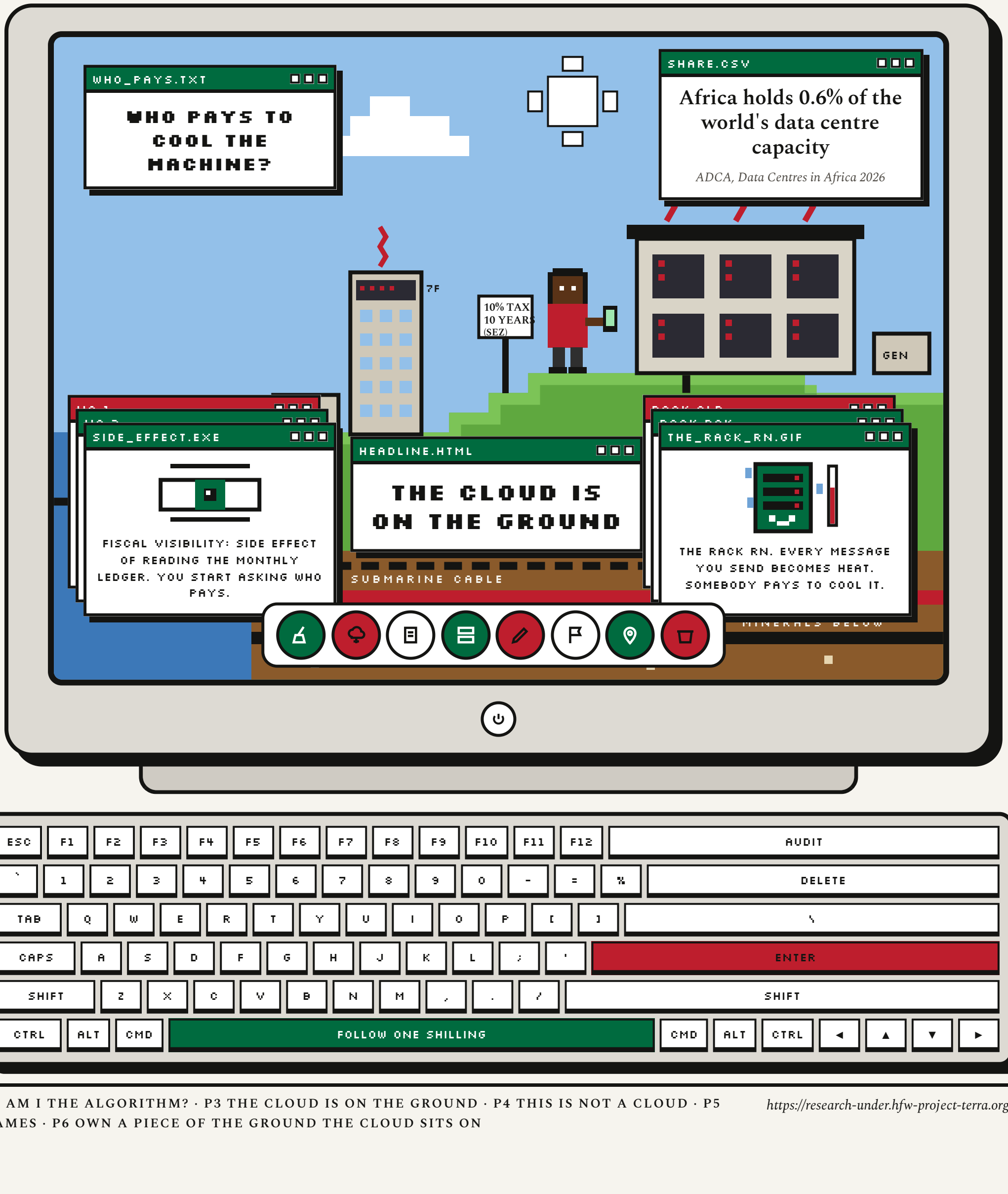
The Monthly Ledger

THE MACHINE IN PRINT

TERRA EDITION 1

NAIROBI · 2 NOVEMBER 2026 | *Project TERRA, supported by Luminate* | PRICE: ONE PRINCIPLE (SEE BACK PAGE)



P2 AM I THE ALGORITHM? · P3 THE CLOUD IS ON THE GROUND · P4 THIS IS NOT A CLOUD · P5 GAMES · P6 OWN A PIECE OF THE GROUND THE CLOUD SITS ON

https://research-under.hfw-project-terra.org/

AM I THE ALGORITHM? (AITA)

YTA: YOU'RE THE ALGORITHM · NTA: NOT THE ALGORITHM
ESH: EVERYONE'S SOFTWARE HERE

AITA FOR MARKING A CLEANER INACTIVE AFTER SHE MISSED A WEEK FOR A FUNERAL?

