

QAT Forecasting Module Preview

RHSC - November 2022



USAID
FROM THE AMERICAN PEOPLE

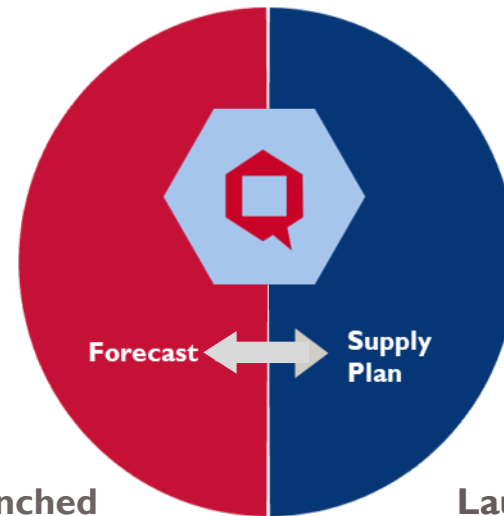
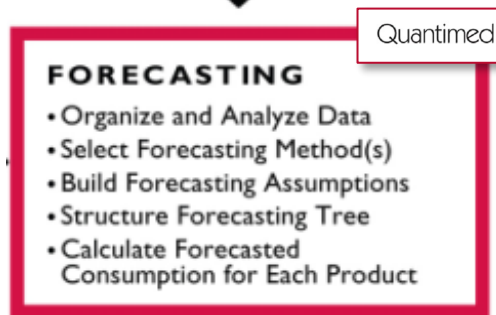
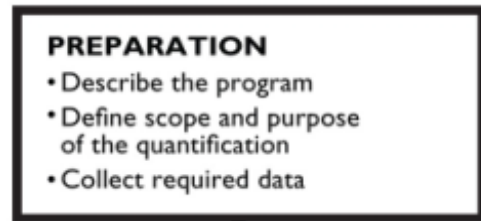


PEPFAR
U.S. President's Emergency Plan for AIDS Relief

What is the Quantification Analytics Tool?

The **Quantification Analytics Tool (QAT)**, is a modernized solution for country-led supply planning and forecasting. Funded by USAID, QAT leverages new technologies, builds on existing tools, and enables program managers to:

