


e-waste

SURVEY FY 2023-2024

**The State of E-Waste Awareness,
Disposal & Management in
The Republic of South Sudan**



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DID YOU KNOW?

E-waste is the fastest growing solid waste stream in the world!

In 2019, an estimated 53.6 million tonnes of e-waste were produced globally, but only 17.4% was documented as formally collected and recycled.

E-waste recycling activities may have several adverse impacts on human health. Children and pregnant women are particularly vulnerable.

DATA SOURCE



**World Health
Organization**

Foreword

Napoleon Adok Gai

Director General
National Communication Authority



National Communication Authority–NCA is proud to announce our partnership with government institutions, international organizations, national non-governmental organizations, and private households/companies in Juba to tackle the pressing issue of e-waste through our comprehensive survey.

In today's digital era, electronic devices have become indispensable to our daily lives. Yet, with technological progress comes the alarming rise of electronic waste, posing significant environmental and health hazards if not managed responsibly.

As a government regulator supervised by the Minister of Information Communication Technology and Postal Services, National Communication Authority–NCA is unwavering in our commitment to sustainability and environmental stewardship. Our survey aims to shed light on current attitudes and practices surrounding e-waste disposal, particularly in Juba-city, as a representative sample area in South Sudan.

Covering crucial aspects such as awareness levels, disposal practices, and recycling options, this survey seeks to empower us with invaluable insights. Rest assured, all responses will remain anonymous and will be utilized solely for governmental purposes and policy formulation.

National Communication Authority–NCA firmly believes that the data gathered will serve as a cornerstone for developing effective strategies and policy programs to combat the e-waste crisis. By participating in this survey, our esteemed institutions are championing a greener, more sustainable future where the life cycle of electronic devices is managed responsibly.

We extend our heartfelt appreciation to all participants for their invaluable contributions. Together, let us heed the call to action and embark on a journey towards a cleaner, healthier environment. Let us unite in our collective dedication to environmental stewardship, paving the way for a brighter tomorrow.

Acknowledgement

Eng. Philip Apiu

Assistant Director Spectrum Management &
Team Leader of E-waste Management Committee
National Communication Authority-NCA



The National Communication Authority-NCA extends its sincere gratitude to the multitude of institutions that contributed to the successful execution of this survey. Spearheaded by Eng. Philip Apiu, Assistant Director for Spectrum, and Mr. Bilek Kuol, Monitoring and Evaluation Manager, on behalf of the National Communication Authority, this collaborative effort has been instrumental in shedding light on the pressing issue of e-waste.

We would like to express our heartfelt appreciation to all individuals, organizations, and institutions whose combined efforts have made this survey a reality. Your invaluable contributions have enabled us to gather essential data on e-waste, furthering our understanding of its environmental impact and the urgent need for sustainable management practices.

By participating in this survey, we collectively strive towards finding solutions to the e-waste challenge and raising awareness about the importance of responsible electronic waste management. Rest assured, the National Communication Authority-NCA is committed to treating all survey responses with the utmost importance, ensuring accuracy and honesty in our analysis.

Should there be any additional steps required or further communication needed, we encourage open dialogue and candid responses. Your feedback is invaluable in shaping our approach towards addressing e-waste effectively.

Furthermore, we extend our sincere appreciation to the e-waste consulting firm, Economic Forum & Research Policy, and its team leader, Mr. Peter Dut Maguet. Their dedication in conducting interviews with various organizations, collecting, analyzing, and sharing data findings has been commendable. These findings will serve as a cornerstone in the development of guidelines and policy implementation documents aimed at tackling the e-waste challenge.

The National Communication Authority-NCA acknowledges the importance of understanding and addressing the issue of electronic waste. We remain steadfast in our commitment to providing accurate guidelines and policy regulations on e-waste management in South Sudan.

Message From The National E-waste Steering Committee

Bilek Kuol

Member

South Sudan National E-waste Steering Committee



On behalf of the South Sudan National E-waste Steering Committee, I echo the sentiments expressed in this message. As a member of the committee, I am profoundly moved by the collaborative efforts that have led us to this pivotal juncture.

Our collective commitment to addressing the challenges posed by electronic waste remains unwavering. This survey represents a significant stride towards fostering sustainability and environmental responsibility in our nation.

The engagement and cooperation of government institutions, international organizations, national non-governmental organizations, and private entities in Juba underscore our shared dedication to catalyzing positive change.

Together, we are charting a course towards a greener, more sustainable future for South Sudan.

The insights garnered from this survey will serve as a compass, guiding us in formulating targeted strategies and policy initiatives to effectively manage e-waste.

It is through the collaborative efforts and collective wisdom of all stakeholders involved that we will pave the way for a cleaner, healthier environment and ensure the responsible management of electronic devices throughout their lifecycle.

I extend my heartfelt gratitude to all participants for their invaluable contributions to this endeavor. Your dedication and commitment are indispensable in propelling progress and fostering a culture of environmental stewardship within our nation.

Let us continue to work hand in hand, united in our vision for a better tomorrow, as we strive to create a more sustainable future for generations to come.

Executive Summary

The survey on e-waste conducted in Juba, South Sudan, by the National Communication Authority-NCA has shed light on the concerning proliferation of obsolete electronic waste throughout the country. Since gaining independence in 2011, South Sudan has lacked a structured mechanism for the collection and disposal of e-waste, leading to its accumulation in landfills and posing significant risks to human health, wildlife, and the environment.

In response to this pressing issue, the Economic Forum & Research Policy (E-waste Consulting Firm), in collaboration with the National Communication Authority-NCA, orchestrated survey events in Juba, South Sudan. These events aimed to identify and map out the extent of e-waste accumulation in various offices, providing an opportunity for government institutions, international organizations, national non-governmental organizations, and private companies to safely dispose of their obsolete electronic equipment at centralized collection points.

The initial pilot test of this initiative spanned across 105 institutions in Juba, South Sudan, offering a comprehensive overview of the existing e-waste landscape within office settings. The insights gleaned from this survey will play a pivotal role in informing the government of South Sudan about the urgent need for a structured e-waste management mechanism. Additionally, the findings will serve as a foundation for the development of guidelines and policies pertaining to e-waste management in South Sudan.

Through collaborative efforts and proactive measures, we aim to address the challenges posed by e-waste and pave the way for a more sustainable and environmentally conscious future for South Sudan.



...an opportunity for government institutions, international organizations, NGOs, & private companies to safely dispose of their obsolete electronic equipment at centralized collection points.

List of Acronyms

EEE	—————	Electrical Electronics Equipment
EOL	—————	End-of-Life
NCA	—————	National Communication Authority
EFRP	—————	Economic Forum & Research Policy
ITU	—————	International Telecommunication Union
ICT	—————	Information and Communication Technology
MOEF	—————	Ministry of Environment & Forestry
EWG	—————	E-waste generated
INGOs	—————	International Non-governmental Organizations
NNGOs	—————	National Non-governmental Organizations
SDGs	—————	Sustainable Development Goals
PPT	—————	Public Private Partnership

Key Findings From The Survey

85%

of respondents confirmed the presence of various categories of e-waste in their offices, awaiting disposal.



