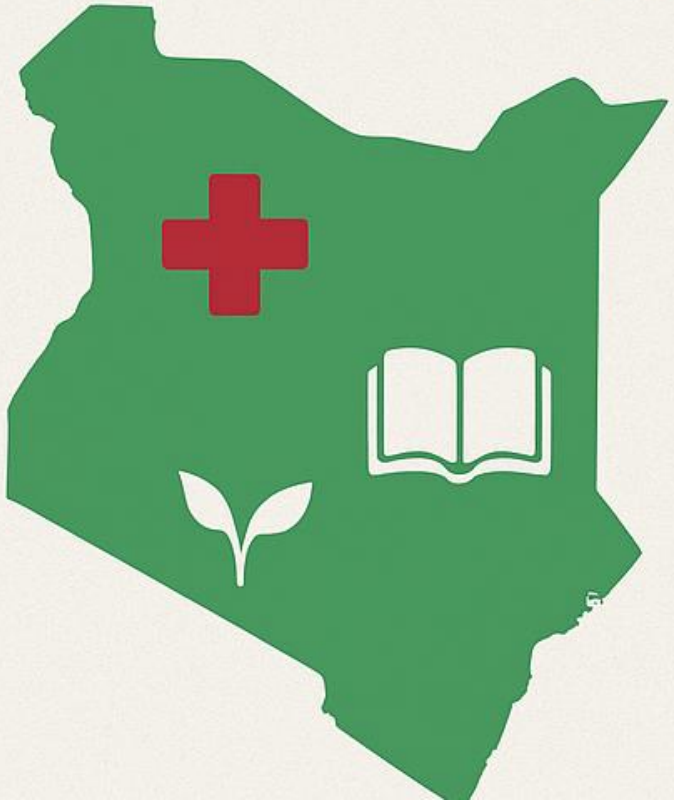
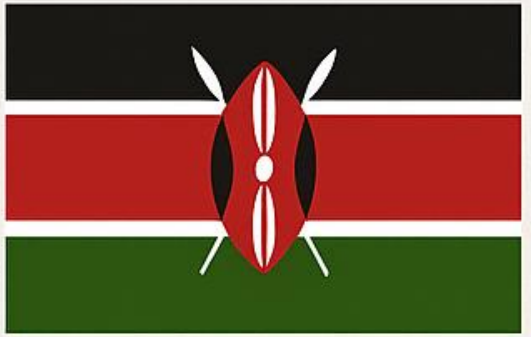
Funding on Hold

The Real Impact of USAID Cuts on Kenya's Progress



USAID
FROM THE AMERICAN PEOPLE



2010 2020 2025

TEAM – AHJIN ANALYTICS

Pauline Kariuki
Business Understanding
Data Analysis

Norman Mwapea -
TL
Modeling

Angela Chesire
Data Analysis

Emmanuel Chol
Deployment

Carlton Ogola
Modeling

PROBLEM STATEMENT

After a 64 year run, the foreign assistance administered by USAID has come to an end. These funding cuts have disrupted Kenya's key development sectors — from health and education to agriculture and the economy.

An example is given below of the health sector and disruption of USAID-funded initiatives supporting HIV prevention and treatment in Kenya:

Sector Spotlight: Health Sector

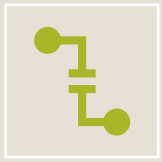
- In September 2025, a leading Kenyan NGO that was pioneering HIV prevention was forced to downsize its workforce from 100 employees to just 25, after USAID funding was withdrawn. Following this, SWOP clinics were shut down across the country, halting HIV testing, treatment, and outreach for thousands of vulnerable Kenyans.
- This reflects a nationwide crisis after the funding cuts - shrinking budgets, lost jobs, and stalled progress in health, education, agriculture, and governance.
- According to a document titled, **'USAID-Terminated-Awards'** , Kenya has been significantly affected by the cuts, with healthcare, water and sanitation, governance and education programmes losing critical funding.
- Our analysis seeks to explore the real-world consequences of the recent USAID funding cuts and its impact on **Kenyan sectors and long-term development.**

1. BUSINESS UNDERSTANDING

For over a decade, the United States — through United States Agency for International Development (USAID) — has been one of Kenya's biggest development partners.