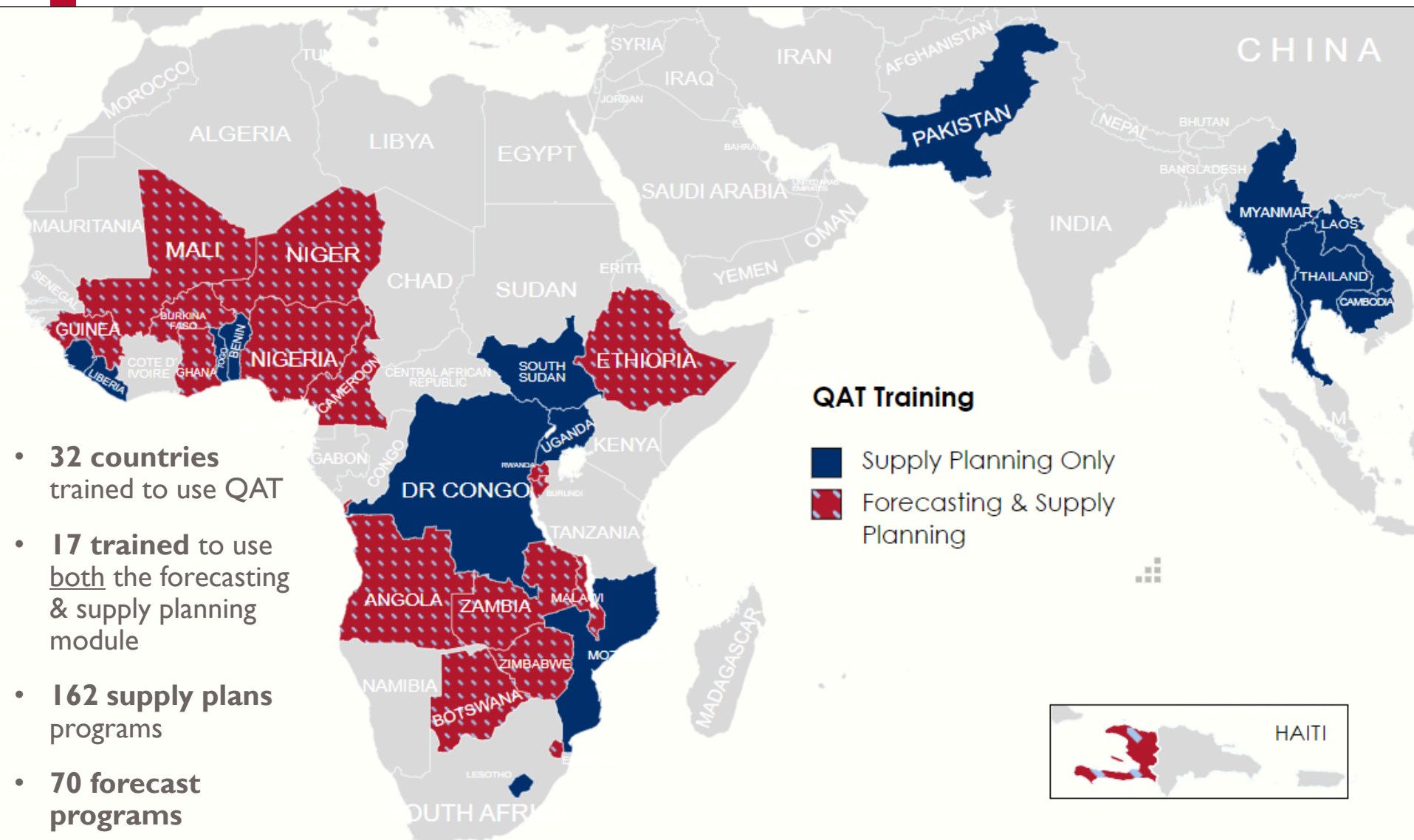
- forecast commodities,
- optimize commodity procurement schedules,
- monitor the stock status of products and
- share data with external platforms and key stakeholders



