

- **Harnessing technology, data, and innovations** to rapidly scale up and coordinate the digital delivery of social protection in times of need.
- Globally, Climate change risks [pushing 130 million people into poverty by 2030](#).
- Despite progress made over the last decade, 64.9 percent of the Togolese population is either poor or vulnerable to poverty and the corresponding figure in rural areas is substantially higher at 83 percent.
- Togo's high vulnerability to poverty is due to its population's exposure to lifecycle shocks such as illness or death of a household member, and, increasingly, covariate shocks such as climate change, price inflation, and conflict, disproportionately affecting the poor.



Figure Source: Lindert and Karippacheril, SP Delivery Systems (2017)
Adapted for the Playbook on Dynamic Inclusion and Interoperability (Forthcoming 2024)

Houenonvissi...a
rural farmer, widow,
grandmother





NOVISSI

HOW IT WORKS

Learns about Novissi through peers (Word of mouth), radio, community leaders and targeted SMS



SELF-REGISTRATION

Dials *855# and provides minimal data via USSD.



NOTIFICATION

Receives notification on registration (via USSD) and on eligibility status to the program (via SMS)



PAYMENT

Receives payment through mobile money account.

BENEFICIARY'S JOURNEY

OUTREACH

INTAKE & REGISTRATION

ASSESSMENT OF NEEDS AND CONDITIONS

ELIGIBILITY & ENROLLMENT DECISIONS

NOTIFICATION

PAYMENT ADMINISTRATION

MANAGEMENT

Multi-layered outreach strategy supported by massive radio campaigns, community leaders, and targeted SMS

Data pulled from various sources, including administrative data, big data, and self-reported data

Geographic assessment (areas under curfew (model 1) or poorest districts (model 2)) and individual assessment (based on occupation (model 1) or poverty level assessment using machine learning and algorithms (model 2)).

Cross-validation of registrants' data to determine eligibility and benefit amount, based on predefined criteria and gender, respectively.

Immediate notification of enrollment status

Instant mobile money payments

Beneficiary operations management through a toll-free number to address complaints, external audits, and dashboard for real-time analytics

ADMINISTRATIVE PROCESSES



At every step, a specialized call center is available to handle problems and complaints.

ASSESS

ENROLL

PROVIDE

MANAGE

THE DELIVERY CHAIN



NOVISSI

PRIORITIZING THE POOREST INDIVIDUALS

TRAINING DATA



Phone survey data collected in September 2020 was used as ground truth. A total of 8,915 individuals in the 100 poorest cantons responded to the survey and provided their consent to match their responses to call detail records.

CALL DETAIL RECORDS



Cell phone records transformed into metrics describing behaviors.

CALLS AND SMS



Volume, intensity, timing, social network characteristics, patterns of mobility and locations, international transaction features.

MOBILE DATA USAGE



Mobile data transactions, days on which data is consumed.