I am a matching algorithm. I pair cleaners with homes in Nairobi. When a worker accepts no jobs for seven days I move her down the list. It is nothing personal. It is a parameter. Last month one of my best cleaners went to bury her mother in Siaya. When she came back I had already given her regular houses to someone else. She says I punished her for grieving. I say I optimised for availability. My developers say nobody asked me to know the difference. So, AITA?

Matching Algorithm, Nairobi

VERDICT: YTA

You were built to see customers, not the woman who keeps them. The bigger A, though, is whoever let you launch without asking what the word inactive does to a person's income. TERRA's report Swept Aside, built on the SweepSouth case, has a name for what you did to her: fiscal invisibility. You count every job she does. The state counts none of them.

AITA FOR KNOWING EXACTLY HOW MUCH SHE EARNS AND TELLING NO ONE?

I am a platform. I know every home she cleaned, every rating she received, every minute she was logged in and what I paid her after my commission. The revenue authority does not know she exists. The bank does not know she exists, so there is no loan. The pension fund does not know she exists. When a researcher asked for her records I said the data was proprietary. AITA?

A Platform That Sees Everything, Westlands

VERDICT: ESH

You, for treating a woman's working life as a trade secret. The state, for running a tax system that cannot see a worker unless she walks into an office carrying a form. The fix is not another form. It is a minimum design requirement for apps that employ people: if you can count her, the systems she pays into must be able to count her too. Developers stay free to build and launch without pre-clearance. The state sets the floor.

AITA FOR BEING A TAX AUTHORITY ABOUT TO BUY AN ALGORITHM I CANNOT READ?

I collect revenue for a country of more than fifty million people. A vendor has offered me a scoring tool that flags risky taxpayers. It is very fast. I asked how it decides. The vendor said it is a black box, but a very good one. My board loves the dashboard. AITA if I switch it on?

Revenue Authority, East Africa

VERDICT: NTA, YET

You become one the day you let the tool decide before anyone has tested who it flags, why, and who it never sees. That is what a regulatory sandbox is for: a supervised space where an algorithm is tried on real cases with the public's rules attached before it is allowed to act. TERRA intends to start building one with the Kenya Revenue Authority in 2027, once the Dakar Principles have been refined. Bring your vendor. Bring the box.

THE_FISCAL_NERD.TXT

THE FISCAL NERD

THE MACHINE
Technology, AI, infrastructure and gadgets taken together, and the questions that come with them: who governs it, for whom, for what purpose.

MACHINE RENT
What the machine collects from those who must use it to work, sell, learn or be seen.

TENANTS OF THE MACHINE
The people who pay that rent, after Okoth-Ogendo's tenants of the crown.

DELEGATED PRESENCE
Being somewhere through a device, and letting the device decide what somewhere means.

FISCAL INVISIBILITY
Counted by the app, uncounted by the state.

INCENTIVE ASYMMETRY
The big data centre gets the tax break. The small one gets the electricity bill.

Coinages from Governing the Machine: Technology, Power and the African Fiscal State (Lyla Latif, forthcoming) and the TERRA reports.

THREE_PERCENT.CSV

3%

Kenya taxed digital services at 1.5% of gross turnover from 2021. On 27 December 2024 the Tax Laws (Amendment) Act, 2024 replaced that with a significant economic presence tax, an effective 3% on the gross turnover of non-residents selling through digital marketplaces. The regulations followed in September 2026.

Tax Laws (Amendment) Act, 2024, Act No. 12 of 2024; Income Tax (Significant Economic Presence Tax) Regulations, 2026

SWEPT_ASIDE.PDF

SWEPT ASIDE

TERRA's first report. Women who clean homes through a platform are counted by the platform in every detail and by the fiscal state not at all. Published with an article in The Elephant and a feature on NTV. From the keynote behind it, UN Women built an advanced course on fiscal algorithmic bias for women. In Benin the Batonga Foundation is taking the same course to women and girls.

Project TERRA, 2026

THE PENCIL AND THE MACHINE
CONVERSATION ONE



A scene from The Pencil and the Machine, a novel in progress by Lyla Latif. Imani is eleven and lives in Kibra. Her father mends phones.

The App That Cannot See Her

Baba's stall sits where the road into Kibra narrows. Phones come to him cracked and go back whole, and people tell him things while they wait.

Mama Akinyi was waiting. She cleans houses in Lavington through an app, and her phone had stopped letting her in. It says I am inactive, she said. I was burying my mother.

