map

SMC Alliance/AMP Annual Meetings 2026

MAP ITN-CM allocation tool: exploring prevention and case management under limited resources

Tasmin Symons

Talk outline

History of tool

Current functionality
(GC7 reprioritisation use case)

Potential future functionality and use cases

History of tool: GC7 reprogramming

- May 2025:
  - Major concern about disruption to GC7 funds for planned ITN campaigns in 2025/2026;
  - Countries potentially facing urgent reprogramming under reduced budgets
- Reprogramming raises many questions about optimal strategies and trade-offs
- One potentially common scenario:
  - Maintain case management everywhere
  - Reduce planned ITN distribution (e.g. subnational withdrawal; demographic targeting, household capping)
- This would raise two immediate operational questions:
  - Where should the ITNs be withdrawn? (maximize savings while minimizing cases?)
  - What would be knock-on effect on ACT/RDT commodity needs?
- Partners asked MAP to develop a simple tool to help explore these trade-offs
  - Brought together two pre-existing models:
    - ITN coverage model: predicts coverage trajectory given different distribution scenarios
    - Geospatial prevalence/incidence model: estimates impact of changing coverage on case burden

Talk outline

History of tool

Current functionality
(GC7 reprioritisation use case)

Potential future functionality and use cases

GC7 reprioritisation tool: current functionality

We have developed a simple tool which allows users to

- Configure ITN distribution strategies, starting from current planned distributions.
- Quantify the change in ITN volumes required and compare to available/feasible volume.
- Gain insight into plausible change in case management commodity need, relative to current plans.
- Work with MAP to update/refine input data and simulated distribution strategies.

The tool is not a case management quantification tool, nor a forecast.

Brief Methodology: MAP ITN and burden models used for this tool

Given scenarios of ITN volumes, we produce estimated change in malaria cases through a two-step modelling process:

- We generate scenarios of ITN coverage (use) given burn-in distribution volumes, estimated ITN attrition rates, and the scenario volumes
- We estimate impact on malaria cases via MAP *Pf*PR and clinical incidence models, given these ITN coverage scenarios.

Estimated change in case management need is assumed to **relatively** track change in estimated community-level burden – so e.g. 20% more cases overall means a 20% increase in cases attending health facilities.

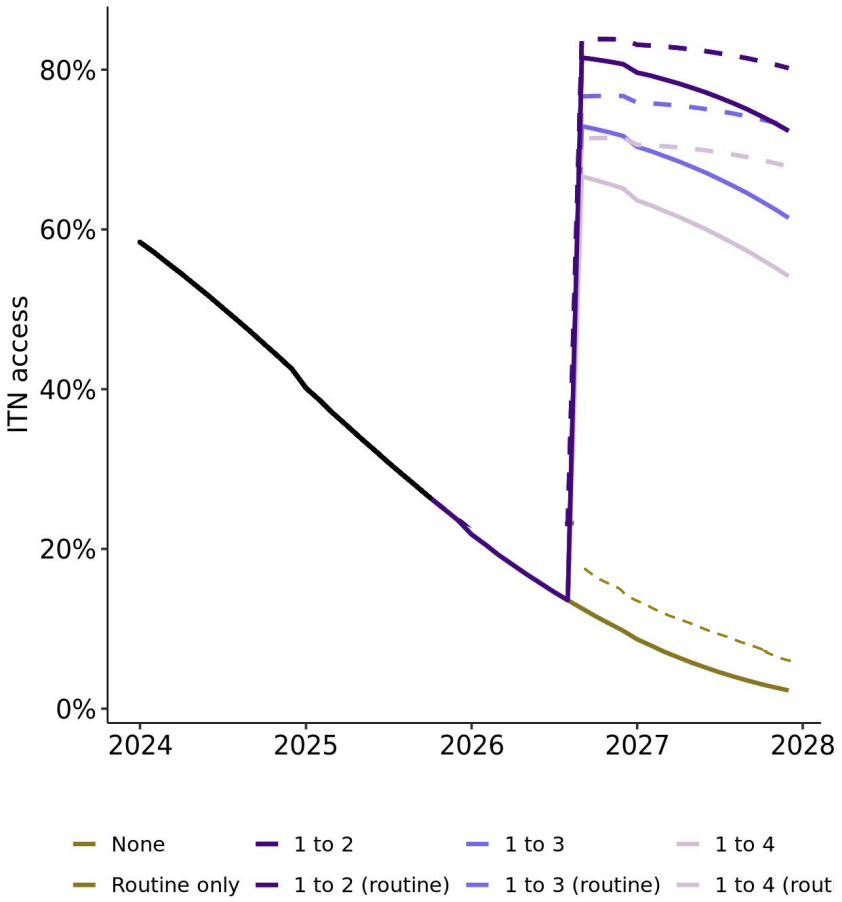
Brief Methodology: MAP ITN and burden models used for this tool

After burning in financed ITN distributions to Q2 2025, we simulated a range of possible scenarios of coverage to December 2027 for each Admin2.

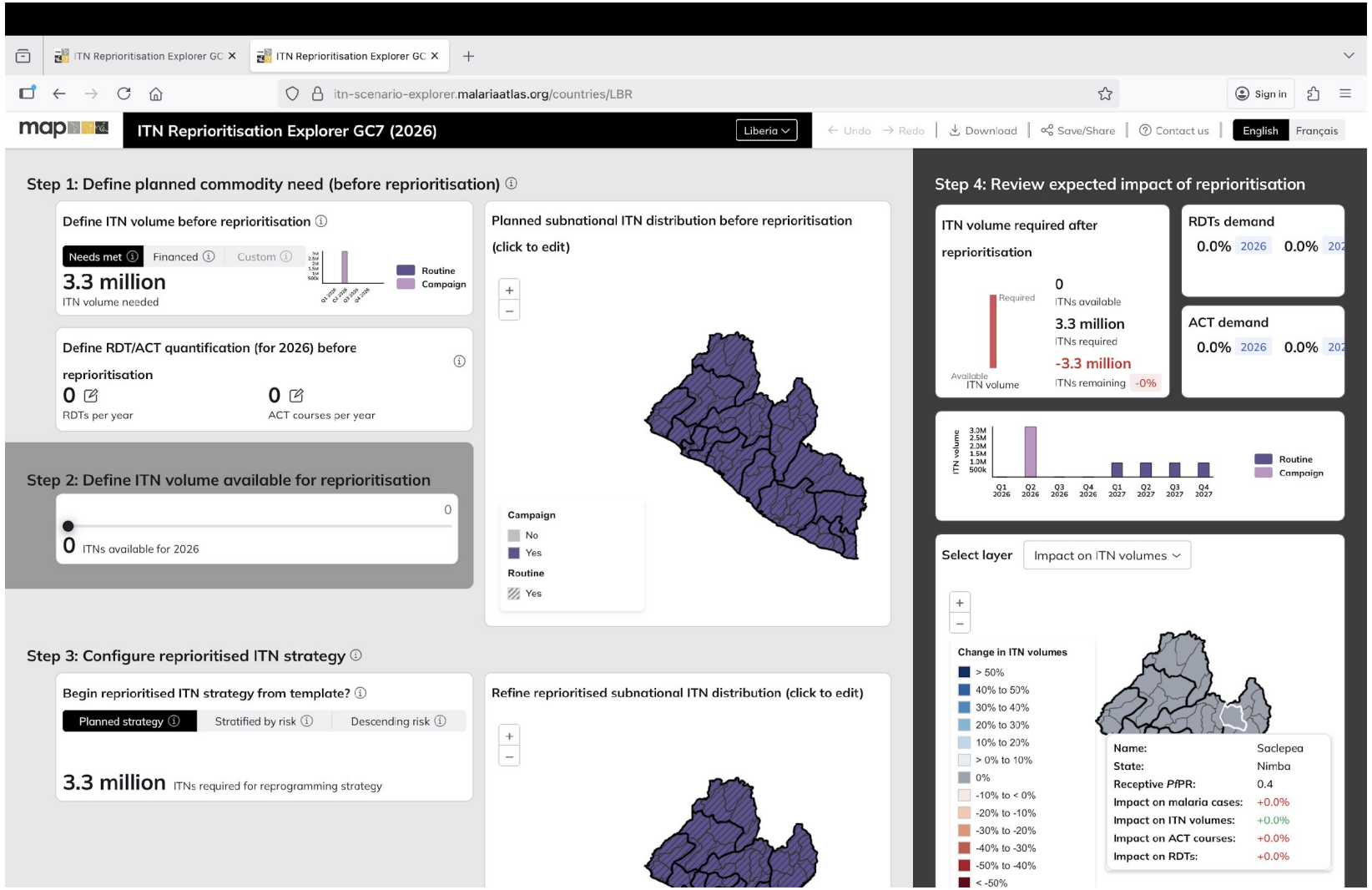
Different campaign strategies were simulated according to the table below. In addition to these, routine distribution was simulated.