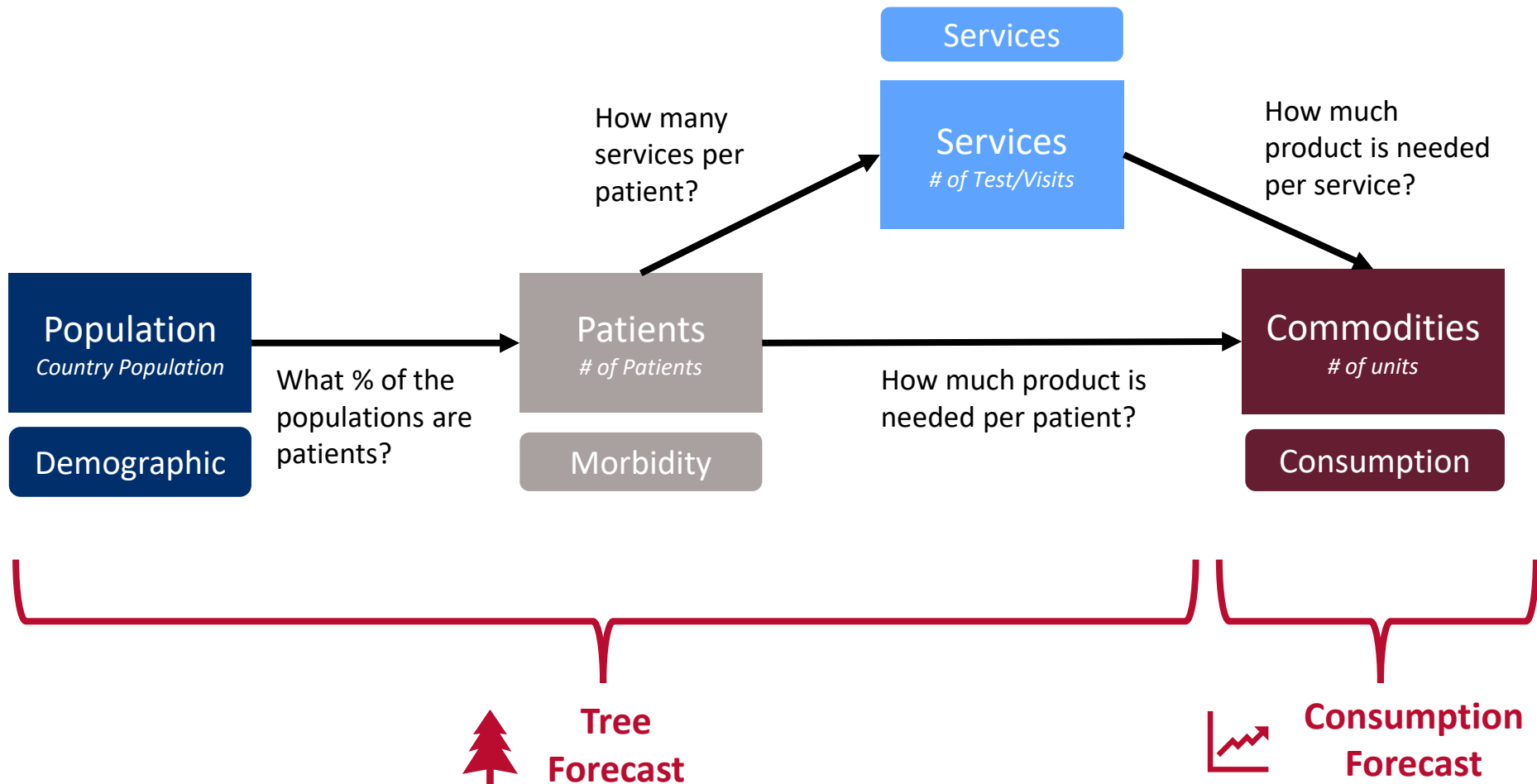
Launched
June 2022
(Module 2)

Launched
Dec 2020
(Module 1)

Where is QAT being used?