Institutions surveyed revealed that they store their e-waste in cupboards and occasionally donate them to third-party recyclers.

78%

of interviewed institutions are aware of e-waste collection services provided by partners and third-party agencies involved in recycling and disposal.



Institutions emphasized that improper e-waste management poses significant risks to public health and the environment, including air, water, and soil pollution.

41%

of respondents expressed a preference for the National Communication Authority – NCA and authorized partners to collect e-waste for proper disposal and recycling.

47%

of respondents acknowledged that improper management and recycling of e-waste can have negative impacts on humans, animals, and the environment hence a clear understanding of the threat posed by e-waste.

These findings underscore the urgent need for comprehensive e-waste management strategies and highlight the importance of collaborative efforts between stakeholders to address this critical issue effectively.

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Background

"E-waste" refers to any electrical or electronic device that is unserviceable, irreparable, stored for more than a year, not functioning at 100% of its originally intended capability, or considered obsolete and discarded as waste. This includes electrical and electronic equipment, whether whole or in part, that is discarded by consumers, bulk consumers, or rejected from manufacturer assembler/repairer/dismantler processes.

The issue of e-waste is a growing concern globally, including in South Sudan. While necessary actions can mitigate the threats posed by e-waste, the country primarily faces e-waste from imports since it lacks manufacturing related to electrical and electronic equipment. However, transboundary movement of electrical or electronic waste into the country poses risks to both human health and the environment if not properly disposed of after reaching the end of their operational lives.

Since gaining independence in 2011, South Sudan has faced challenges in the proper disposal and recycling of electrical and electronic waste. The country has limited collection points and lacks national legislation specifically addressing e-waste. Furthermore, there is a lack of data on e-waste generated per capita or formally collected per capita in South Sudan, according to the Global e-waste statistics partnership (www.globalwaste.org).

It is imperative for stakeholders such as the government, private sector, and households to ensure the quick and proper disposal of electronic and technology waste to designated locations. In response to this pressing issue, the National Communication Authority (NCA) conducted an e-waste survey in Juba-city. The survey aimed to develop a collection model for waste electrical and electronic appliances generated from households, government institutions, international organizations, national non-governmental organizations, and private companies.

The ultimate goal of the survey is to develop an appropriate management system for e-waste in South Sudan and prepare guidelines for its collection based on the survey results. This initiative seeks to promote the implementation of an e-waste collection model in the country. The survey results will provide crucial insights into the quantified volume of e-waste accumulated in offices for proper disposal.

The National Communication Authority-NCA is committed to providing policy guidelines and depreciation guidelines for the proper disposal of e-waste in South Sudan based on the information gathered through this survey. This initiative represents a significant step towards addressing the challenges posed by e-waste and promoting sustainable waste management practices in the country.

Purpose

The primary purpose of the E-waste survey is to assess and map out the current volume of electronic waste (e-waste) present in government institutions, international organizations, national non-governmental organizations, private companies, and households in Juba, South Sudan.

Objectives

The E-waste survey is designed to achieve the following objectives:



To evaluate the current volume of e-waste generated by government institutions, international organizations, non-governmental organizations, and private companies in Juba, South Sudan.



To provide relevant recommendations and gather information for potential expansion of e-waste management initiatives to neighboring states in South Sudan.



To assess the disposal practices of each institution regarding obsolete e-waste and evaluate the effectiveness of existing actions taken.



To raise public awareness about the environmental and health impacts associated with e-waste.



To promote public intervention in the proper disposal and recycling of e-waste in South Sudan.



To draft collaborative e-waste guidelines and propose a collaborative policy on e-waste management, fostering cooperation among stakeholders in South Sudan.

These objectives aim to facilitate informed decision-making, promote sustainable e-waste management practices, and mitigate the adverse effects of electronic waste on the environment and public health in South Sudan.

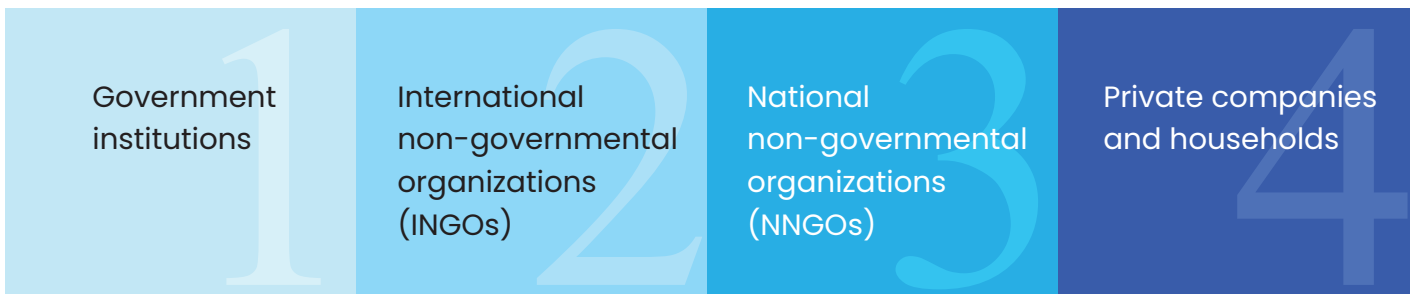
Sampling Method

The survey targeted One Hundred Five (105) institutions within Juba-city as the study area. To ensure representativeness, institutions were randomly selected for inclusion in the survey. This approach was adopted due to Juba's status as a metropolitan town with a multitude of offices.