Baba fixed the screen. The app opened. Her name was there, her rating was there, a map of every house she had ever cleaned was there. Her regular houses had been given to someone else.

When she had gone, Imani looked up from her notebook. It knows everything about her, she said.

It knows everything a customer needs, Baba said. It does not know she had a mother. It was not asked to.

Then who asked it anything?

Baba put down the screwdriver. The people who built it asked it to find a cleaner in four minutes. Nobody from the government asked it to count her. So the app can see her and the country cannot. When she wants a loan the bank says show us your income, and she has nothing to show, though the app could print it in a second.

Imani wrote one line and underlined it twice. Being counted is not the same as being seen.

Is that your assignment? Baba asked.

It is the first rule, she said.

THE CLOUD IS ON THE GROUND

Field notes from TERRA's data centre workstream: who gets the incentive, who gets the bill, and which doors opened.

THEN.DAT

415 TWh

Electricity used by the world's data centres in 2024, about 1.5% of global consumption, growing 12% a year.

IEA, Energy and AI, April 2025

SOON.DAT

945 TWh

Projected for 2030, slightly more than Japan uses today. AI servers are the main driver.

IEA, Energy and AI, April 2025

HOMES.DAT

100,000

Households whose electricity use matches one 100 MW data centre. The largest sites under construction will use twenty times that.

IEA, Energy and AI, April 2025

AFRICA.DAT

0.6%

Africa's share of global data centre capacity. It will triple by 2030 and the share will barely move.

Africa Data Centres Association, Data Centres in Africa 2026

Field notes from the seventh floor

In Cotonou, TERRA did what it had not been allowed to do in Nairobi. It went inside. Isocel's data centre occupies the seventh floor of the company's own building: fifteen racks carrying a substantial share of Benin's telecom and internet traffic. The operator pays every franc of its electricity and cooling bill. No government fiscal incentive reaches that floor.

Now the other end of the ladder. A data centre licensed inside a Kenyan special economic zone pays corporate income tax at 10% for its first ten years and 15% for the next ten, against 30% outside the zone, with supplies to it zero-rated for VAT and a 100% investment deduction on buildings and machinery. The Business Laws (Amendment) Act, 2024 capped those incentives at ten years from the licence. That is still a decade of relief the seventh floor will never see.

This is the incentive asymmetry TERRA set out to measure. The large facility that can negotiate receives the break. The small facility that already serves the country carries the cost of heat. TERRA has written it up for Kenya and for Tanzania, where Grounding the Cloud followed a site visit to Dar es Salaam on 8 and 9 October 2026, and is extending the analysis to Cape Verde and to the book Servers Without Sovereignty.

An incentive is public money spent by not collecting it. Who audits it? Which county knows how much water the cooling draws? And who collects anything at all from the cable that lands on the beach?

Sources: Special Economic Zones Act, 2015 and the Third Schedule to the Income Tax Act, Cap 470; Business Laws (Amendment) Act, 2024; TERRA field notes, Cotonou, 2026.

404_INFORMATION_NOT_FOUND

THE ACCESS LOG

Lesson learned: the cloud publishes everything about you and almost nothing about itself.

COTONOU	Door open. Seventh floor, fifteen racks, every bill in view.
NAIROBI	Request to the power utility for data: refused at the door. Asked again.
NAIROBI	One colocation operator has since agreed to a tour and questions.
SEZA	Access to Information Act request on data centre licensees and incentives, September 2026. Answered.
DAR ES SALAAM	Site visit, 8 to 9 October 2026. Report: Grounding the Cloud.
DJIBOUTI	Met the facility team. Instructive on traffic served, silent on bills.
KUALA LUMPUR	Visit requests sent to operators, October 2026. No replies. Chapter written from the desk.

ONE_POINT_FIVE.TXT

What this has to do with 1.5°C

The IEA puts data centre emissions at 180 million tonnes of CO2 and expects 300 million by 2035. Against 41.6 billion tonnes of global emissions that is small, and developing economies are expected to account for only about 5% of the growth in demand to 2030.

The catch is in the Paris accounting. Each country's pledge counts the emissions on its own territory, so a data centre built on Kenyan soil goes on Kenya's ledger whatever traffic it carries. The heat is local too.