Number of ITNs by household size

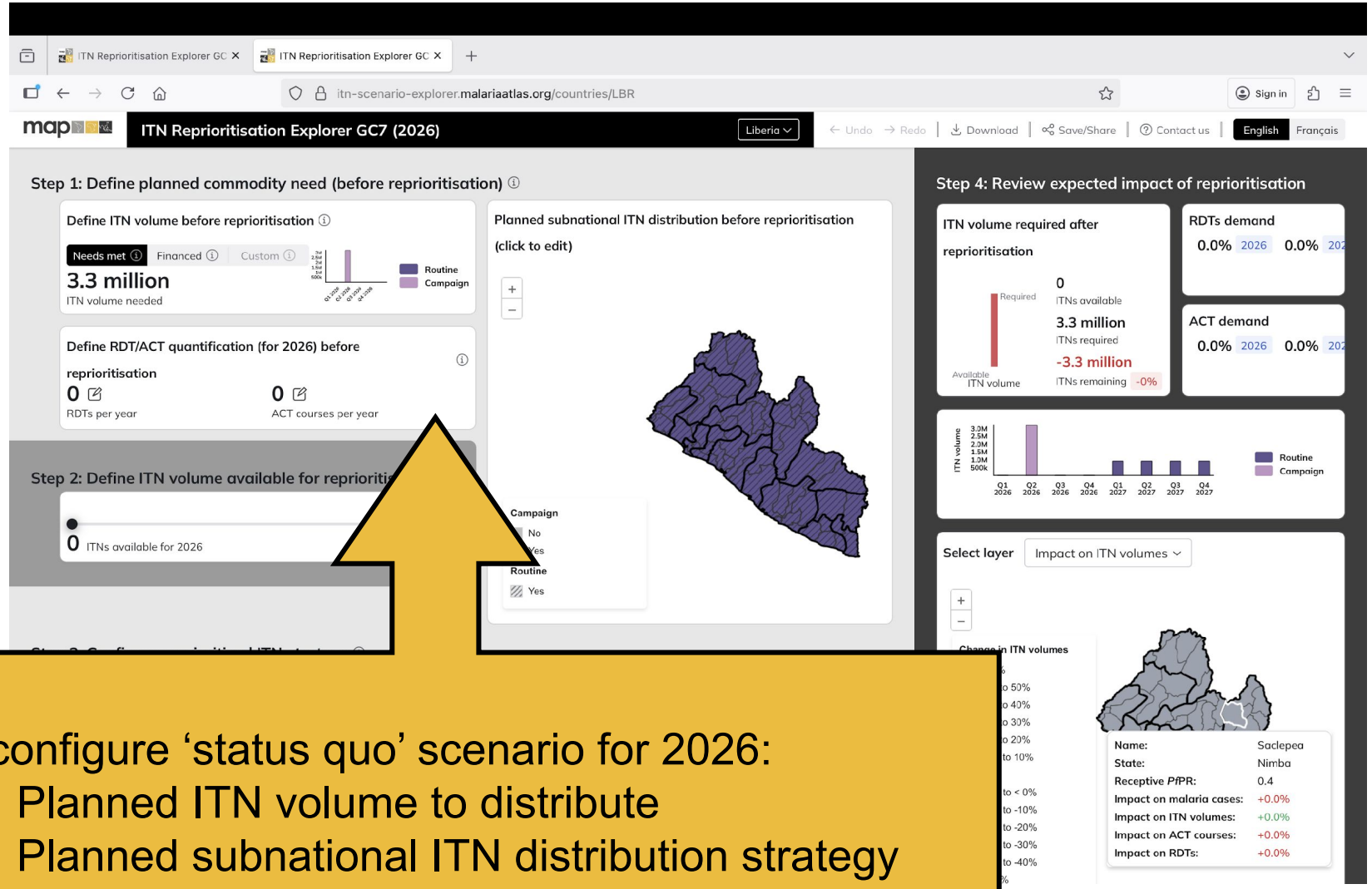
ITN Distribution ratio	1 person	2 person	3 person	4 person	5 person	6 person	7 person
1:2	1	1	2	2	3	3	4
1:3	1	1	1	2	2	2	3
1:4	1	1	1	1	2	2	2