E-waste Survey and Methodology

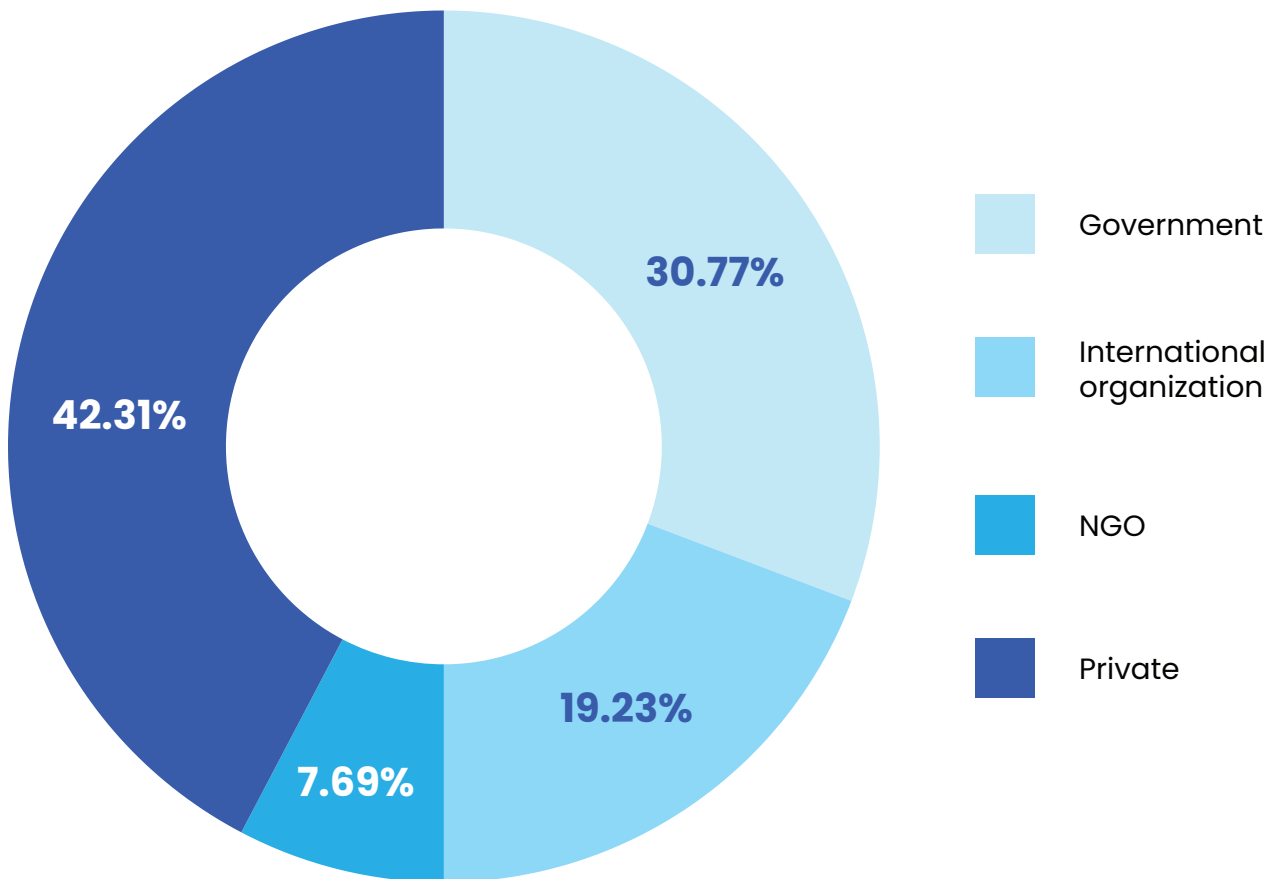
The survey was conducted through field visits and the collection of primary data at various institutions in Juba. Structured discussion guides, open-ended questions, and informal discussions were utilized as tools for data collection. The interviews and discussions were structured to gather quantitative data and understand the perspectives of different stakeholders regarding e-waste information, disposal practices, institutional management of e-waste, awareness of e-waste hazards, e-waste recycling approaches, and the importance of diverting e-waste from landfills.

The institutions surveyed were classified into four categories:



This categorization allowed for a comprehensive examination of e-waste practices across diverse sectors within Juba-city.

Figure 1: Key Respondents – Juba, South Sudan

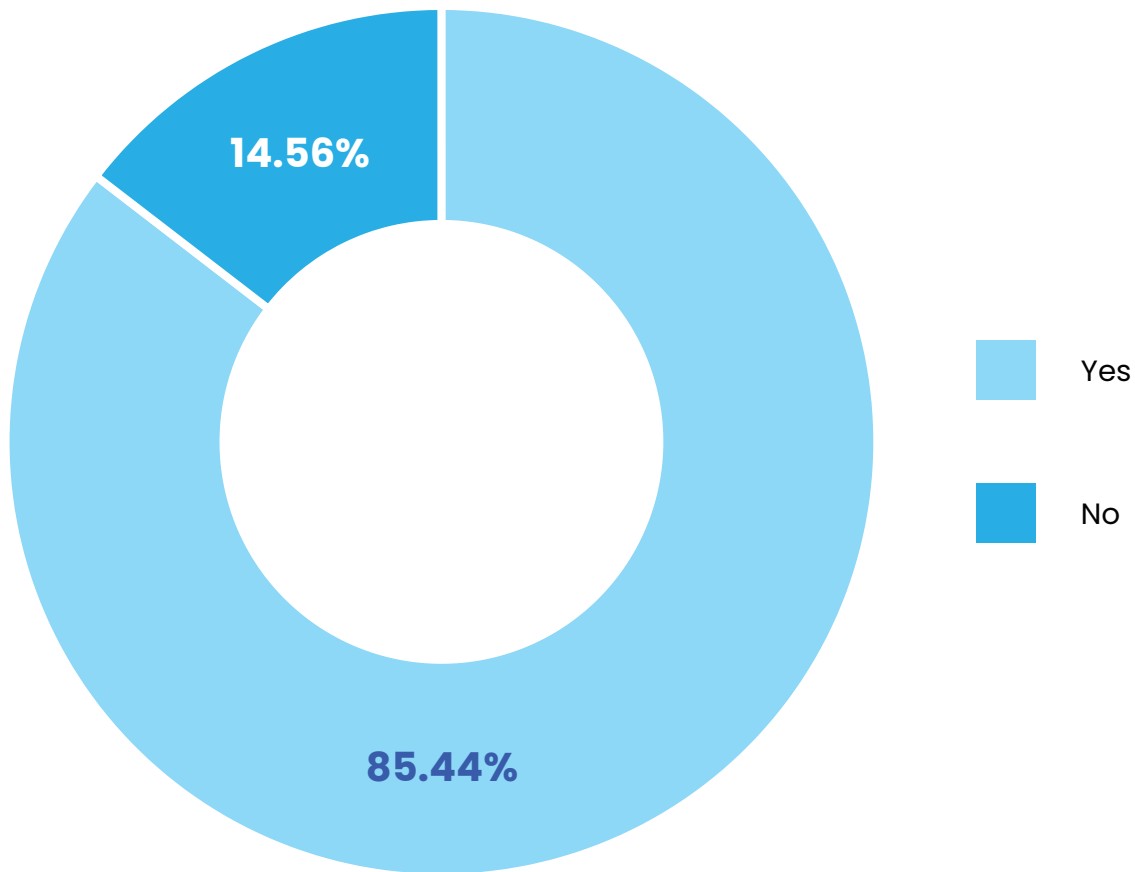


This survey gathered information from a diverse range of institutions including government institutions, International Non-governmental Organizations (INGOs), National Non-governmental Organizations (NNGOs), private households, and private multilateral companies in Juba, South Sudan. The selection of these institutions aimed to assess the accumulation of e-waste in their respective offices.