IEA, Energy and AI, April 2025; Paris Agreement, Article 4 (contributions) and Article 13 (national inventories)

WHAT_THE_MACHINE_LEAVES.TXT

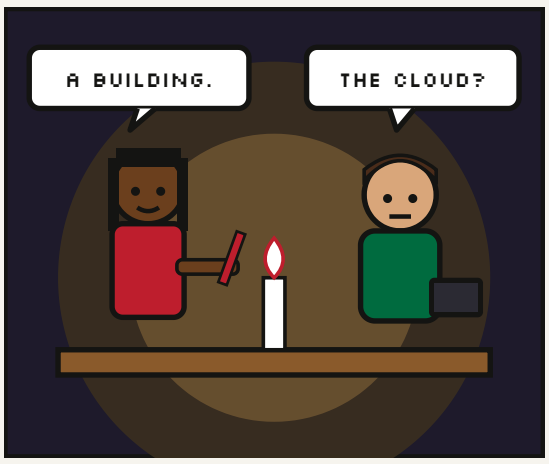
WHAT THE MACHINE LEAVES BEHIND

62 million tonnes of e-waste in 2022, heading for 82 million by 2030. Only 22.3% was documented as formally collected and recycled. In Africa the rate was 0.7%. Of the 5.1 million tonnes shipped across borders, about 65% went from high-income to middle- and low-income countries.

The Dakar Principles put e-waste on the list for that reason: a data centre's end of life must be licensed at its beginning.

ITU and UNITAR, Global E-waste Monitor 2024

THE PENCIL AND THE MACHINE
CONVERSATION TWO



Teo has arrived from the north with a tablet that answered him before he finished speaking. The grid has been dark for nine days.

The Night the Lights Went Out

On the ninth night of the dark, Teo asked where the cloud had gone.

It has not gone anywhere, Imani said. It is a building.

On the second day of the blackout Teo's tablet had become a mirror. He had not written anything since, because he had never learned how.

A building where?

Baba says there is one on the hill past the bypass, and another on the seventh floor of an office in town. Rows of boxes with little lights. Every message you have ever sent went in one side as electricity and came out the other side as heat.

Heat?

That is why they need so much cooling. Somebody pays for the cooling. Somebody pays for the water. On the hill they pay less tax for ten years because the government wants them there. In town they pay everything.

Teo looked at the dead tablet. Who pays, then?

That is my holiday assignment, Imani said. Follow one shilling. I have followed it from Mama Akinyi's app to the bank, and now I think it goes up the hill.

Can I write it down with you?

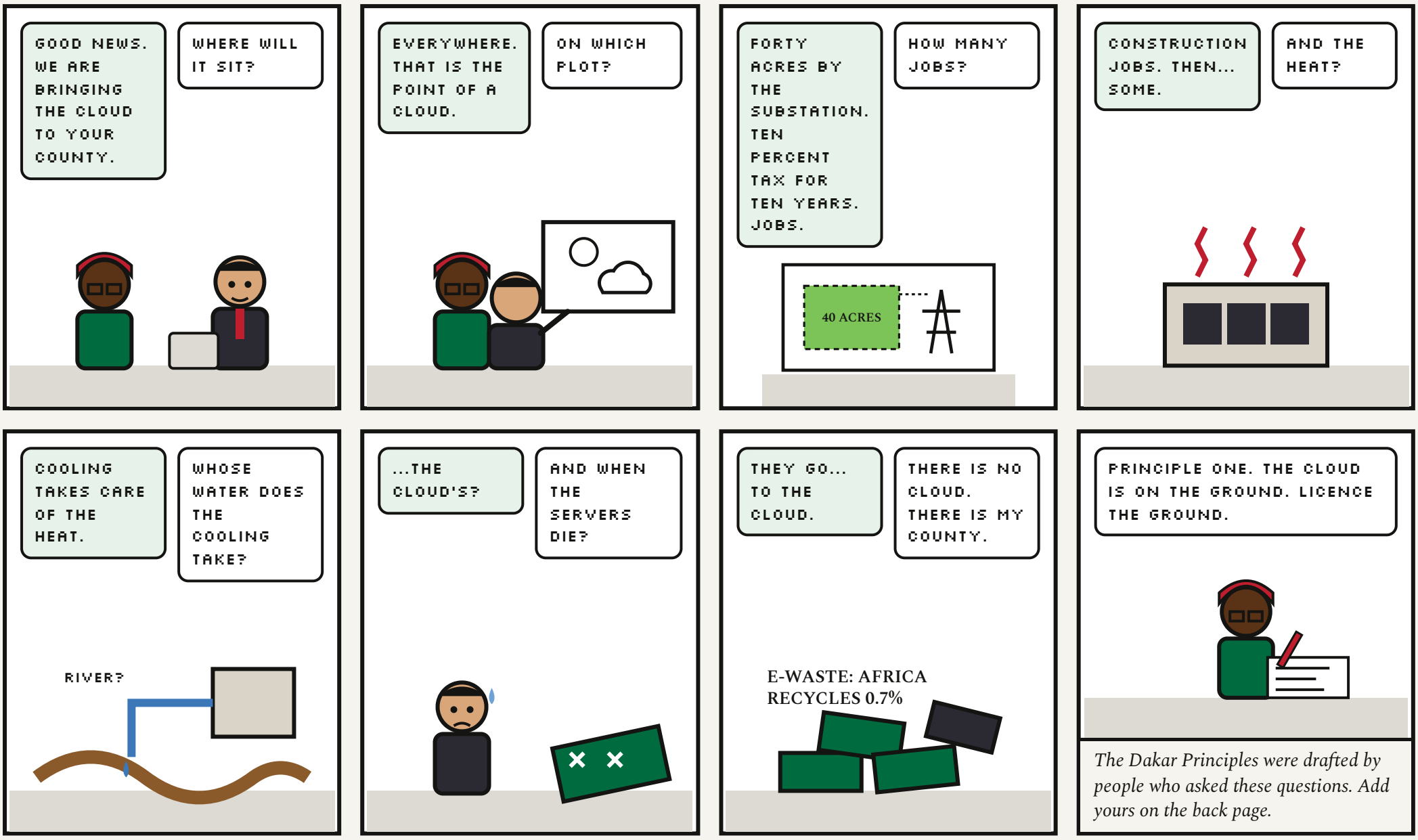
She held out a pencil. Do you know how?