Summary of Forecasting Methods

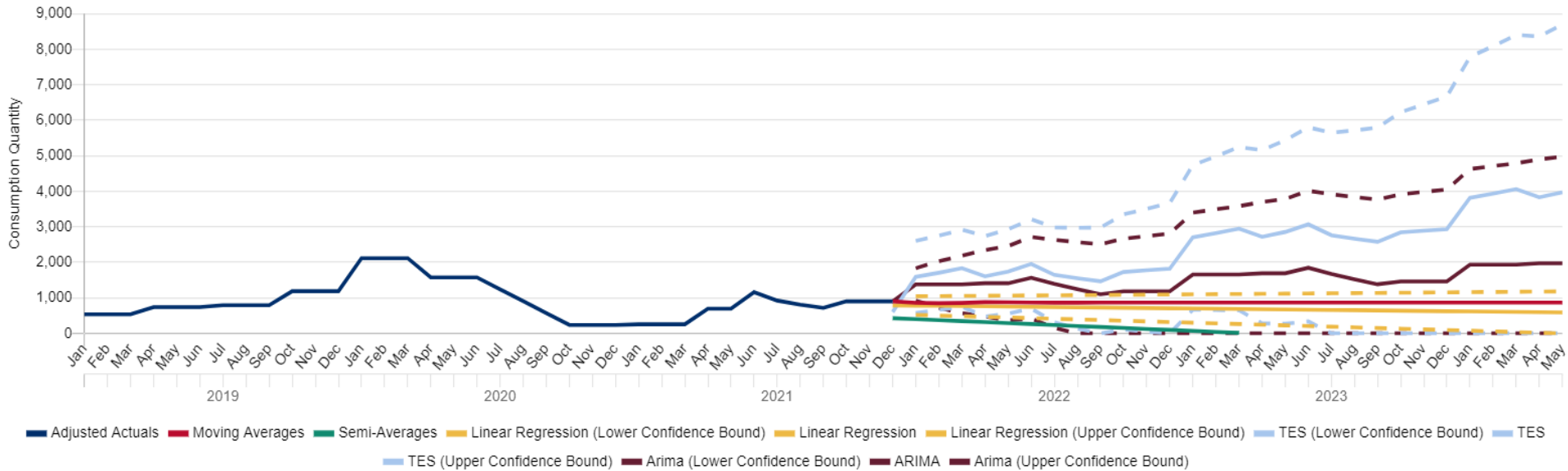


QAT Forecasting – What’s New?

Functionality	QAT
Cloud-based	✓
Ability to work offline	✓
Role-based access	✓
Consumption Forecast	✓
Ability to import actuals data	QAT Import
Tree Forecast (Demographic, Morbidity, Services)	✓
Flexibility to design forecast	✓
Ability to plan transitions	✓
Availability of templates	✓
Ability to compare forecast methods	✓
Data analytics and visualization	Enhanced
Ability to import to supply planning	QAT import
User-friendly	✓

Consumption-Based Forecasts – Advanced Extrapolation Methods

National Forecast for Zidovudine 10 mg/mL Solution w/ Syringe, 240 mL

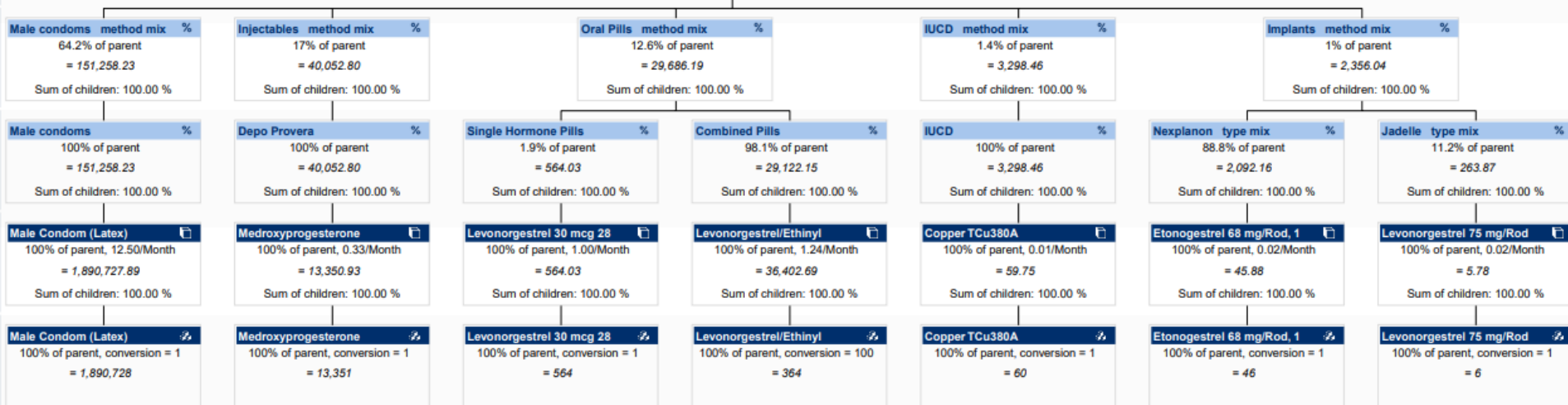
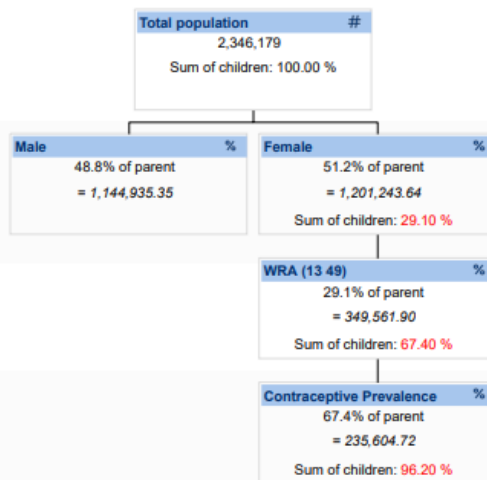