GC7 ITN reprogramming tool



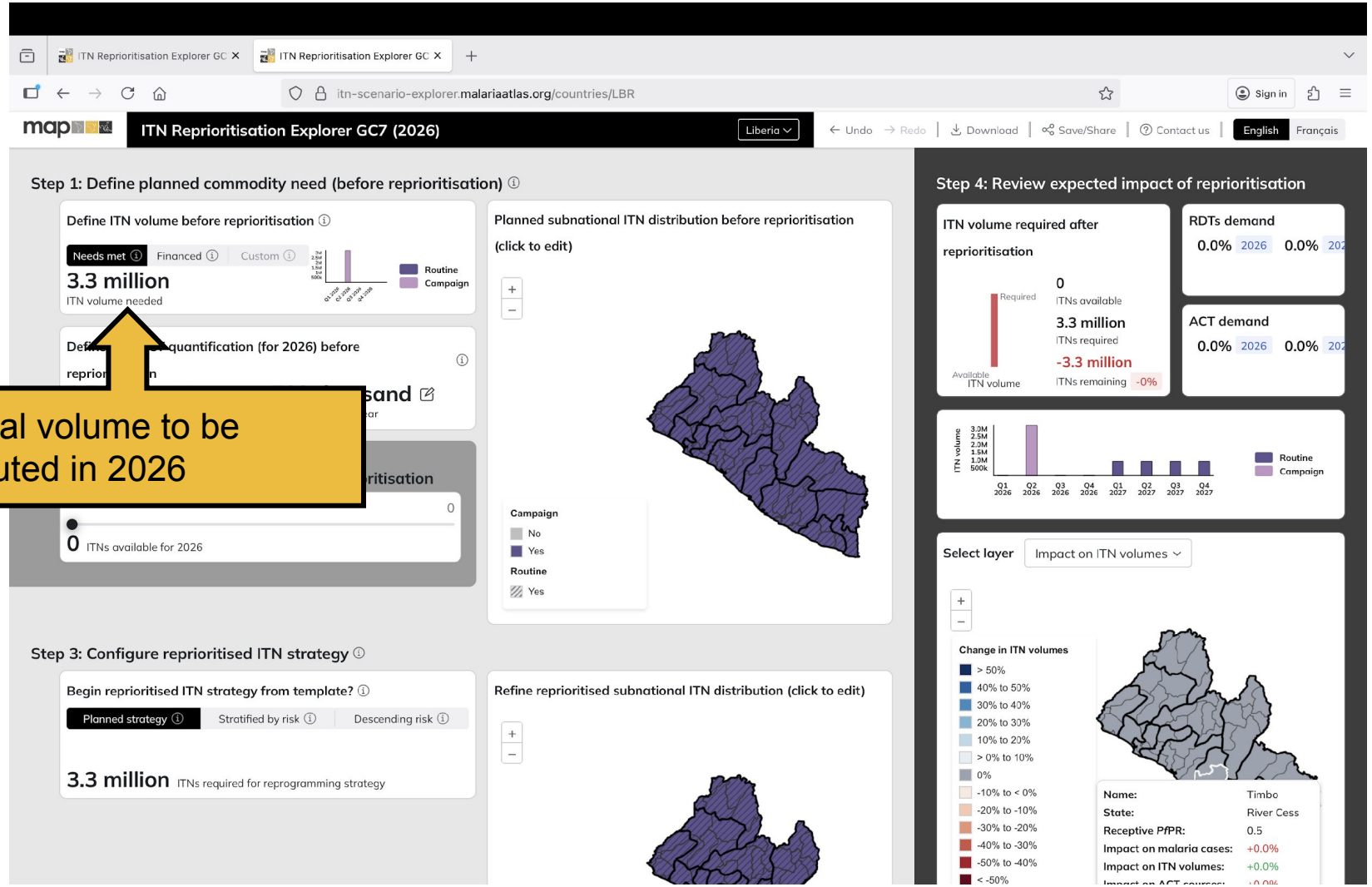
GC7 ITN reprogramming tool



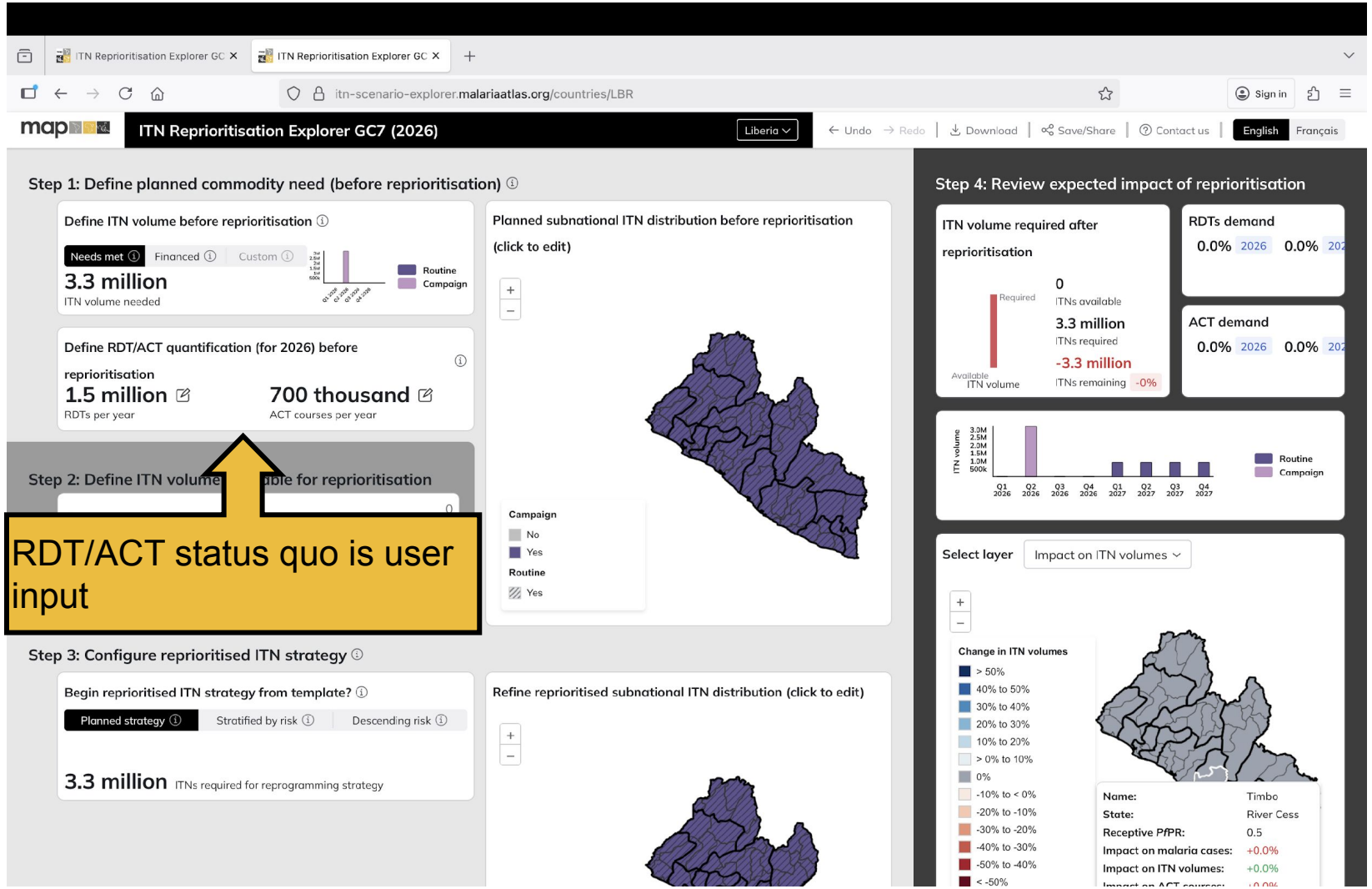
First, configure ‘status quo’ scenario for 2026:

- Planned ITN volume to distribute
- Planned subnational ITN distribution strategy
- Planned ACT/RDT quantification