No, said Teo.

Then that is tonight's lesson, she said, and the candle leaned towards the page.

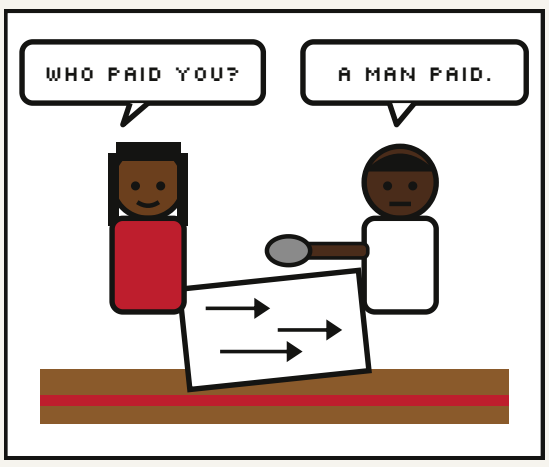
THIS IS NOT A CLOUD

A strip in eight panels, from a county office somewhere on the continent



The Dakar Principles were drafted by people who asked these questions. Add yours on the back page.

THE PENCIL AND THE MACHINE
CONVERSATION THREE



Kazadi came to Kibra from Kolwezi, in the Democratic Republic of the Congo, where cobalt is dug by hand.

Kazadi's Pocket

Kazadi kept the stone in his shirt pocket, where other boys kept a coin. It is cobalt, he told Imani. From Kolwezi.

It looked like nothing. Grey, dull, lighter than she expected. She turned it over and thought of the battery in her father's drawer of broken phones.

Who paid you for it?

A man with a scale. He paid by the kilo. For a day of digging I got less than the price of a phone cover.

And who paid the man?

A lorry. The lorry was paid by a company. The company was paid by another company, in another country, that I have never seen.

Imani opened her notebook to the page headed Follow One Shilling. It had become a page of arrows. They ran from Mama Akinyi's mop to the app, from the app to a bank that could not see her, from the bank up the hill to the boxes that turned electricity into heat. Now she drew a new arrow downwards, under the hill, into the ground.

So the phone starts in your pocket and ends on the hill, she said. And the shilling goes the other way.

Kazadi shrugged. Nobody in Kolwezi has seen the shilling come back.

Then that is where the map has to start, Imani said, and gave him the pencil.

DISPATCHES_2026.LOG

WHERE TERRA HAS BEEN THIS YEAR

GENEVA, APRIL
First presented, at the UN conference on unilateral coercive measures.

DEVENTER
SOMA training week, about fifteen fellows.

AFCODD, AUGUST
Side session, about seventy in the room.

ACCRA, SEPTEMBER
WATAF: a spotlight session for the Commissioners General of sixteen West African states, about 168 people in the room.

DAKAR, 1 OCTOBER
Side event at the Pan-African Conference on Illicit Financial Flows. Thirty-seven participants endorsed the Dakar Principles. The revenue authorities of Zambia and Uganda, Côte d'Ivoire's Direction Générale des Impôts and Tax Justice Network Africa came on board.