Lowest Error

Type of Forecast Error ⓘ	Moving Averages ⓘ	Semi-Averages ⓘ	Linear Regression ⓘ	TES ⓘ	ARIMA ⓘ
RMSE	483.244	553.262	509.752	730.007	207.165
MAPE	0.609	0.761	0.703	1.171	0.216
MSE	233,524.400	306,098.300	259,847.305	532,909.639	42,917.228
WAPE	0.395	0.524	0.443	0.725	0.117
R ²	0.274	0.019	0.019	0.181	0.856

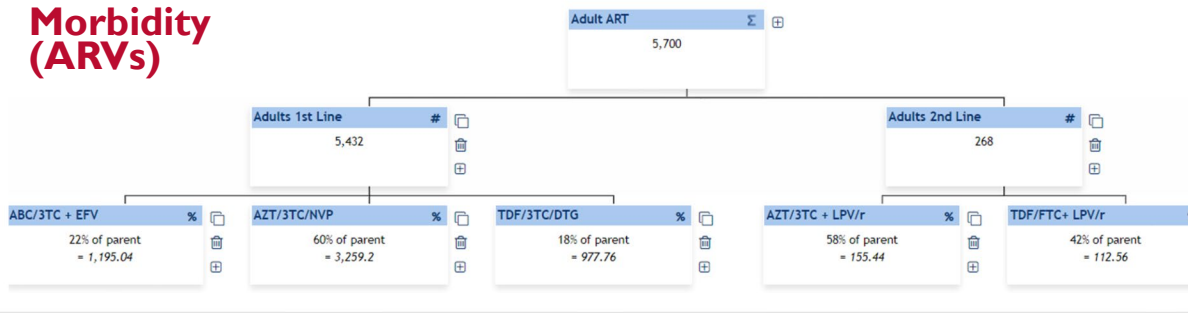
Tree Forecasts – Sample Trees

Demographic (SRH)

