not only in their production but also in their use, and the resulting environmental impact is not yet clearly visible.⁵⁹ This model also implies a reduction in employment, due to procedures that are automated, either through robotics or the application of artificial intelligence, and that limit the possibility of repair.

From this reality we try to find strategies that modify this panorama. The reuse and recovery of technologies has political, economic, social and also cultural aspects, rooted in individual and institutional behaviours that must be transformed. The incentive for reuse, repair and recycling policies not only reduces the waste that is generated but also generates sources of work in tasks carried out to extend the useful life of the devices, their recycling

or their correct final disposal, and at the same time it recovers devices for social actors who have difficulties in access to them.

In Argentina, a specific law is pending to regulate the treatment of electronic waste that takes into account the reality and needs of all the actors in the chain, their responsibilities and their vulnerabilities. This law would prioritise tasks and pour resources into their improvement. In this regard, the current minister of the environment declared:

Paradigm shifts occur when there is support from the population. Wanting to change something deeply rooted from the norm can be a problem. We must work hard to create cultural change and awareness [...] so that the productive sector feels obliged to rethink its methods. There is a global trend to better understand these issues, there are new debates, and when there is concern in society, change is inevitable. The output is collective and it is social.⁶⁰

The main challenge is to sensitise the actors so that they are aware of their responsibilities, encouraging each sector to assume the costs of doing so.

What is necessary to expand reuse? A change in behaviour of the population (which involves *individual responsibility*), a focus on the environment, employment and the way in which people can access and use technology (*responsibility of companies* that produce technology and treat e-waste), and a state that regulates and articulates the e-waste value chain (*governmental responsibility*).

What is at risk is *our future*, the future of our communities, the future of the world, which will be sustainable if all the parts involved are sustainable. This future, today, is even more threatened by a virus that challenges us to do things differently:

We will save ourselves from the virus. From the world as it is, as it is governed by corporations and financial capitalism, we will not. I am left with that minimal portion of cultivated land, with the notion of space, geography, border, I am left with the body that is not split from technology, from garbage. [...] The sea, the mountain, the desert are what remain. Almost the only thing we can look at and feel to seek peace these days is the sun that enters through our windows, reaches a corner of our confinements and fills our lungs with extreme vitality, keeping us away from nightmares, taking away our fear. The resistance is just beginning. And in its DNA it is

56 Ernst, C., Rojo Brizuela, A. S., & Epifanio, D. (2019). Empleos verdes en la Argentina: oportunidades para avanzar en la agenda ambiental y social. *Revista de la CEPAL*, 129. https://repositorio.cepal.org/bitstream/handle/11362/45007/1/RVE129_Ernst.pdf

57 ONU Medio Ambiente. (2018). Op. cit.

58 Hiba, J. (2017, 11 April). Basura electrónica: un problema que puede convertirse en oportunidad. *enREDando*. <https://www.enredando.org.ar/2017/04/11/basura-electronica-un-problema-que-puede-convertirse-en-oportunidad>

59 <https://theshiftproject.org>

60 Ciancaglini, S. (2020, 5 July). Reciclado. Entrevista a Juan Cabandí. *Lavaca*. <https://www.lavaca.org/portada/reciclado-entrevista-a-juan-cabandí/>

viral and revolutionary. The future is this, what happens to us today, and no one can prevent it from being our future.⁶¹

Action steps

Many challenges arise at the intersection of the environment, labour and access. We highlight:

- The need to disseminate information on the problems generated by the consumption of devices and the benefits of reuse.
- The promotion of local perspectives. Whether because of the impact of extractive industries, or the discarding of e-waste in landfills, local communities are affected by the problem of e-waste, and benefit from its solutions. Regulatory frameworks need to be debated at the local level, based on local experiences, limitations and requirements (financing, training, technical assistance).
- Making the work of collectors, repairers and recyclers visible, as well as the social responsibilities of the different actors involved. There is a need to analyse motivations to fulfil these responsibilities and evaluate incentive systems.
- The systematisation of WEEE data collection and control of procedures and social and demographic indices, so that they are comparable.
- Creating spaces for meeting and dialogue between actors in the value chain: the state, private companies, workers, unions and environmental, social and digital organisations.
- Strengthening links with the academic field to improve mechanisms and technological innovations and to review the e-waste value chain from different spheres of knowledge (engineering, economics, social sciences) to form an interdisciplinary perspective on the management of WEEE.

61 Alarcón, C. (2020, 12 April). Pandemia y dilemas por venir. Nuestro futuro. *Revista Anfibia*. http://revistaanfibia.com/cronica/nuestro-futuro/?utm_source=email_marketing&utm_admin=70077&utm_medium=email&utm_campaign=Mi_vida_te_extrao

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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