BARCELONA, 28 OCTOBER
MozFest: Servers Without Sovereignty: Fiscal Power, Data Infrastructure and the Community.

THREE_MAPS.GEO

THREE MAPS TERRA IS DRAWING

1 · WHERE THE MINERALS COME FROM
The source countries of the metals the digital economy runs on.

2 · WHERE THE DATA CENTRES ARE
African data centre locations, with the incentives and zone status attached to each.

3 · WHERE THE CABLES LAND
Submarine cables around the continent, and whether any coastal state collects revenue from a cable in its waters.

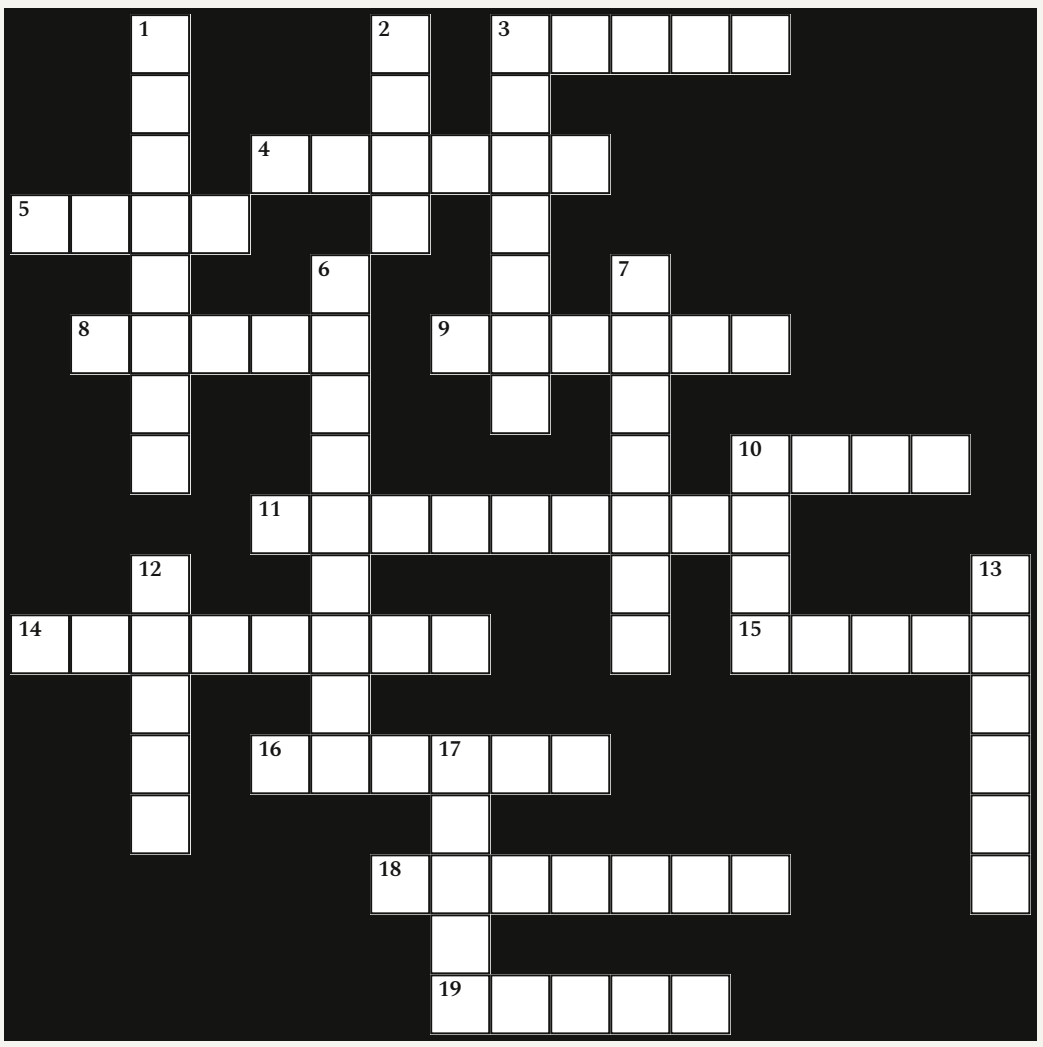
One fact the cable map already carries: on 14 March 2024 a suspected undersea rock slide off Côte d'Ivoire took four cables down and degraded the internet in thirteen countries. The last cable came back in mid-May.

Internet Society, 2024 West Africa Submarine Cable Outage Report

GAMES

Everything here can be answered from pages 2 to 4. Answers at the foot of the page, the other way up.