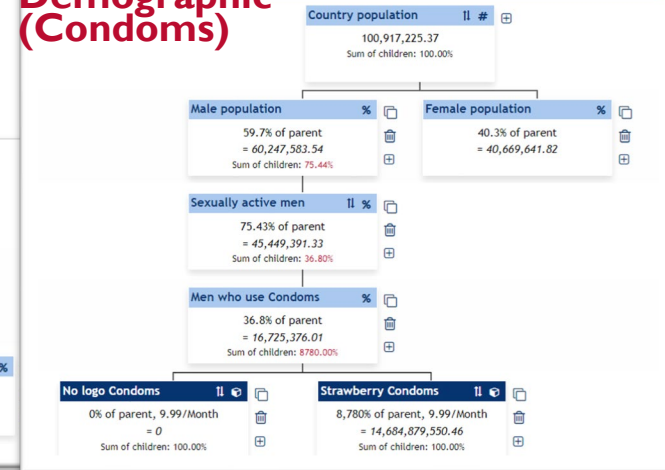


Tree Forecasts – Sample Trees

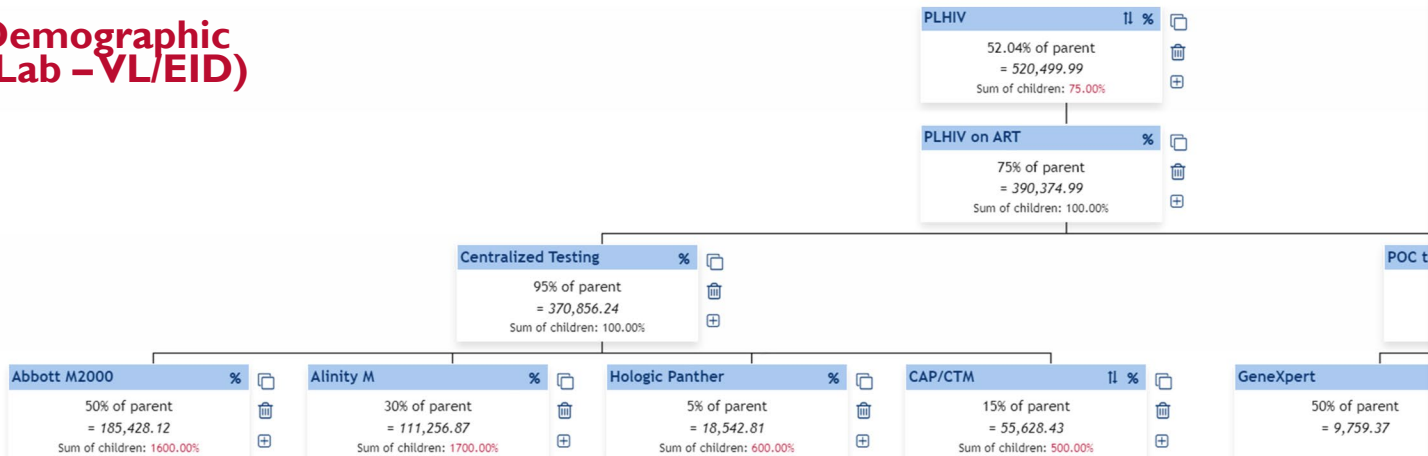
Morbidity (ARVs)



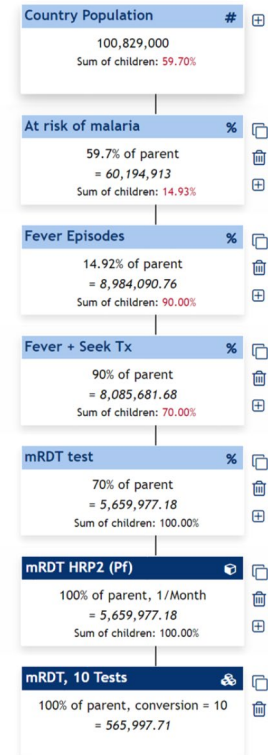
Demographic (Condoms)