The distribution of respondents from various sectors is as follows: 42% from government institutions, 30% from private households and companies operating in Juba city, 20% from International organizations, and the remaining representation from national non-governmental organizations was the least. It's important to note that the responses were obtained from individuals who agreed to be interviewed.

This approach ensured a comprehensive understanding of e-waste accumulation across different sectors within Juba, contributing to the effectiveness of the survey in addressing e-waste management challenges in the region.

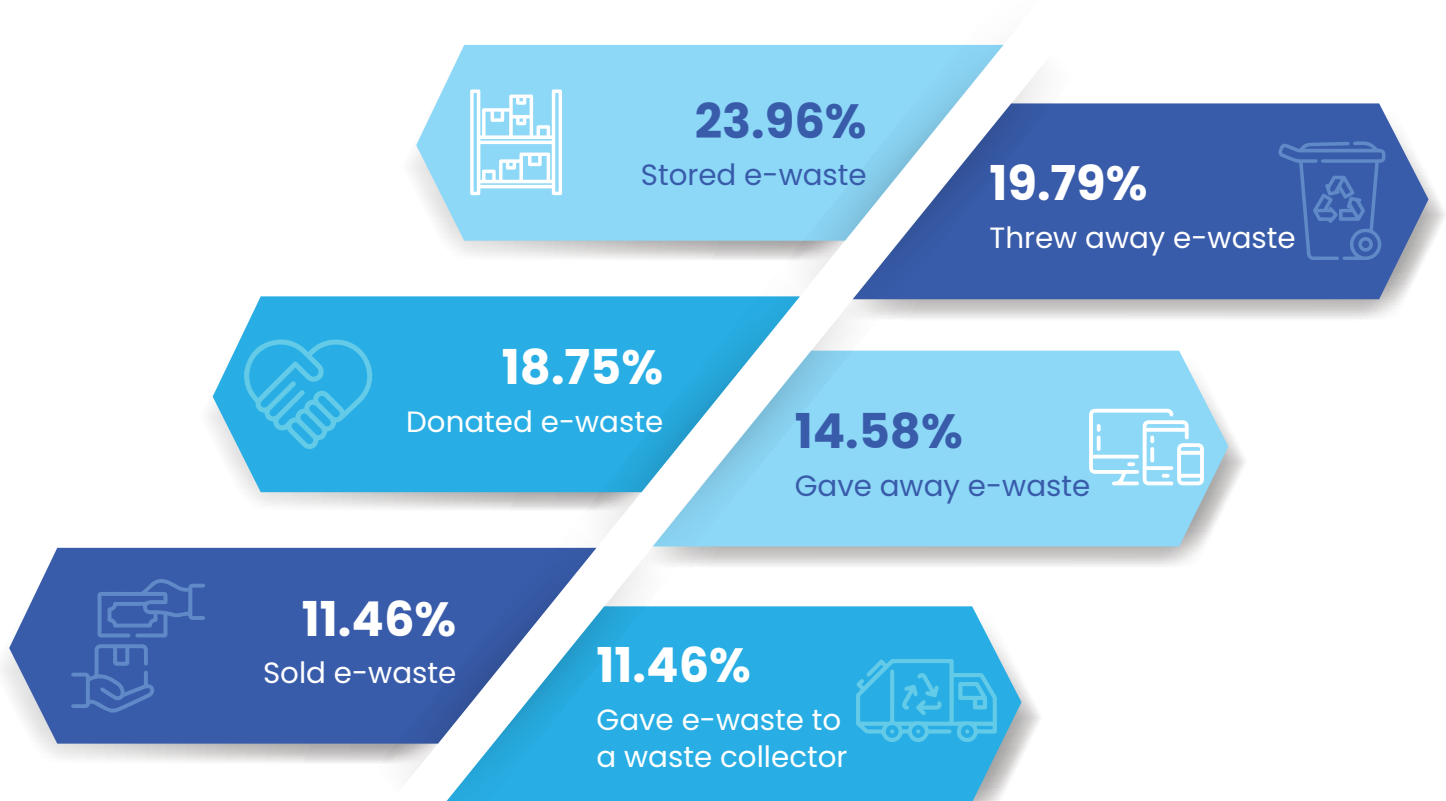
Figure 2: Do You Have Electronic/Electrical Waste?



The departments responsible for IT, procurement, and asset management in government institutions, NNGOs, INGOs, and private companies were queried regarding the availability of e-waste in their offices. An overwhelming majority, eighty-five percent (85%), confirmed the presence of e-waste in their offices. Conversely, fifteen percent (15%) stated they currently do not have e-waste, although they typically dispose of their e-waste by either depositing it in landfills, donating it to friends, or giving some items to individual waste collectors. This indicates that despite the minority of respondents without e-waste, significant quantities are still being stored in stores or cupboards by the institutions operating in Juba, as confirmed by the 85% of respondents.

The survey also highlights the absence of a convenient e-waste collection route and inadequate public promotion regarding appropriate handling methods for disposing of unwanted e-waste. These findings underscore the pressing need for improved e-waste management strategies and heightened public awareness campaigns to address the accumulation and disposal of electronic waste in Juba effectively.