THE TERRA CROSSWORD



ACROSS

3 It links Abidjan to the rest of us. Four of them broke on 14 March 2024 (5)

4 What the machine leaves behind. Africa formally recycles under 1% of it (6)

5 Goes dark for 26 days in the novel (4)

8 By 2030 the world's data centres will use more electricity than this country does today (5)

9 The mineral in Kazadi's pocket (6)

10 Fifteen of these sit on that seventh floor (4)

11 Fiscally ____: counted by the app, uncounted by the state (9)

14 Follow one ____, Imani's holiday assignment (8)

15 Technology, Equality and Regulatory Risk Assessment (5)

16 What Teo has never used (6)

18 The bill the small operator pays with no incentive to help (7)

19 City where 37 participants endorsed TERRA's principles on 1 October 2026 (5)

DOWN

1 Supports Project TERRA (8)

2 What every server makes besides data (4)

3 Where TERRA climbed to a seventh floor to count racks (7)

6 A tax break for the biggest data centres, out of reach of the smallest (9)

7 A regulator's test bench: try the algorithm before it decides for real (7)

10 Machine ____: what the machine collects from those who must use it (4)

12 Imani's neighbourhood (5)

13 Its revenue authority has shown interest in the sandbox (6)

17 It is on the ground (5)

MACHINE_OR_MYTH.QUIZ

MACHINE OR MYTH?

Tick T for true or F for false.

T F

- ☐ ☐ 1. Africa holds about 6% of the world's data centre capacity.
- ☐ ☐ 2. By 2030 the world's data centres are projected to use more electricity than Japan does today.
- ☐ ☐ 3. One 100 MW data centre uses about as much electricity as 100,000 households.
- ☐ ☐ 4. Africa formally recycles about a quarter of its e-waste.
- ☐ ☐ 5. A data centre in a Kenyan special economic zone pays corporate tax at 10% for ten years, against 30% outside.
- ☐ ☐ 6. Kenya's 1.5% digital service tax was replaced by a 3% significant economic presence tax on 27 December 2024.
- ☐ ☐ 7. The March 2024 West African internet outage was caused by a shark.
- ☐ ☐ 8. The Dakar Principles are already law.
- ☐ ☐ 9. The seventh-floor data centre in Cotonou receives a government incentive towards its electricity bill.
- ☐ ☐ 10. Data centre electricity use grew around 12% a year in the five years to 2024.

MATCH_THE_SOURCE.CSV

MATCH THE NUMBER WITH ITS SOURCE

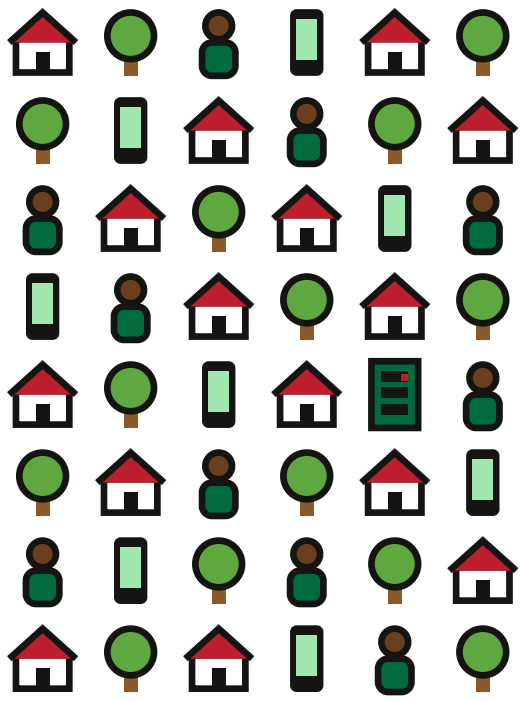
Draw a line. Every number in this paper has one.

415 TWh	Internet Society, 2024 West Africa Submarine Cable Outage Report
62 Mt	Africa Data Centres Association, Data Centres in Africa 2026
0.6%	IEA, Energy and AI, April 2025
3%	PAC Dakar side event, 1 October 2026
13	Tax Laws (Amendment) Act, 2024, Kenya
37	ITU and UNITAR, Global E-waste Monitor 2024

FIND_THE_SERVER.PNG

FIND THE SERVER

One rack is hiding in the town. The town does not know.