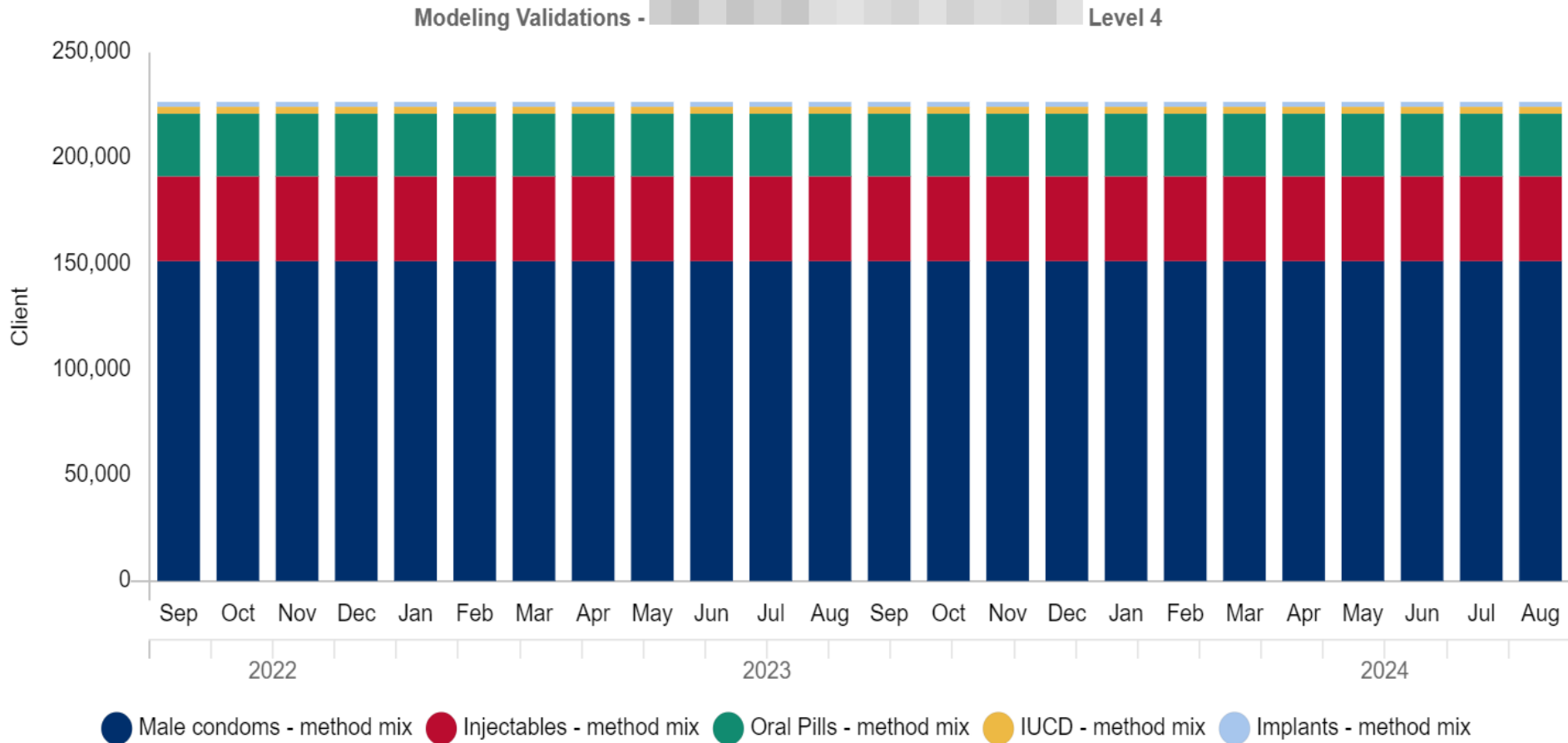
Demographic (Lab – VL/EID)



Demographic (malaria tests)