Figure 3: Institutional Management of E-waste

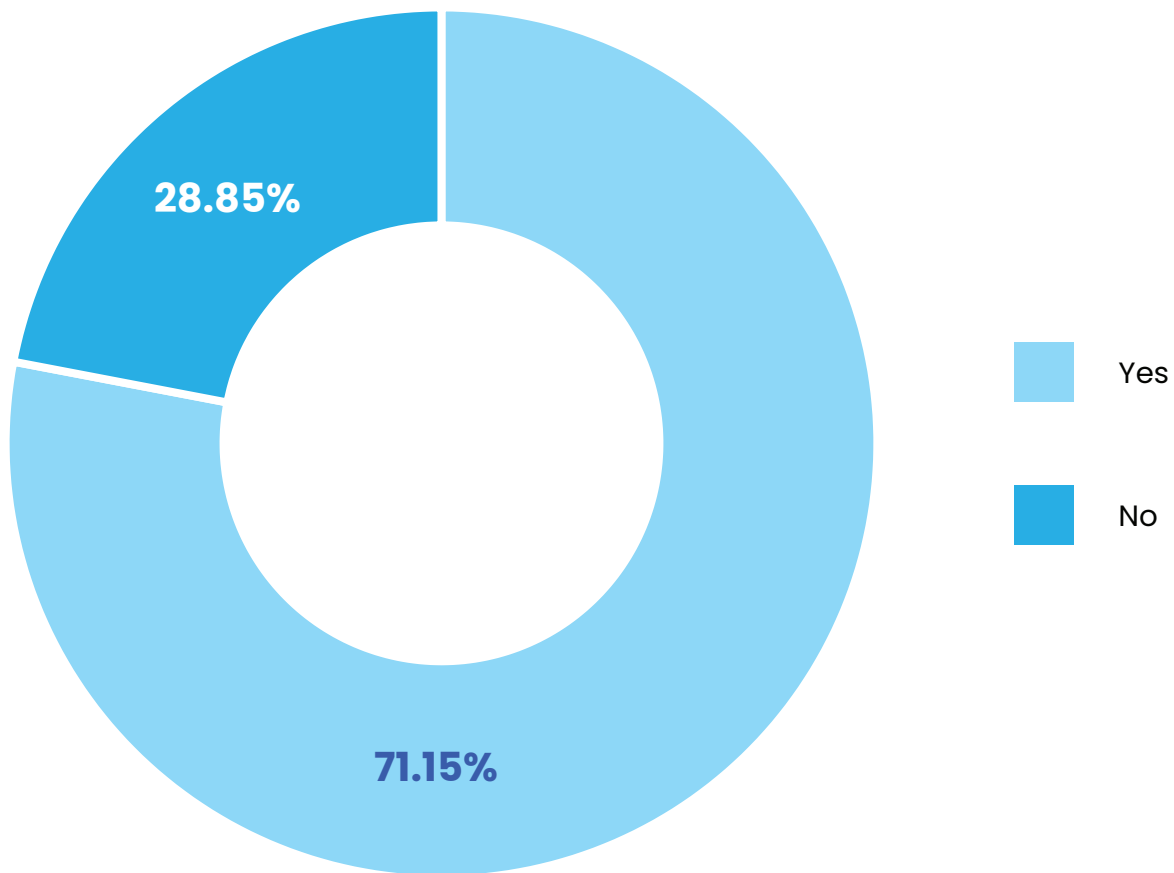


Twenty-five percent (25%) of the respondents reported that they store their e-waste in cupboards, albeit acknowledging that this method is not ideal for managing e-waste but currently the most common practice. Seventeen percent (17%) of respondents mentioned donating e-waste to friends and partners, with International Non-governmental organizations (INGOs) supporting local organizations by donating electronic devices such as computers, often when they are close to disposal but still in good working condition.

Additionally, 15% of respondents admitted to disposing of e-waste in dustbins as a means to address the accumulation of e-waste in their cupboards or storage areas. This highlights the prevalent practice of keeping e-waste stored in cupboards as the most viable option for many institutions.

It is evident that there is a pressing need for increased awareness and encouragement for institutions and communities to adopt proper e-waste disposal procedures as prescribed by the government of South Sudan through e-waste management agencies. Implementing effective e-waste recycling procedures can help mitigate the environmental and health risks associated with improper disposal practices.

Figure 4: Have You Ever Heard of E-waste Collection in South Sudan?

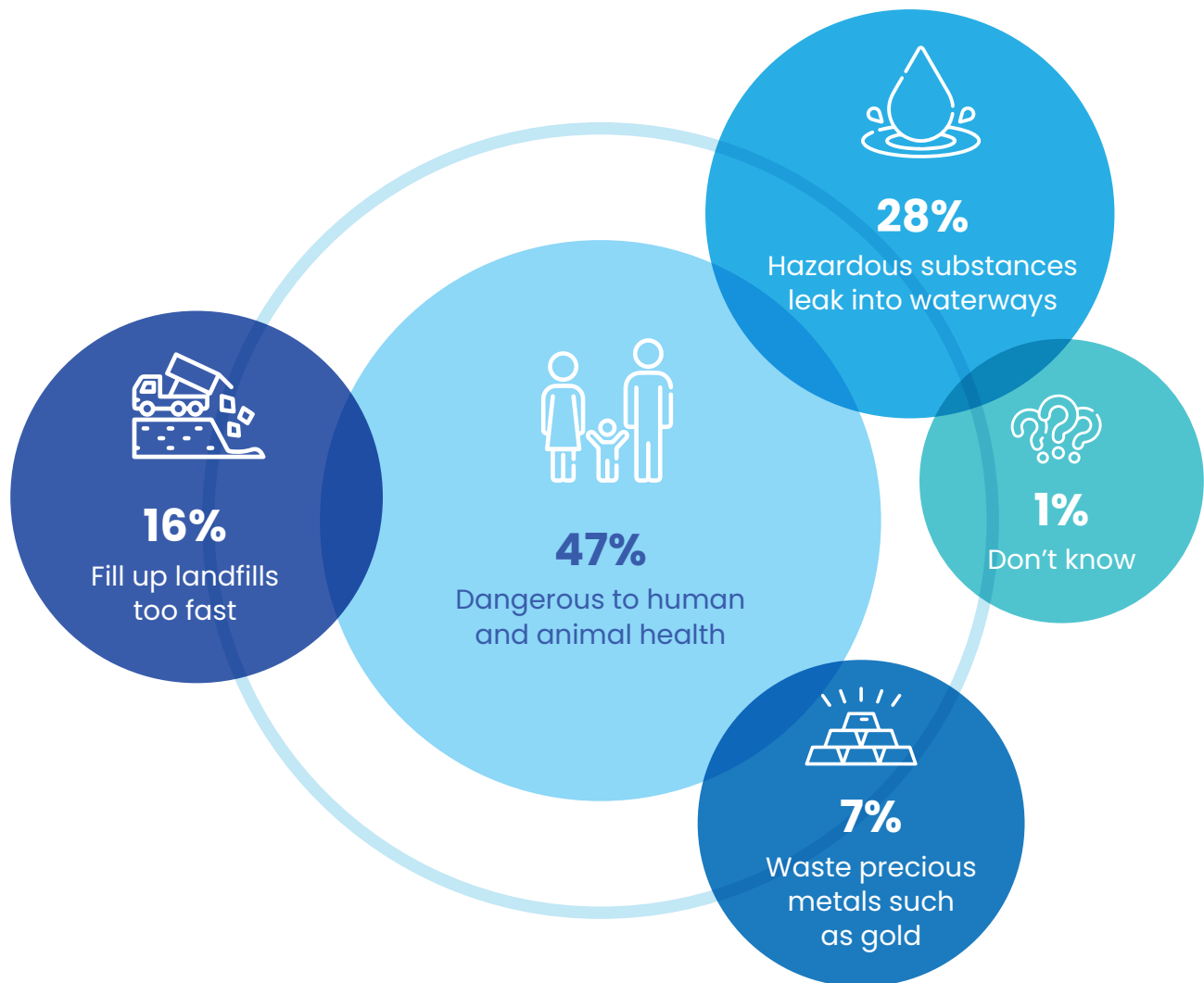


Seventy-eight percent (78%) of institutional respondents indicated awareness of e-waste collection in South Sudan. International organizations, for example, typically dispose of their assets such as computers and other electronic devices through the Relief and Rehabilitation Commission-RRC, as mandated by asset disposal and management regulations. Additionally, there are individual collectors of e-waste in South Sudan, as confirmed by respondents. These individuals collect e-waste for personal use, while some recycle e-waste and export it to neighboring countries.