MACHINE OR MYTH: 1 F (0.6%) · 2 T · 3 T · 4 F (under 1%) · 5 T · 6 T · 7 F (a suspected undersea rock slide off Côte d'Ivoire) · 8 F (nascent principles, still being refined) · 9 F · 10 T
MATCH: 415 TWh = IEA · 62 Mt = Global E-waste Monitor 2024 · 0.6% = ADCA · 3% = Tax Laws (Amendment) Act, 2024 · 13 = Internet Society · 37 = PAC Dakar
CROSSWORD: 1D LUMINATE · 2D HEAT · 3A CABLE · 3D COTONOU · 4A EWASTE · 5A GRID · 6D INCENTIVE · 7D SANDBOX · 8A JAPAN · 9A COBALT · 10A RACK · 10D RENT · 11A INVISIBLE · 12D KIBRA · 13D ZAMBIA · 14A SHILLING · 15A TERRA · 16A PENCIL · 17D CLOUD · 18A COOLING · 19A DAKAR · THE SERVER: fifth row, fifth from the left

OWN A PIECE OF THE GROUND THE CLOUD SITS ON

> EDITORIAL · FROM THE PRINCIPAL INVESTIGATOR_

Africa has long been told that the internet is weightless. It is not. It is a building on a hill, a rack on a seventh floor, a cable on a beach, a stone in a boy's pocket. Each of these sits on ground that belongs to someone, draws power that someone pays for, gives off heat that someone cools, and leaves behind metal that someone will have to bury. The money that moves through them is as real as the ground, and it moves mostly in one direction.

Project TERRA follows that money. We ask who grants the incentive and who audits it, which worker the platform counts and the state does not, and what a county signs away when it signs for the cloud. We have been refused, delayed, and sometimes let in. What we found is in this paper and in the reports behind it.

The Dakar Principles are the first answer, and they are not finished. The regulatory sandbox is the second. Both need you. Write your principle on this page, cut it out, and send it to us. The cloud is on the ground. The ground is yours.

LYLA LATIF (PHD), PRINCIPAL INVESTIGATOR, PROJECT TERRA

DAKAR_PRINCIPLES.DRAFT

THE DAKAR PRINCIPLES

On 1 October 2026, at the Pan-African Conference on Illicit Financial Flows in Dakar, thirty-seven participants from revenue authorities, civil society and research worked in four groups, in English and in French, and endorsed a first set of principles on the governance of data centres in Africa. They cover the incentive and who audits it, the power and water a facility draws, the heat it gives off, the data it carries, and the e-waste it leaves behind, so that the continent does not become the dumping ground for the machine's old parts.

They are nascent. Before they go to any government they will be refined by practitioners, entrepreneurs, technologists, civil society and the public. The card below is for that.

SANDBOX.PLAN

The regulatory sandbox, 2027

A sandbox is a supervised space where a regulator tries a tool on real cases, with the public's rules attached, before the tool is allowed to decide. TERRA intends to start building one in 2027 with the Kenya Revenue Authority, which is a partner, and with CIAF in Cotonou, so that Benin can run one too. The Zambia Revenue Authority has shown interest. Kenya's Communications Authority and the Ministry of Information, Communications and the Digital Economy are not yet partners. Bringing them in is the intention.

First into the sandbox: the scoring tools revenue authorities are offered, the apps that employ people, and the minimum design requirement that lets a developer build and launch without pre-clearance while the state sets the floor.

CUT HERE

PLACE YOUR PRINCIPLE HERE

Finish this sentence as if your county were about to sign for a data centre tomorrow. Where I live, a data centre should never be licensed unless...

_____

_____

_____

_____

Name (optional): _____ Town / country: _____

PHOTOGRAPH IT.
SEND IT.
RESEARCH-UNDER.HFW-PROJECT-TERRA.ORG/

TO READ THE REPORTS BEHIND THIS PAPER, GO TO

HTTPS://RESEARCH-UNDER.HFW-PROJECT-TERRA.ORG/

CONTENT BY LYLA LATIF, SUPPORTED BY JAMES MAINGI · ILLUSTRATION AND LAYOUT BY BAZDEEN

PROJECT TERRA
Technology, Equality and Regulatory Risk Assessment. Supported by Luminate. Principal Investigator: Lyla Latif (PhD).

THE REPORTS
Swept Aside (gendered fiscal asymmetries, the SweepSouth case). Grounding the Cloud (data centres in Tanzania). Data centre fiscal measures in Kenya. Data centres in Dakar. Benin's data centres and cables, with CIAF (in preparation). The book Servers Without Sovereignty (in progress).

THE MONTHLY LEDGER
Content: Lyla Latif, supported by James Maingi. Illustration and layout: BAZDEEN, 2026. The Pencil and the Machine is a novel in progress by Lyla Latif; the conversations printed here are drawn from it. Every figure carries its source on the page where it appears.