From 2010 to 2025, billions in aid strengthened health, education, agriculture, and economic growth. In July 2025, the Trump administration formally shut down the USAID cancelling 83% of programs and disrupting services millions rely on.

Reports now show projections of up to 14 million deaths globally if the current cuts continue through 2030.



The Global Fund warns that without new funding sources, these cuts could worsen poverty, force more people from their homes, and slow progress in fighting malaria, tuberculosis, and HIV. The sudden withdrawal also triggered economic instability and strained vital services across Africa.

2.DATA UNDERSTANDING

- **Source:** USAID Foreign Assistance Data (2000 – 2025)
- **Dataset Overview:** 80,000+ records and 56 columns

Main Columns:

- *Fiscal Year*
- *Country (Kenya)*
- *Sector / Sub-Sector*
- *Agency / Funding Account*
- *Obligations* and *Disbursements (USD)*

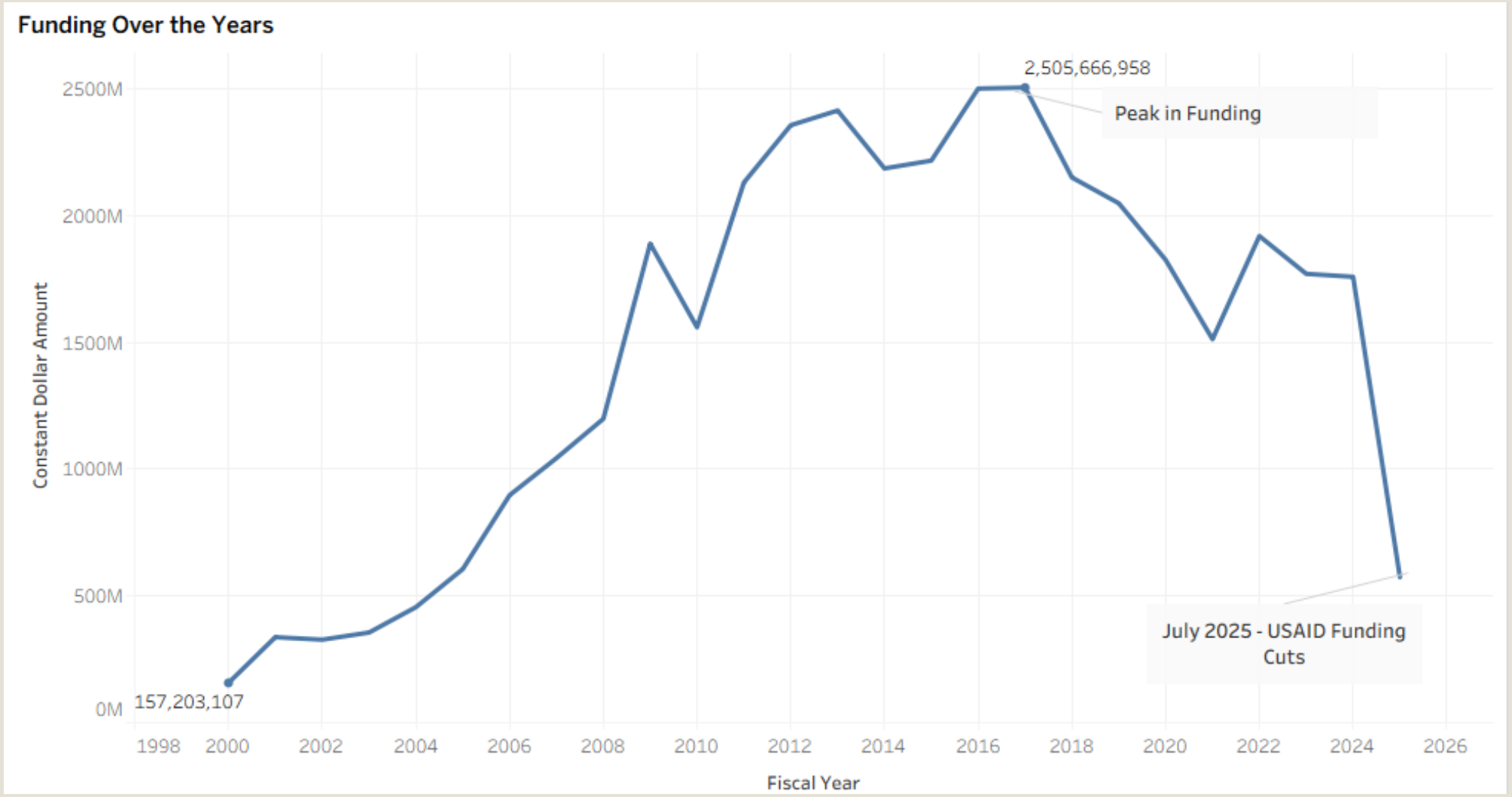
3.DATA ANALYSIS

This analysis investigates how USAID funding to Kenya evolved over 25 years — and the real-world consequences of its recent decline.

It explores:

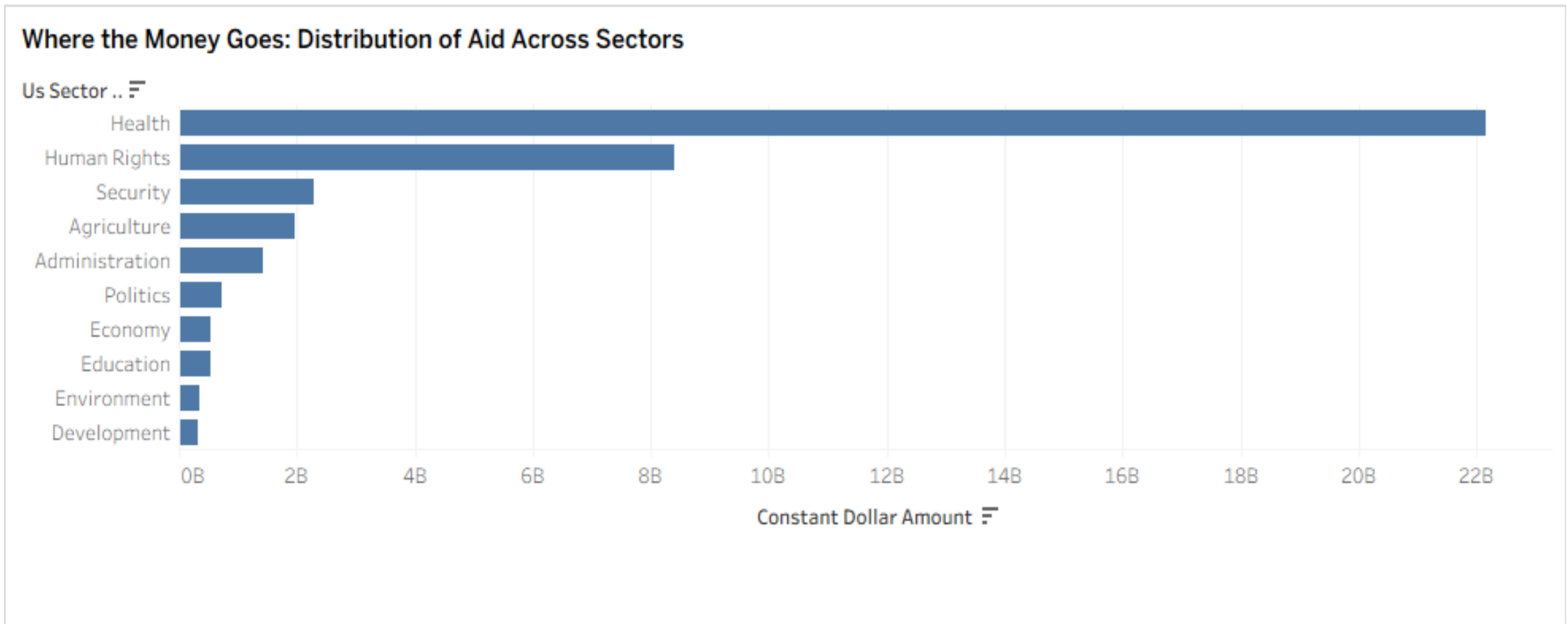
- Which **sectors are most and least affected by the cuts**.
- **Whether USAID remains the top donor**, and who's stepping back or stepping up.
- **What the future holds** if funding reductions persist.