Furthermore, the private sector often resells their e-waste to acquaintances and partners who are interested in purchasing them. Some respondents mentioned obtaining information about e-waste collection in South Sudan through the internet.

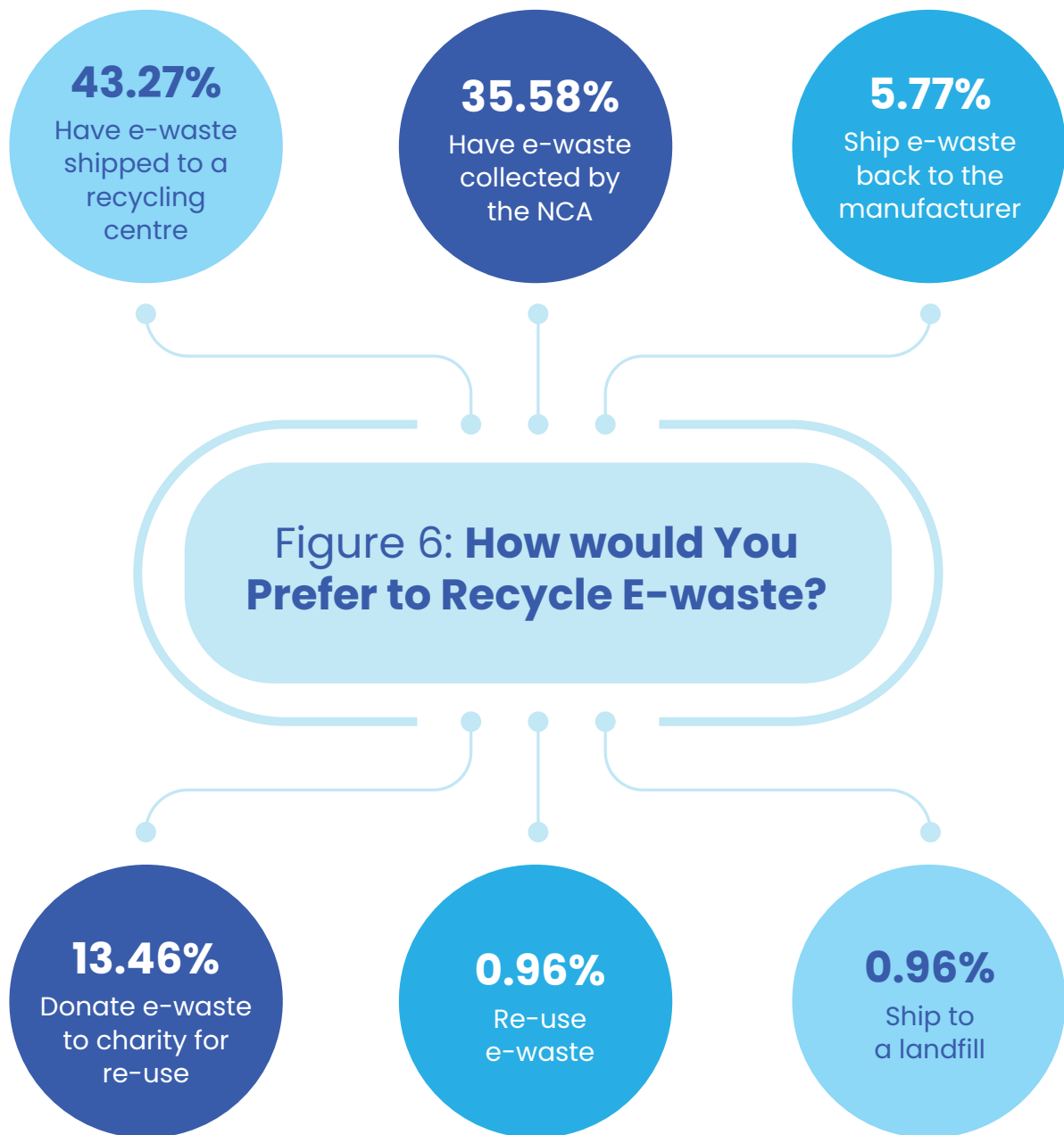
These findings highlight the diverse methods and channels through which institutions and individuals in South Sudan are informed about e-waste collection practices. However, there is still room for increased awareness and promotion of formal e-waste management procedures to ensure environmentally sustainable practices and compliance with regulations.

Figure 5: Importance of Keeping E-waste Out of Landfills and Disposing or Recycling it Properly



Respondents exhibited understanding of the threats posed by improper management of e-waste and the importance of proper collection, disposal, and recycling practices to mitigate these risks in South Sudan. Only 25% of respondents indicated a lack of awareness regarding the threats of e-waste mismanagement. However, the majority of respondents, comprising 47% and 29% respectively, demonstrated awareness that e-waste constitutes a significant threat to the environment, including air, soil, and water pollution, as well as posing risks to public health, encompassing both human and animal well-being.

This widespread understanding among respondents underscores the urgency of implementing effective e-waste management measures and enhancing public education initiatives to safeguard the environment and public health in South Sudan.



To recycle e-waste in South Sudan, respondents express a clear preference for the National Communication Authority-NCA to spearhead e-waste collection events through authorized agencies. Forty-one percent (41%) of respondents favor the government (NCA) taking the initiative through authorized agencies. Respondents indicate a preference for the NCA to handle e-waste collection and provide guidelines and depreciation guidelines for proper disposal. This aligns with the establishment of a recycling center by the government, as thirty-two percent (32%) of respondents express willingness to utilize such a facility if made available in the country.

This preference underscores the importance of government involvement and the role of the NCA in facilitating effective e-waste management practices in South Sudan. Establishing a dedicated recycling center can further enhance e-waste disposal efforts and promote sustainable waste management practices across the nation.