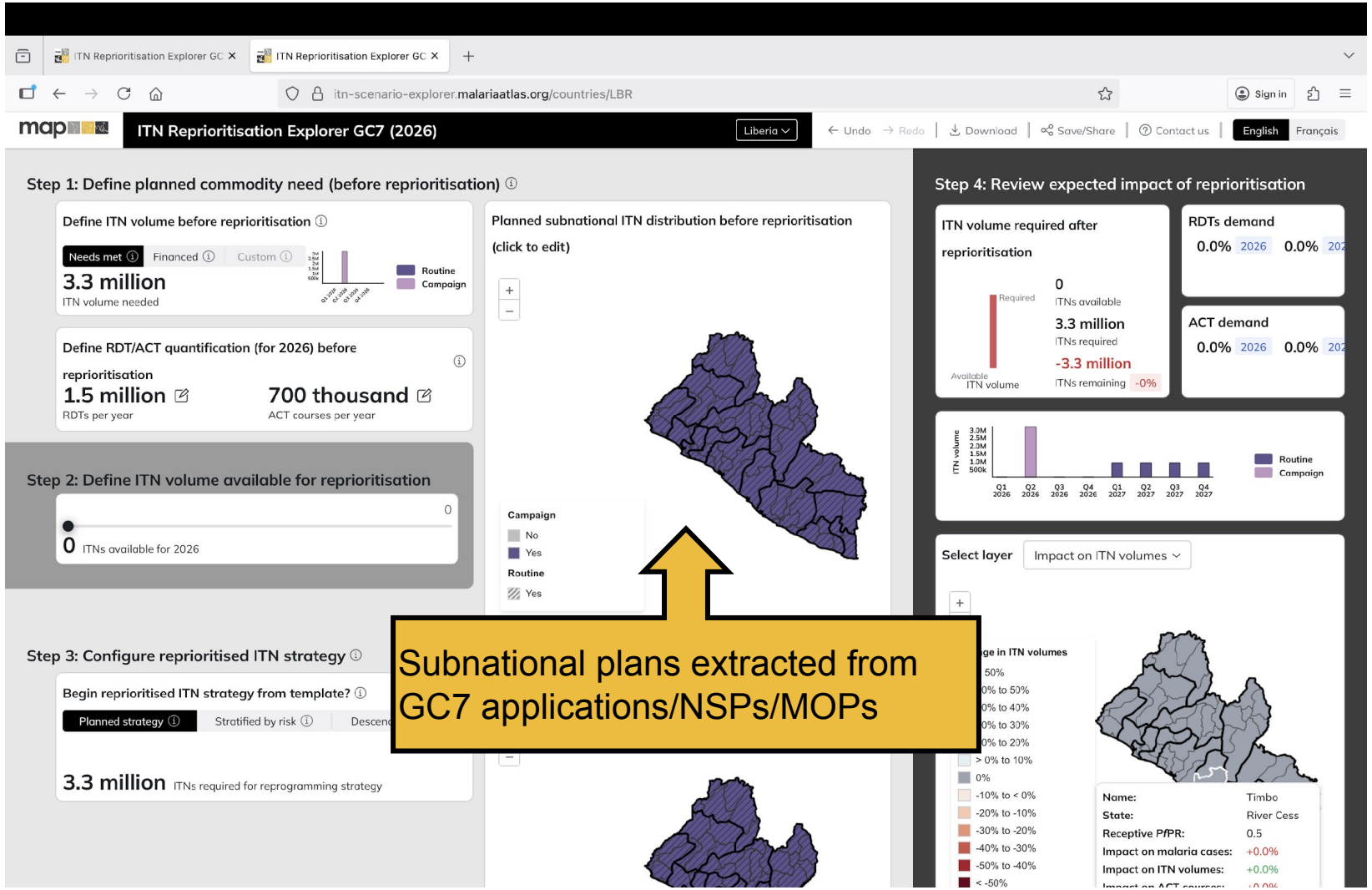
GC7 ITN reprogramming tool



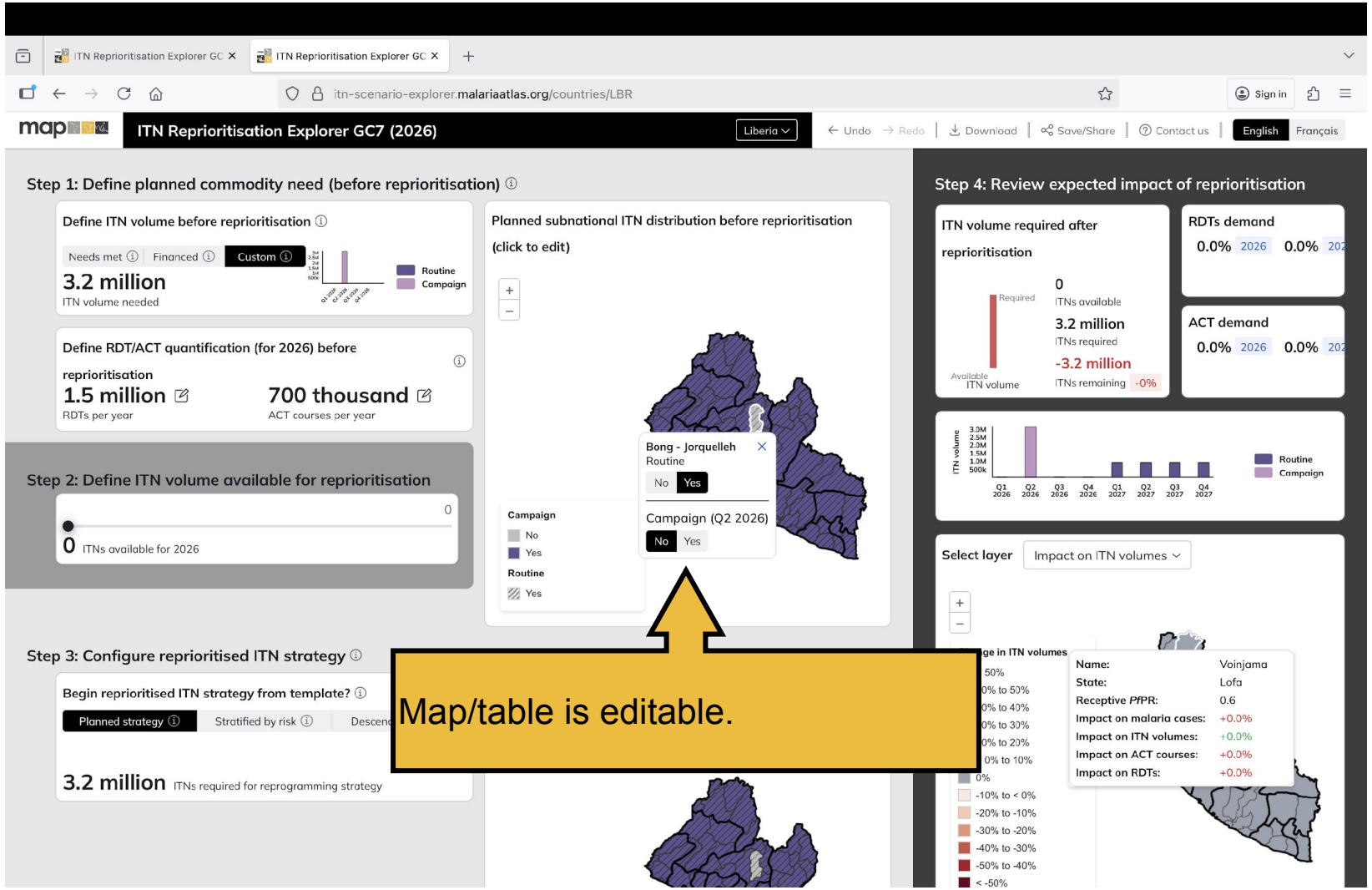
GC7 ITN reprogramming tool



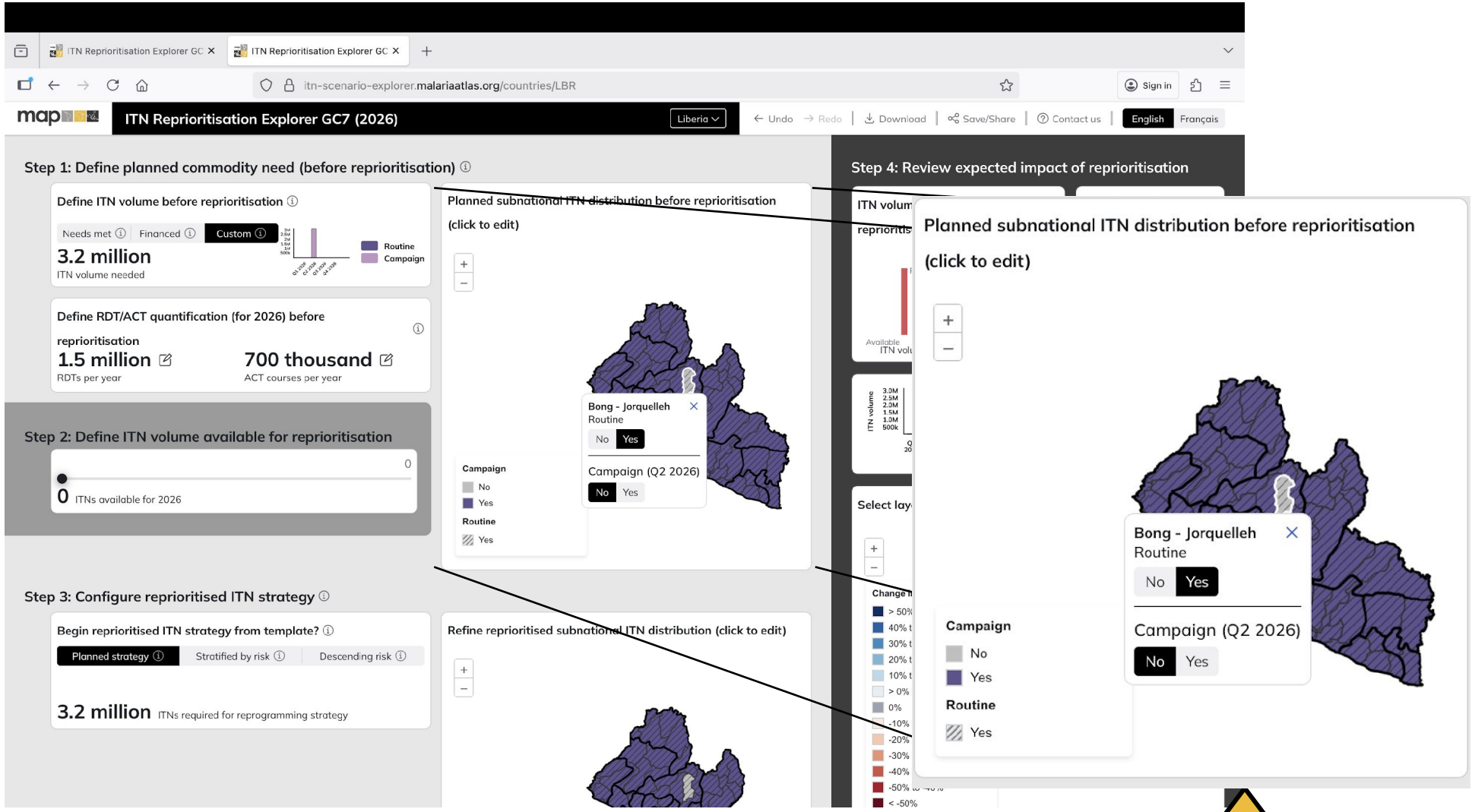
GC7 ITN reprogramming tool