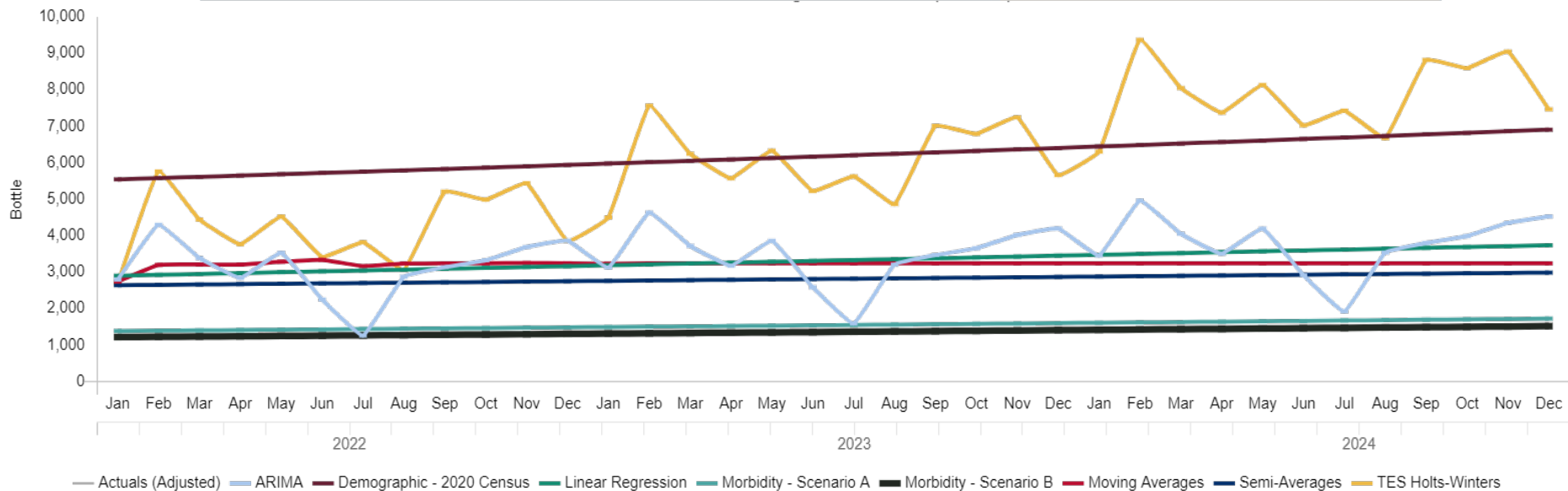


Tree Forecasts – Modeling



Selecting your final forecast – Compare and Select

Select as forecast?	Display?	Type	Forecast	Total Forecast	Compare to Consumption Forecast
<input type="radio"/>	<input checked="" type="checkbox"/>	Cons	ARIMA	123,675	N/A
<input type="radio"/>	<input checked="" type="checkbox"/>	Tree	Demographic - 2020 Census	223,169	2.42% above the highest consumption forecast.
<input type="radio"/>	<input checked="" type="checkbox"/>	Cons	Linear Regression	119,480	N/A
<input type="radio"/>	<input checked="" type="checkbox"/>	Tree	Morbidity - Scenario A	55,792	44.93% below the lowest consumption forecast.
<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	Tree	Morbidity - Scenario B	49,097	51.54% below the lowest consumption forecast.
<input type="radio"/>	<input checked="" type="checkbox"/>	Cons	Moving Averages	116,096	N/A
<input type="radio"/>	<input checked="" type="checkbox"/>	Cons	Semi-Averages	101,314	N/A
<input type="radio"/>	<input checked="" type="checkbox"/>	Cons	TES Holts-Winters	217,890	N/A



Viewing your final forecast – Forecast Summary

Planning unit	Total Forecasted Quantity ⓘ	Procurement Surplus/Gap ⓘ	Procurements Needed (USD) ⓘ
Condoms			
Male Condom (Latex) Lubricated, No Logo, 53 mm, 1 Each 4181	113,443,680	-118,795,848	\$ 3,563,875
Injectable Contraceptives			
Medroxyprogesterone Acetate 150 mg/mL, IM Injection (1 mL Vial), 1 Vial 2635	801,060	-881,166	\$ 35,247
Combined Oral Contraceptives			
Levonorgestrel/Ethinyl Estradiol 150/30 mcg + Placebo, 28 Tablets/Cycle (SM), 100 Cycles 7345	21,840	-19,929	\$ 6,776
Progestin Only Pills			
Levonorgestrel 30 mcg 28 Tablets/Cycle, 1 Cycle 6846	33,840	22,257,176	
Copper-Bearing Intrauterine Devices			
Copper TCu380A Intrauterine Device, 1 Each 2478	3,600	-3,770	\$ 58,284
Implantable Contraceptives			
Etonogestrel 68 mg/Rod, 1 Rod Implant, 1 Each 2983	2,760	-3,036	\$ 33,396
Levonorgestrel 75 mg/Rod w/ Trocar, 5 Year Efficacy, 2 Rod Implant, 1 Each 3875	360	-396	\$ 4,356
		Product Cost	\$ 3,701,934.14
		Freight (0%)	\$ 0.00
		Total Cost	\$ 3,701,934.14



USAID
FROM THE AMERICAN PEOPLE

USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM
Procurement and Supply Management

Thank you!

Feel free to send questions to HSS_FASP_HQ@ghsc-psm.org