Figure 7: Categories of E-waste Available

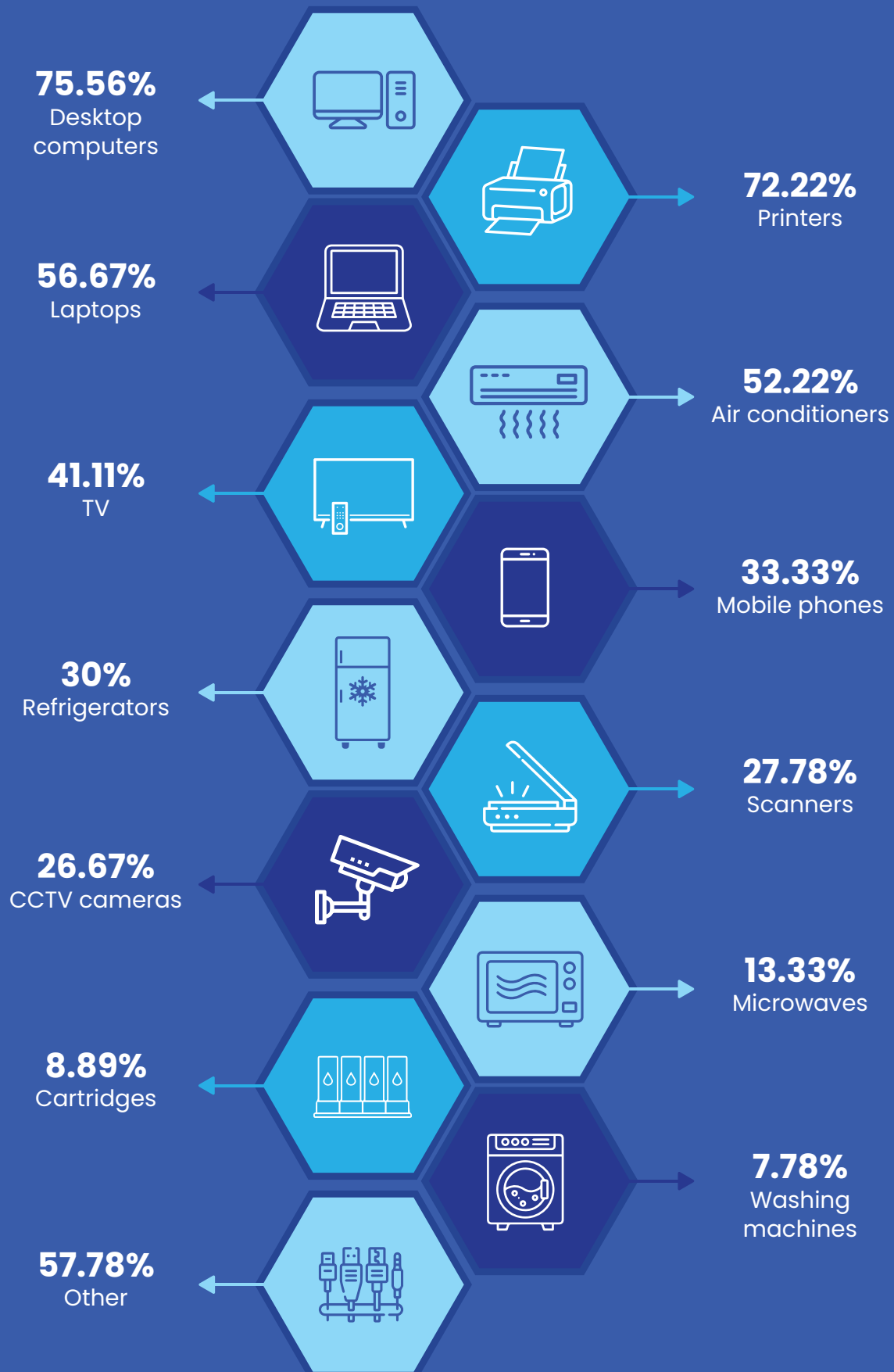
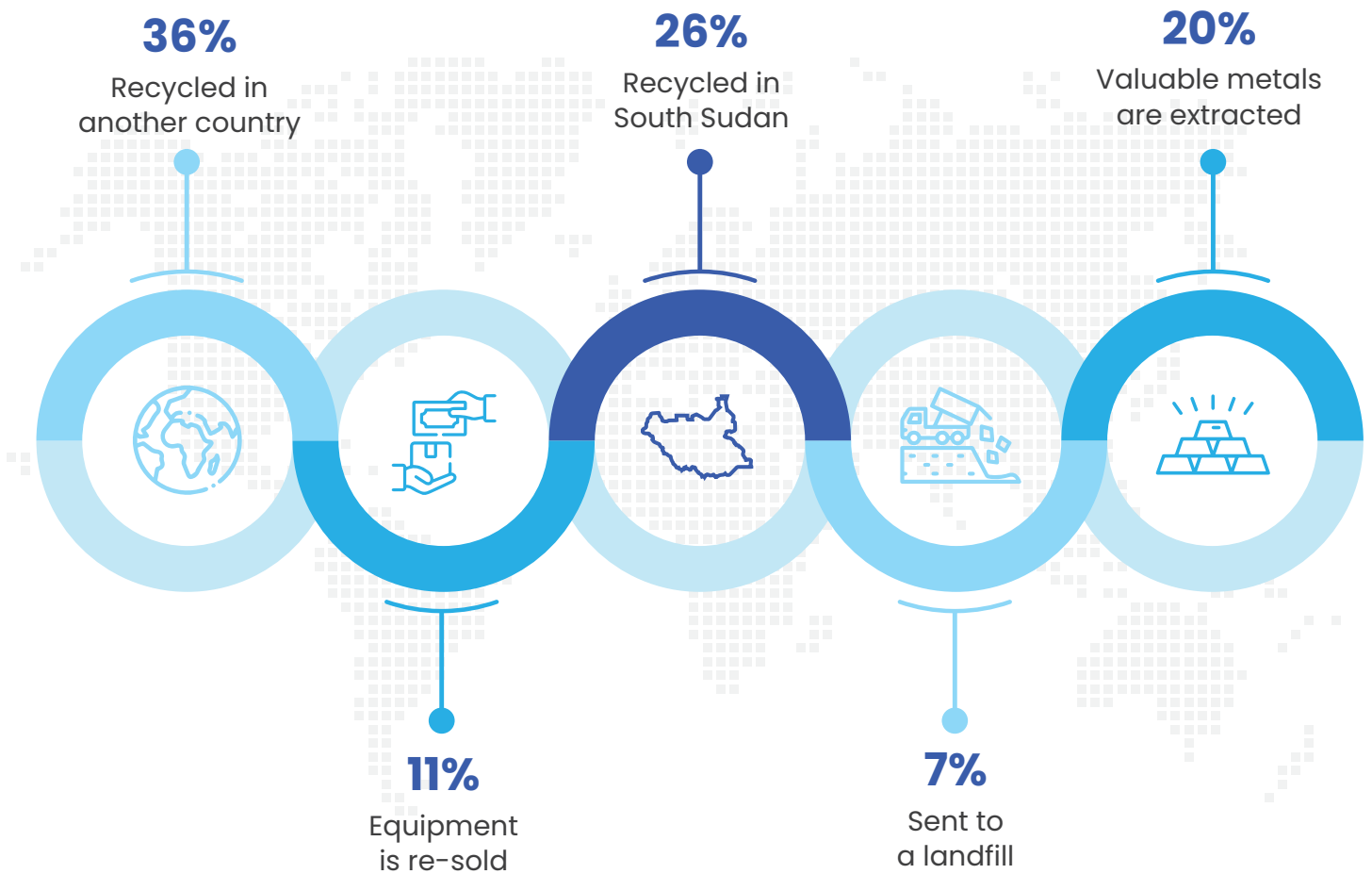


Figure 8: What Would Happen to Your Equipment After it is Collected?