GC7 ITN reprogramming tool

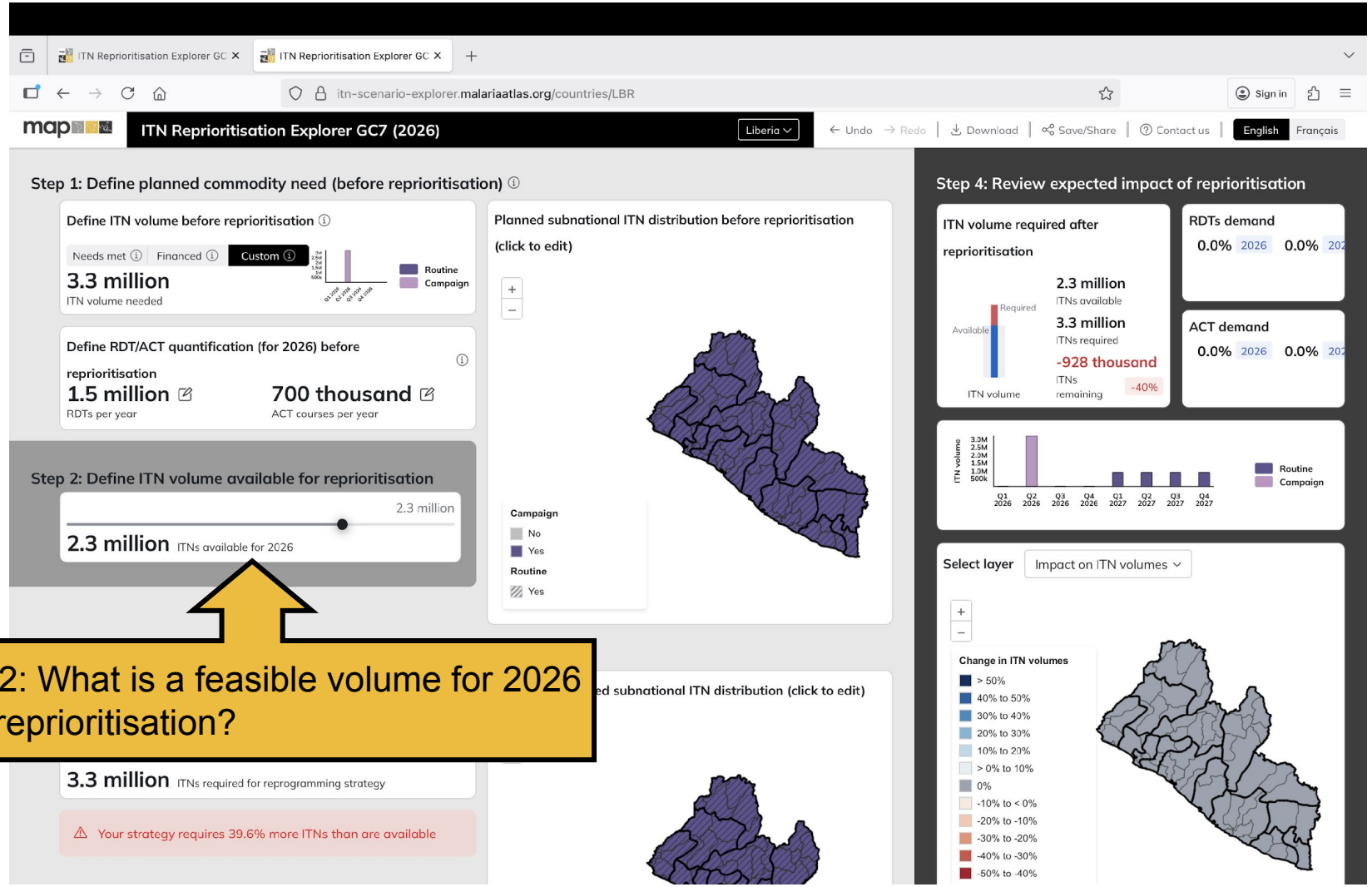


GC7 ITN reprogramming tool



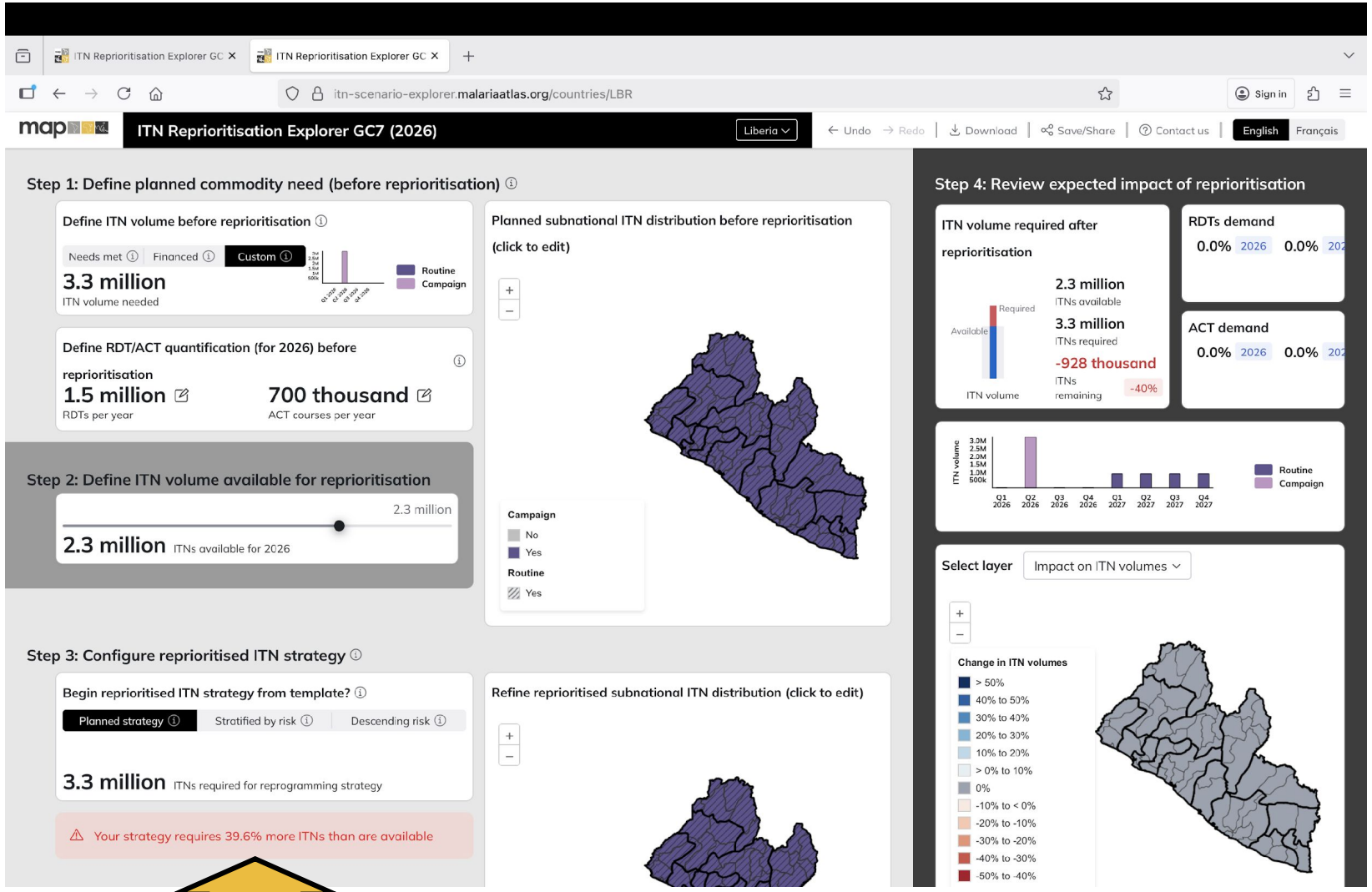
with details on campaign timing

GC7 ITN reprogramming tool