FROM SURGE TO SLOWDOWN: HOW AGENCY FUNDING HAS EVOLVED OVER TIME (UNIVARIATE ANALYSIS)



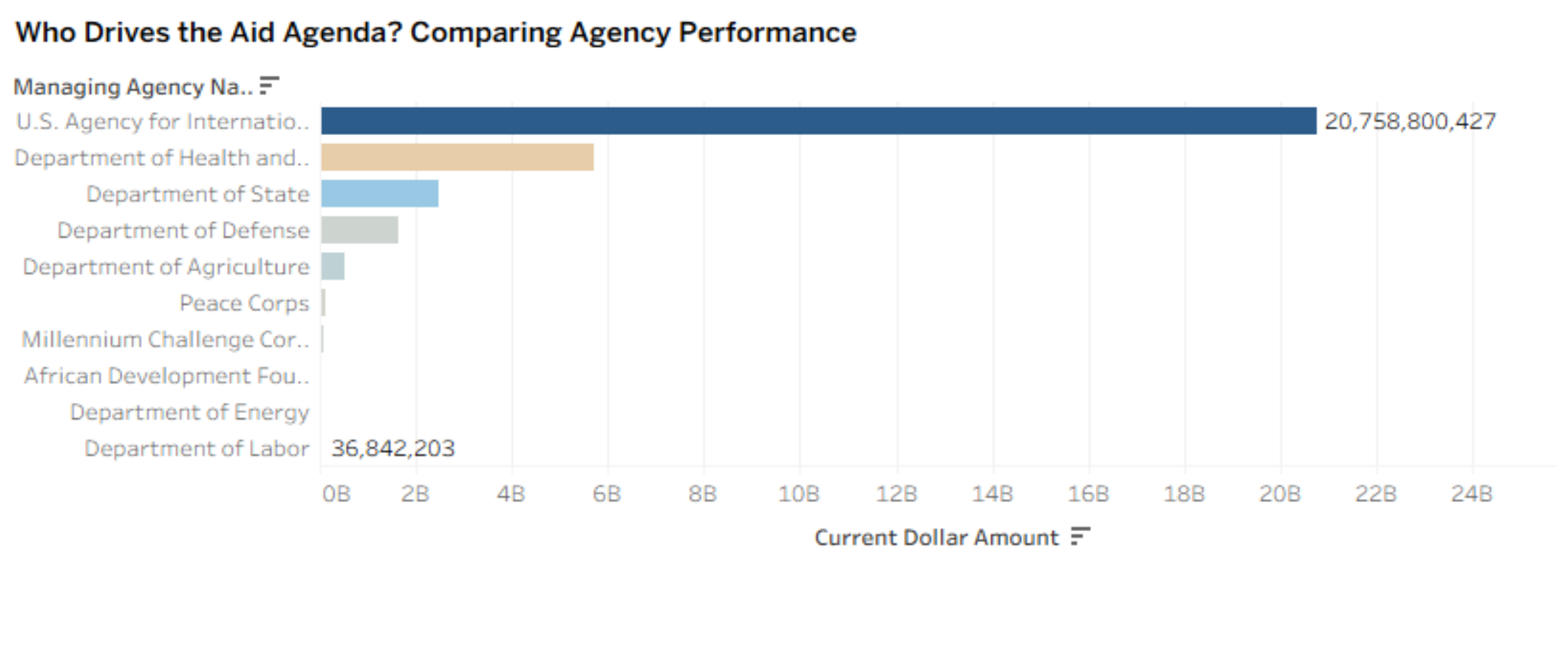
- **USAID funding to Kenya rose, peaking at $2.5B but fell sharply after 2020, following the July 2025 aid freeze**