These responses highlight the critical need for proper e-waste management practices to mitigate the risks associated with e-waste disposal and ensure the protection of human health, animal welfare, and the environment in South Sudan.

Respondents express a preference for e-waste collected from them to be recycled in another country (36%), such as neighboring countries that have established recycling facilities for e-waste. Meanwhile, 26% of respondents prefer e-waste recycling to be conducted within South Sudan. This indicates an opportunity for South Sudanese to address the issue of e-waste domestically, suggesting a desire for local solutions to e-waste management.

Furthermore, 20% of respondents highlight the need for equipment to be resold to support recycling and repair in the private sector. Resold equipment should be made available to individuals in the private sector to support their recycling efforts.

These findings underscore the importance of exploring both domestic and international avenues for e-waste recycling while also emphasizing the potential for local initiatives and private sector involvement in addressing the e-waste challenge in South Sudan.

DID YOU KNOW?

1 billion cellphones and 300 million computers go into production every year!

It is expected to grow by 8% per year.



**THE
WORLD
COUNTS**

DATA SOURCE

Recommendations

National Communication Authority-NCA should develop comprehensive guidelines on e-waste management policy, including depreciation guidelines for electronic devices. These guidelines will provide clear directives for the proper handling, disposal, and recycling of e-waste in South Sudan.

Launch extensive awareness campaigns on e-waste disposal and recycling throughout South Sudan. These campaigns should target government institutions, international organizations, national non-governmental organizations, private companies, and households to educate them about the environmental and health impacts of improper e-waste management and promote sustainable disposal practices.

Establish a dedicated recycling center for e-waste disposal. This facility will serve as a designated location for the general public to dispose of obsolete e-waste safely and responsibly. The recycling center should be equipped with the necessary infrastructure and resources to efficiently process and recycle electronic devices.

Foster private-public partnerships to facilitate proper collection and disposal of e-waste in Juba and across South Sudan. Collaboration between government agencies, private sector entities, and civil society organizations can enhance e-waste management efforts by leveraging resources, expertise, and networks to ensure effective implementation of e-waste disposal initiatives.





5

Implement e-waste collection drives and events in collaboration with local communities, schools, and businesses to encourage participation in e-waste recycling efforts and raise awareness about the importance of responsible e-waste disposal.



6

Strengthen regulatory frameworks and enforcement mechanisms for e-waste management in South Sudan. This includes establishing legislation specifically addressing e-waste disposal and enforcing compliance with regulations to prevent illegal dumping and improper handling of electronic devices.



7

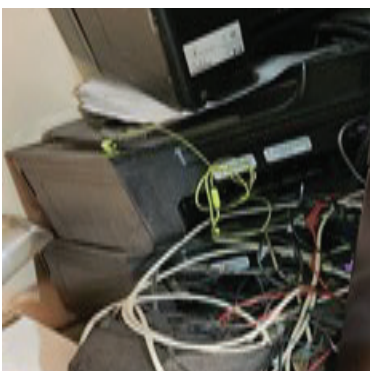
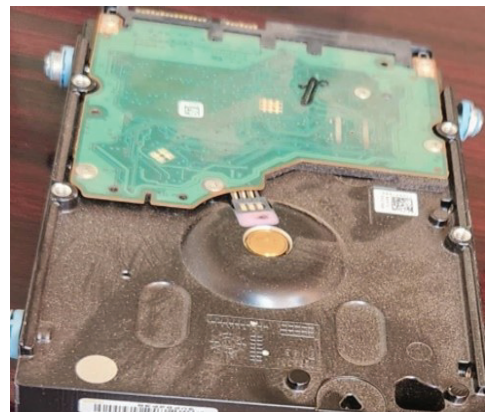
Invest in research and development initiatives to explore innovative technologies and solutions for e-waste recycling and resource recovery. This will promote sustainable practices and contribute to the circular economy by maximizing the reuse and recycling of valuable materials from electronic devices.



8

Provide training and capacity-building programs for stakeholders involved in e-waste management, including government officials, waste management professionals, and community leaders. This will enhance their knowledge and skills in handling and processing e-waste safely and efficiently.

Annex I: Sample Obsolete E-waste in Various Offices – Juba



Annex II: The Survey Questionnaire



E-waste Survey (National Communication Authority-NCA) Questionnaire for Inventorization of Electronic/Electrical Items and Understanding Behaviors

1. Institution

- Government agency National organization-NNGO
 International organization-INGO Private/household

2. Do you have electronic/electrical waste?

- Yes No

3. If yes, Tick in the list below

Categories of EEE	QTY	Years Out-of-Service
<input type="checkbox"/> Computer-desktop		
<input type="checkbox"/> Laptop		
<input type="checkbox"/> Mobile phone		
<input type="checkbox"/> Video game		

Categories of EEE	QTY	Years Out-of-Service
<input type="checkbox"/> Printer including cartridges		
<input type="checkbox"/> Scanner		
<input type="checkbox"/> TV		
<input type="checkbox"/> Digital camera/CCTV camera		
<input type="checkbox"/> Mobile charger		
<input type="checkbox"/> Electrical sockets/plug		
<input type="checkbox"/> Tube light/CFL bulb		
<input type="checkbox"/> Refrigerator		
<input type="checkbox"/> Microwave		
<input type="checkbox"/> Washing machine		
<input type="checkbox"/> Air conditioners		
<input type="checkbox"/> Others		

4. What do you do with obsolete e-waste?

- | | |
|---|---|
| <input type="checkbox"/> Threw in dustbin | <input type="checkbox"/> Sold it |
| <input type="checkbox"/> Kept in cupboard or in storage | <input type="checkbox"/> Sold it in exchange scheme |
| <input type="checkbox"/> Gave to waste collector | <input type="checkbox"/> Gave it to family/friends |
| <input type="checkbox"/> Donated it | <input type="checkbox"/> Others |

5. Have you ever heard of e-waste collector before in South Sudan?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

6. If yes, from where

Newspaper

Internet

TV

Other (specify)

7. Do you know what happens to e-waste in your country if not collected, disposed-off or recycled properly? If yes, explain

8. How would you prefer to recycle your e-waste?

Take to recycling centre

Have e-waste collected by NCA

Take to local charity for re-use

Others (specify)

Ship back to manufacturer

9. Why do you think it is important to keep e-waste out of landfills?

Fill up landfills too fast

Waste precious metals such as gold, copper

Hazardous substance can be released into waterways

Don't know

Dangerous to human and animal health

10. What do you think happens to your equipment after it is collected today?

- | | |
|--|--|
| <input type="checkbox"/> Equipment is re-sold | <input type="checkbox"/> Sent to a landfill |
| <input type="checkbox"/> Recycled in South Sudan | <input type="checkbox"/> Valuable metals are extracted |
| <input type="checkbox"/> Recycled in another country | |

Signature: **or (Agency's stamp)**

Thank you so much



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