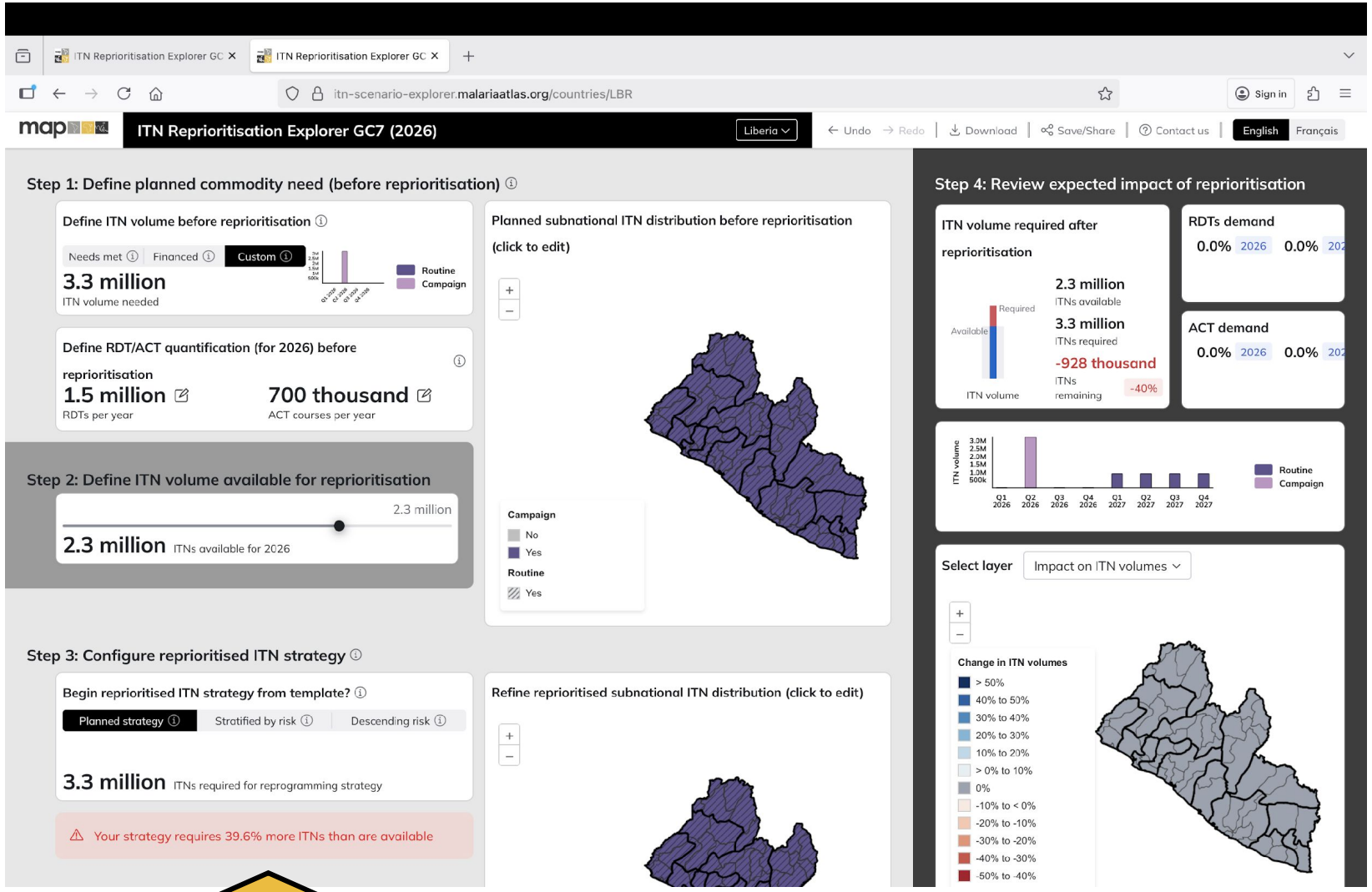
Step 2: What is a feasible volume for 2026 post-reprioritisation?

GC7 ITN reprogramming tool



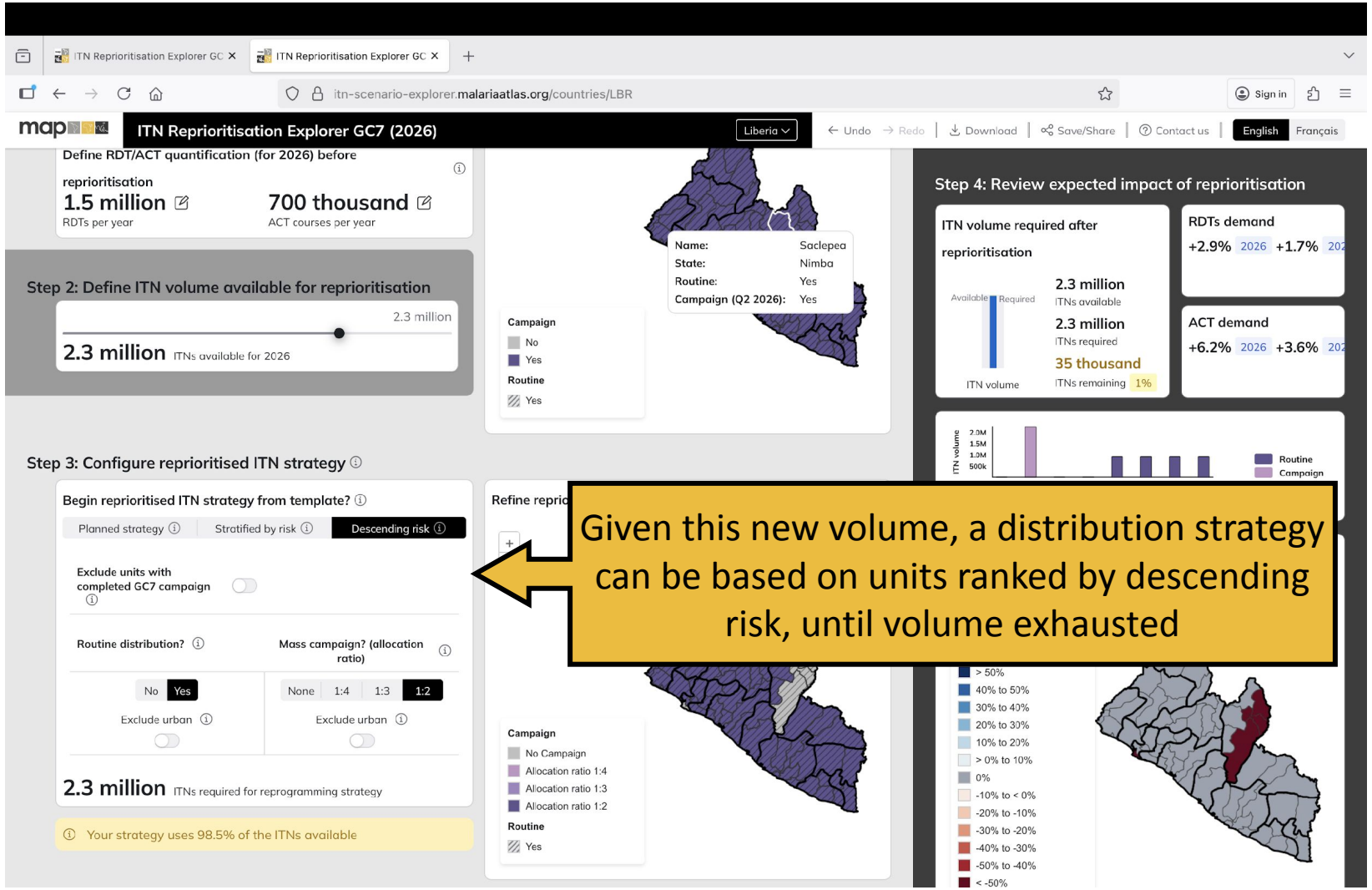
And what implications does this have?