DISTRIBUTION OF AID ACROSS SECTORS (UNIVARIATE ANALYSIS)



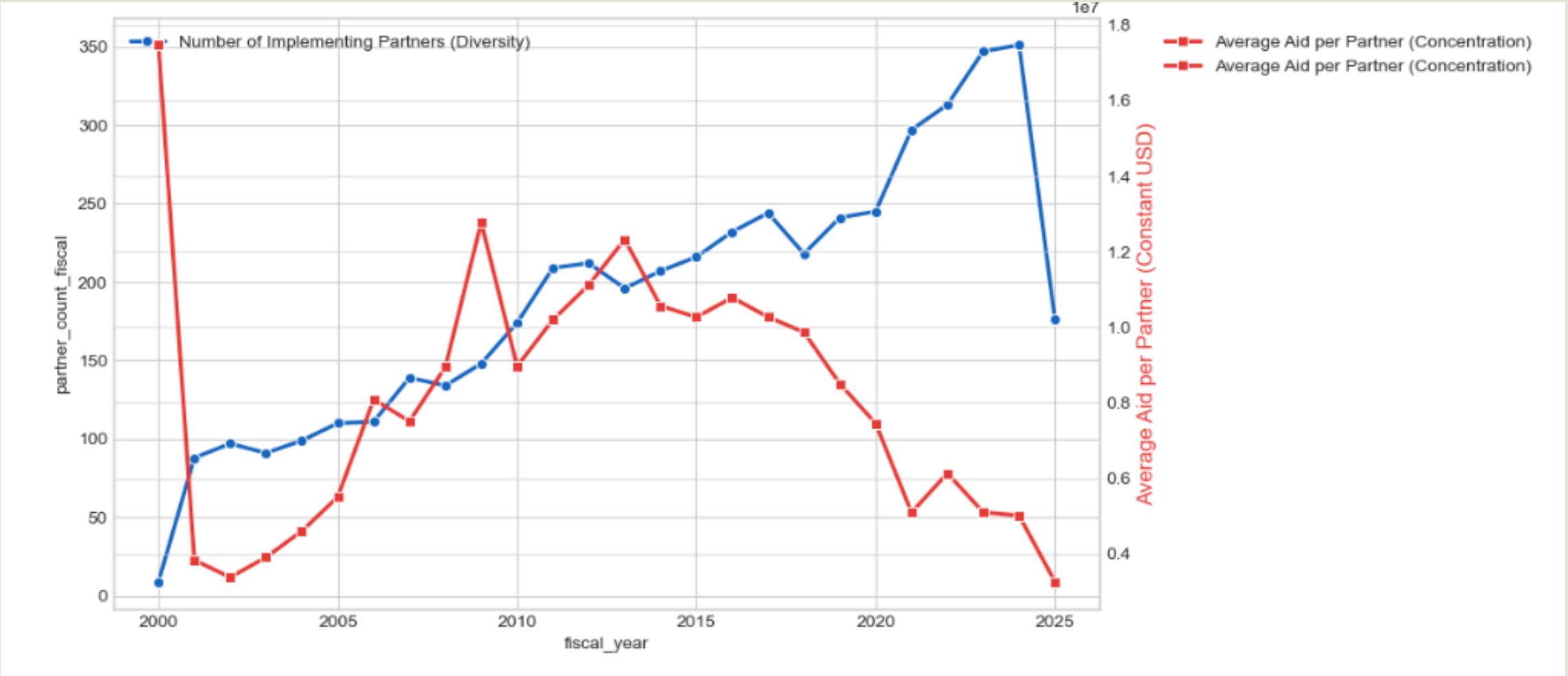
- **Most vulnerable sectors if cuts persist –** Health, Human Rights and Security
- **Least vulnerable sectors –** Education, Environment and Development

TOP PERFORMING AGENCIES IN AID MANAGEMENT (UNIVARIATE ANALYSIS)



- **The USAID clearly drives the aid agenda in Kenya, providing the majority of Kenya's external development funding**
- **Other U.S. agencies (like the Peace Corps or Trade & Development Agency) contribute, but their roles are minor compared to USAID's strategic and financial influence**

AID DIVERSITY AND CONCENTRATION ACROSS IMPLEMENTING PARTNERS (BIVARIATE ANALYSIS)



- **Broad Engagement -** Number of implementing partners (diversity) has increased over time
- **Aid Distribution is uneven -** Despite many partners, funding is not evenly shared
- **Moderate Concentration** - A few large partners control a major share of total aid

MODELING – REGRESSION ANALYSIS

- The main modeling approach used was **regression analysis** to quantify relationships between aid and sectoral dynamics.