MOBILE MONEY TRANSACTIONS



Amount, duration, direction



MACHINE LEARNING

TRAINING DATA



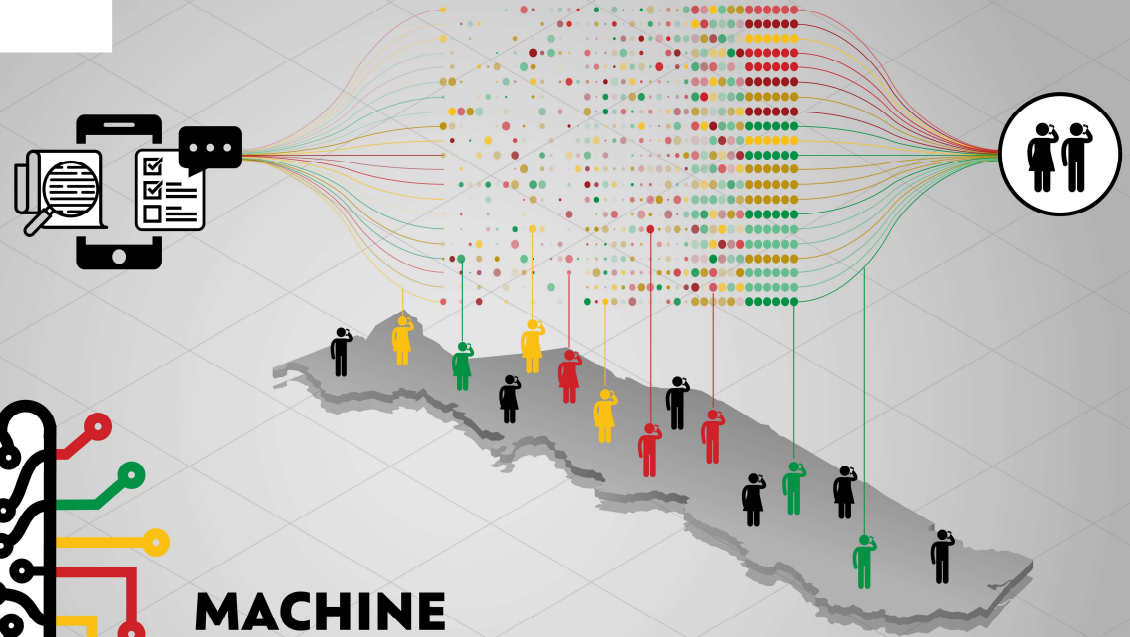
CALL DETAIL RECORDS



These data sources were matched to train a supervised machine learning algorithm to find patterns of poverty in CDR data and identify a model to predict consumption.

INDIVIDUAL ASSESSMENT

The result was a model allowing to estimate average daily consumption for each of Togo's 5.83 million mobile phone subscribers.





NOVISSI

PRIORITIZING THE POOREST CANTONS

TRAINING DATA



SURVEY DATA

EHCVM 2018-2019 survey with consumption data and geocoordinates used as ground truth