GC7 ITN reprogramming tool



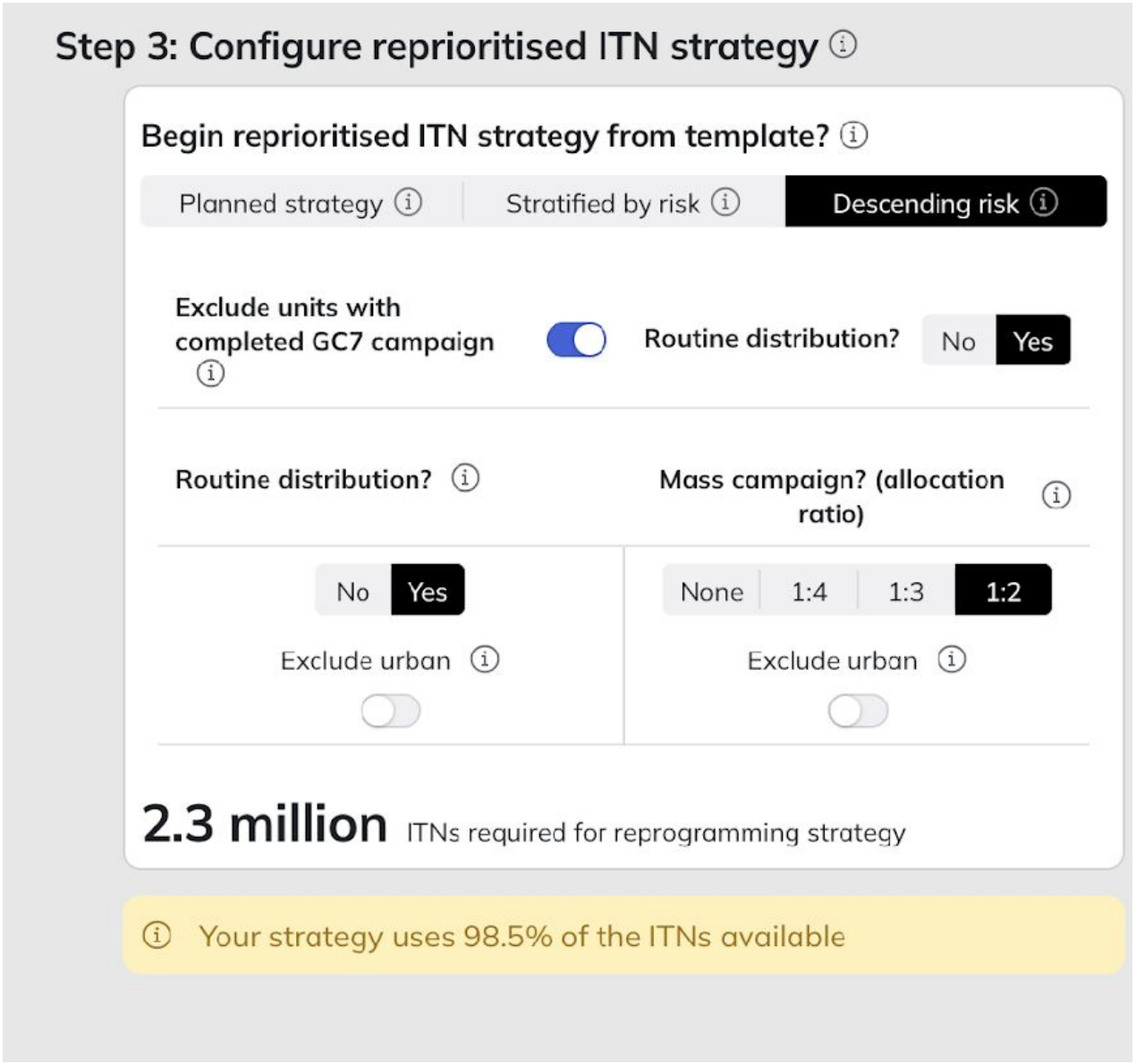
Tool responds in real time to user input

GC7 ITN reprogramming tool

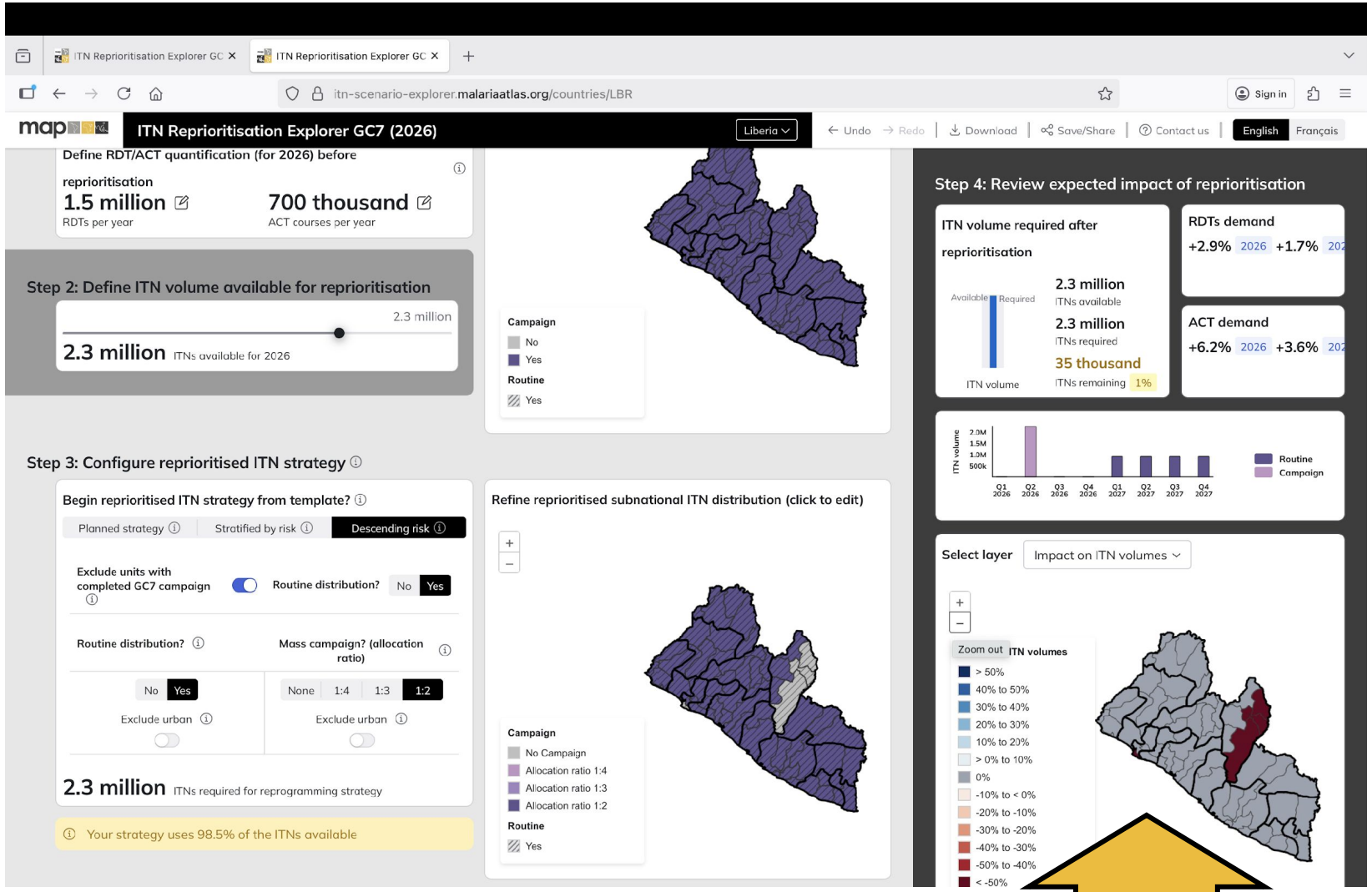


Given this new volume, a distribution strategy can be based on units ranked by descending risk, until volume exhausted