Model performance

Model	R^2 (Train)	R^2 (Test)	RMSE (Train)	RMSE (Test)	MAE (Test)
OLS	0.7468	0.7063	1.4340	1.4566	1.0845
Robust OLS	0.7468	0.7063	1.4340	1.4566	1.0845
Clustered OLS	0.7468	0.7063	1.4340	1.4566	1.0845
Weighted LS	0.7433	0.7048	1.4439	1.4603	1.0796
ElasticNet	0.7427	0.7031	1.4456	1.4644	1.0960

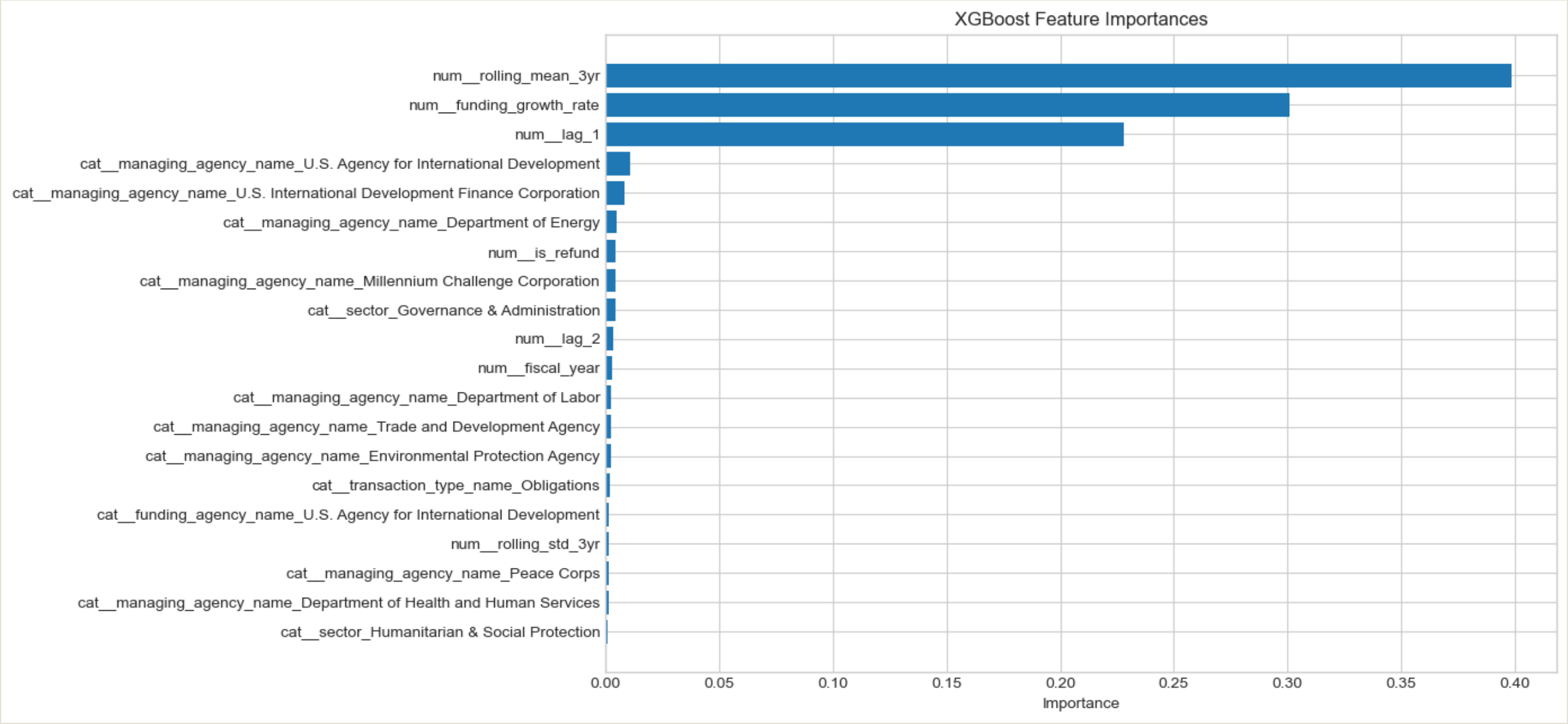
Interpretation:

- The models explain roughly 70% of the variation in U.S. aid amounts to Kenya - indicating strong predictive performance.
- OLS and its robust variants are both interpretable and stable.
- ElasticNet confirms the same structural relationships while penalizing weaker effects, validating the model's generalization capacity.

PREDICTIVE ANALYTICS USING ENSEMBLE TECHNIQUES

Iteration	Model	MAE	RMSE	R^2	Notes
Vanilla	RandomForest	73,195.86	2,320,156.61	0.6446	Baseline ensemble model
Vanilla	XGBoost	93,990.67	1,793,715.74	0.7876	Baseline ensemble model
Vanilla	LightGBM	98,255.71	2,222,033.51	0.6741	Baseline ensemble model
Vanilla	CatBoost	66,005.40	1,282,695.68	0.8914	Baseline ensemble model
Vanilla	Stacked Ensemble	75,383.22	1,060,092.20	0.8646	Combines multiple base learners
Tuned (RandomizedSearchCV)	Stacked Ensemble (XGBoost + LGBM)	71,921.93	1,073,122.79	0.8612	RandomizedSearchCV applied on stacked model components
Tuned (RandomizedSearchCV + TimeSeriesSplit)	**XGBoost**	**16,884.69**	**181,031.84**	**0.9922**	**Exceptional accuracy and generalization**
Tuned (RandomizedSearchCV + TimeSeriesSplit)	CatBoost	33,513.60	510,427.57	0.9380	Stable model, high R^2 with moderate error
Optuna Optimization	XGBoost	38,174.08	688,506.65	0.8872	Optuna-based Bayesian tuning approach
Optuna Optimization	CatBoost	35,645.03	510,692.07	0.9380	Optuna results consistent with TimeSeriesSplit tuning

FEATURE IMPORTANCE



CONCLUSIONS

- **USAID cuts slow Kenya's progress toward Vision 2030**
  USAID has been the primary driver of Kenya's aid agenda — setting priorities, shaping program design, and influencing national progress toward Vision 2030 through its funding decisions. The 2025 USAID funding freeze exposed critical gaps in local resilience and sustainability across major development programs.
- **Health, Human Rights, and Agriculture are the hardest hit (Top USAID Funded Sectors)**
  These sectors collectively receive over 80% of U.S. assistance, meaning even small disruptions cause wide-reaching effects—clinic closures, stalled farmer programs, and suspended community outreaches.
- **Funding is highly volatile.**
  USAID aid levels fluctuate sharply in response to global and political shifts, making long-term planning difficult for Kenya's ministries and NGOs.
- **Data modeling can help predict risks.**
  Regression and forecasting models ($R^2 \approx 0.99$ for tuned XGBoost) demonstrated strong potential to anticipate the effects of aid shocks — offering an early-warning system for policy planning.

RECOMMENDATIONS

- **Reduce dependency on one donor**

  Kenya should work with more partners (like the European Union, World Bank, and African Development Bank) to avoid being too dependent on USAID.

- **Increase local funding**

  The government needs to raise and manage more of its own funds to keep essential services running even when aid stops.

- **Plan for stable partnerships**

  Negotiate long-term funding agreements to prevent sudden program closures in the future.

- **Improve data systems**

  Build better databases to track aid flows and measure how funding changes affect different sectors.

- **Use forecasting in planning**

  Apply data science and predictive models to plan budgets, identify vulnerable sectors, and make faster policy decisions.

THE END