GEOSPATIAL DATA



SATELLITE DATA

Hi-res imagery, night lights



CONNECTIVITY DATA

Cell towers, devices



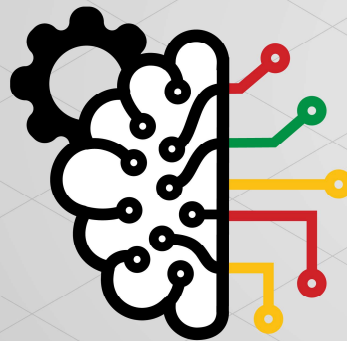
DEMOGRAPHIC DATA

Population, urban/rural



GEOGRAPHICAL DATA

Road density, elevation



MACHINE LEARNING

TRAINING DATA



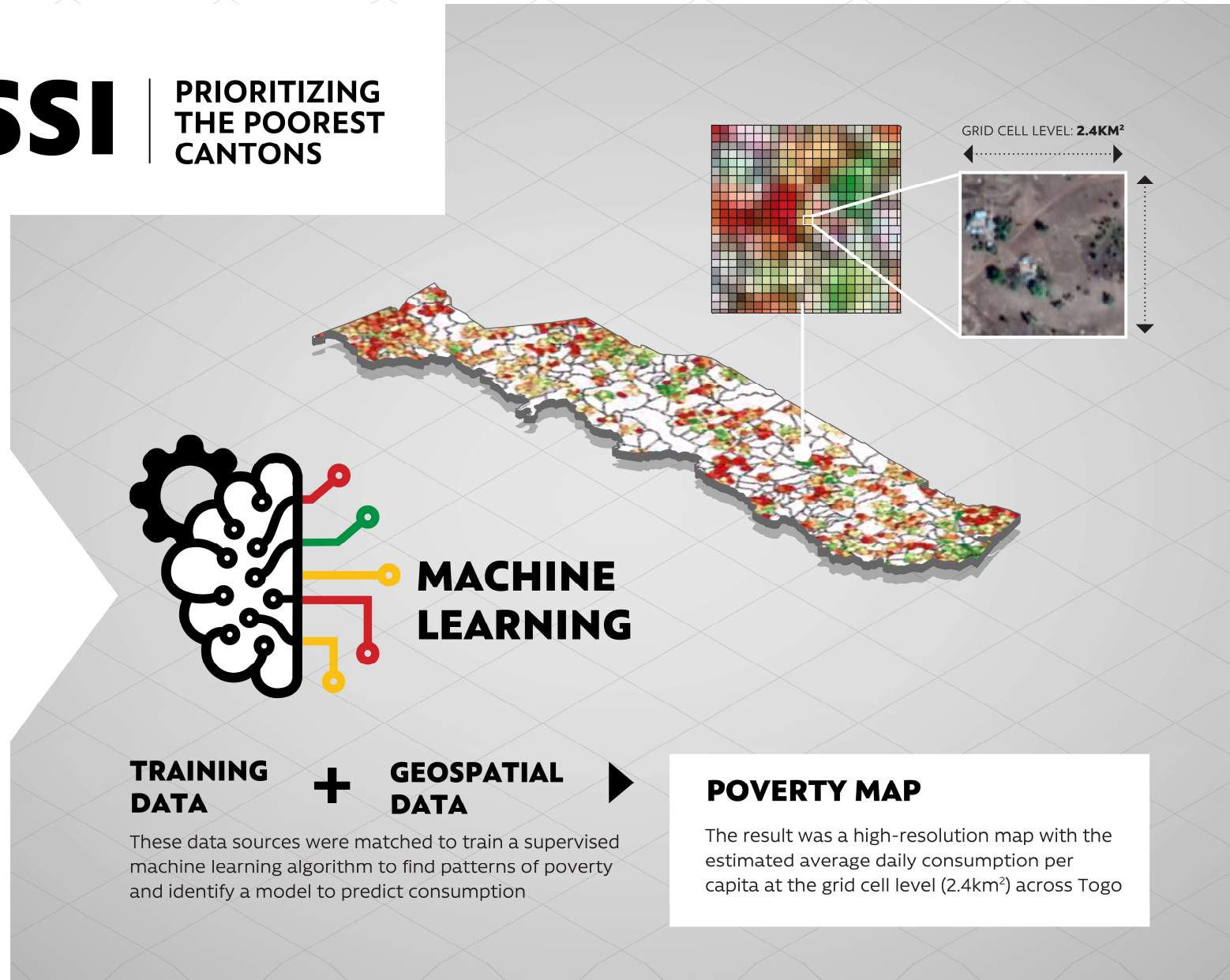
GEOSPATIAL DATA



These data sources were matched to train a supervised machine learning algorithm to find patterns of poverty and identify a model to predict consumption

POVERTY MAP

The result was a high-resolution map with the estimated average daily consumption per capita at the grid cell level (2.4km²) across Togo



NOVISSI PROGRAM



PREPARING THE SOIL

- Unique identifiers (eID)
 - Household socioeconomic data and vulnerability criteria (RSPM)
 - Payment platform
 - DataLab
- Pilot with at least 3,000 people

SEEDING

- Mobile money account
- Mobile savings account
- Universal health insurance
- Solar kit
- Low-cost smartphone as a productive asset

WATERING OVER 18 MONTHS

- Monthly cash transfers
- Matching grant for savings accounts
- Financial and productive inclusion accompanying measures
- Co-responsibility of beneficiary to invest in human capital (e.g., education, health)
- Shock-responsive cash transfers

HARVESTING

- Increase in human capital
- Increase in financial inclusion
- Increase in productive inclusion

GARDENING

Local economic multiplier effects

BENEFICIARIES

352,000
WOMEN
as designated recipients

440,000
HOUSEHOLDS
in total until 2028 (110,000 households every 18 months)

MONTHLY CASH TRANSFERS

8,170 FCFA,
WOMEN

7,000 FCFA,
MEN

SHOCK-RESPONSE

250,000
HOUSEHOLDS receive lump sum cash transfers to mitigate climate, conflict, health, and other shocks

SAVINGS

The difference in the amount for women (1,170 FCFA) automatically goes to a mobile savings account

The state tops it up with a matching grant of up to 1,170 FCFA per month

Women save 42,000 FCFA when they graduate from the program

Savings can be used as collateral for microcredit or to start a business

CO-RESPONSIBILITY

Co-responsibility measures can help get children into school and eradicate child labor

Mitigation of catastrophic health spending through health insurance

Pay-as-you-go mechanisms for smartphones and solar kits

SMARTPHONES

1 Families receive training to see the phone as a business tool that belongs to the women and not as an entertainment device

2 Women use the phone to coordinate and improve access to markets and price discovery

3 Beneficiaries are encouraged to use their mobile money account for transactions and not to cash out immediately

Source: Tina George and Ana Lucia Cardenas, World Bank.

RESOURCES

Lawson, Cina; Koudeka, Morlé; Cárdenas Martínez, Ana Lucía; Alberro Encinas, Luis Iñaki; Karippacheril, Tina George. 2023. *Novissi Togo: Harnessing Artificial Intelligence to Deliver Shock-Responsive Social Protection*. Social Protection and Jobs Discussion Papers; 2306. © World Bank, Washington, DC.

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