GC7 ITN reprogramming tool

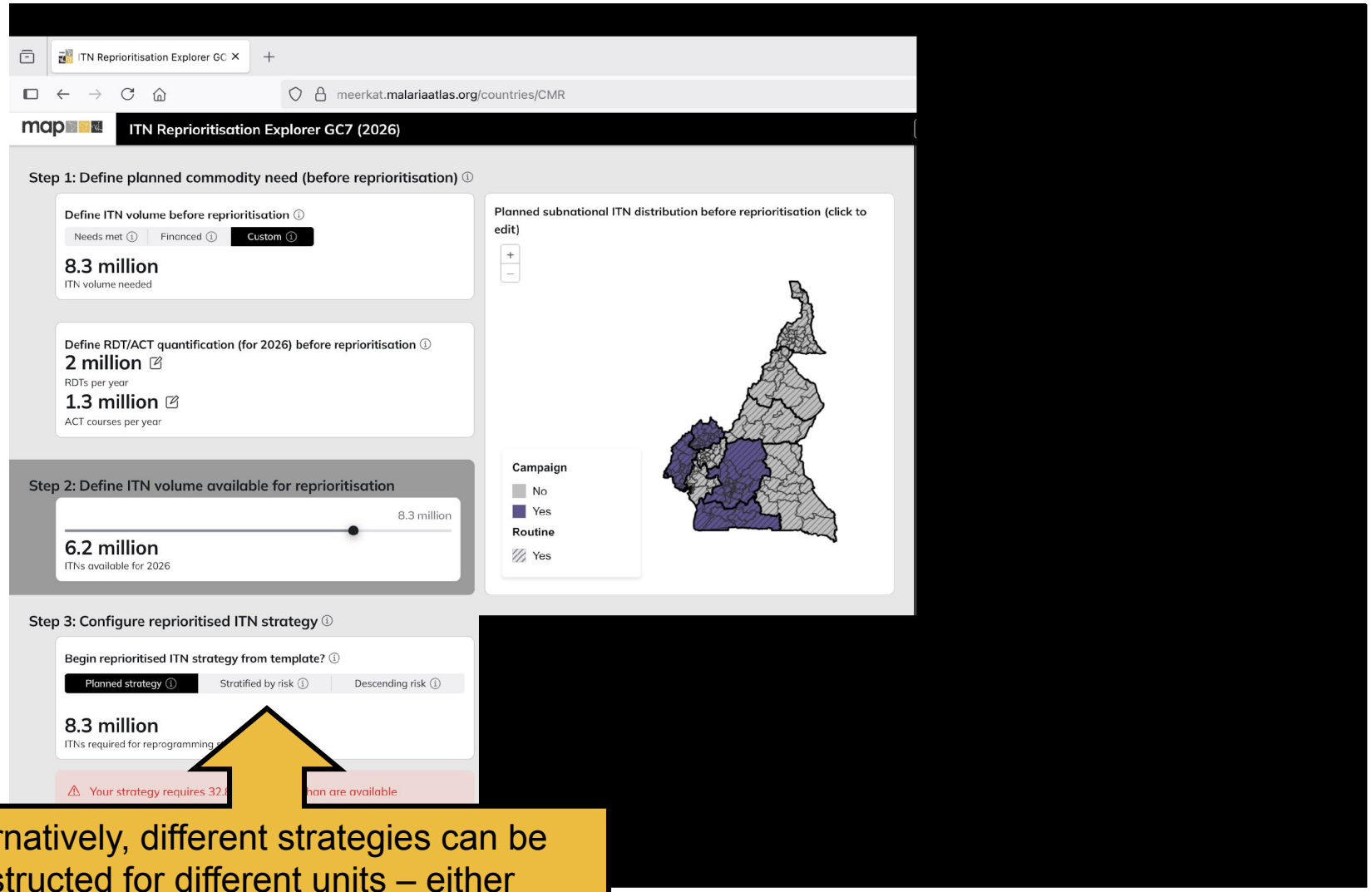


GC7 ITN reprogramming tool



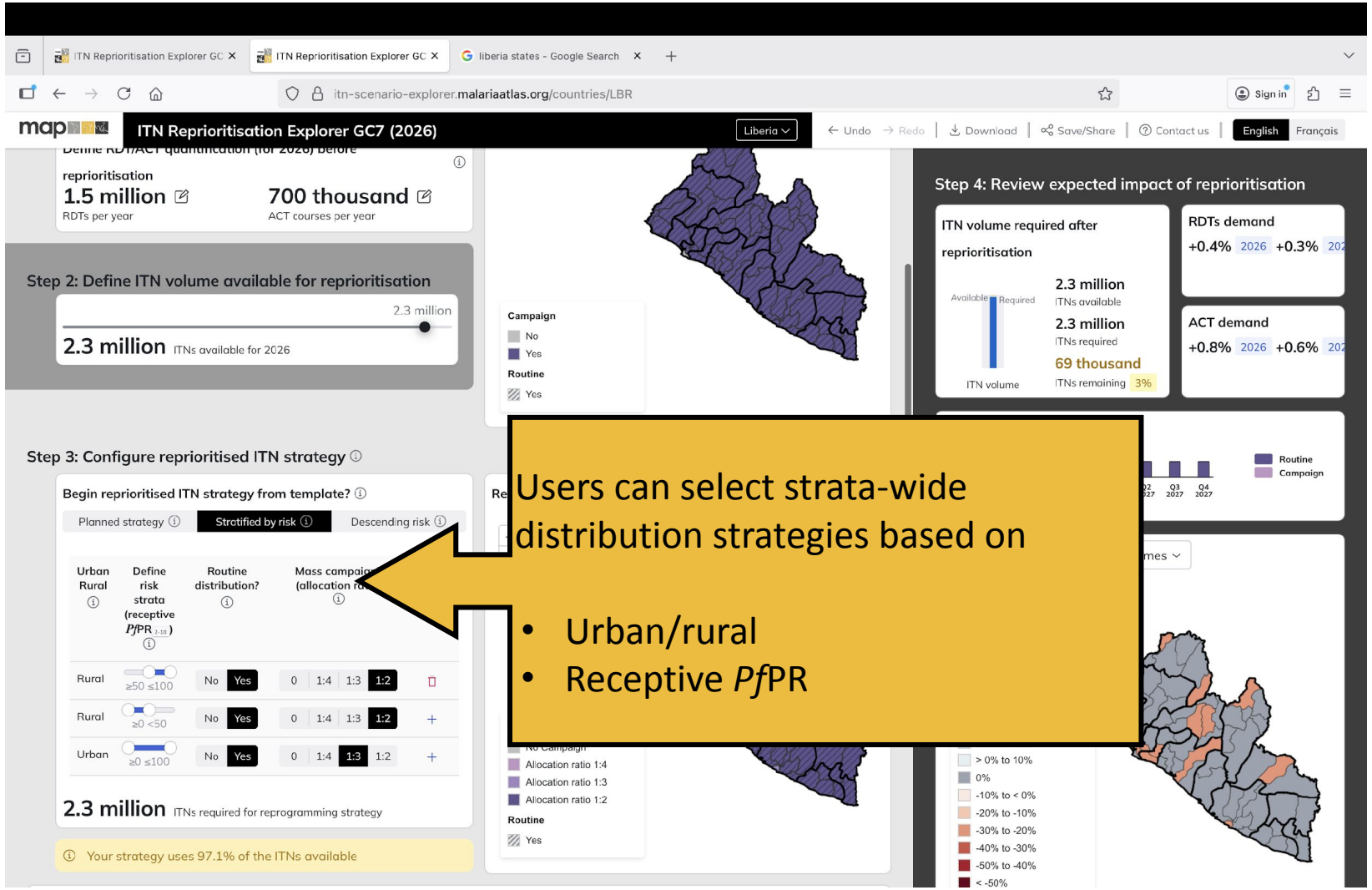
Changing ITN volumes distributed, sub-nationally

GC7 ITN reprogramming tool



Alternatively, different strategies can be constructed for different units – either manually or by risk strata

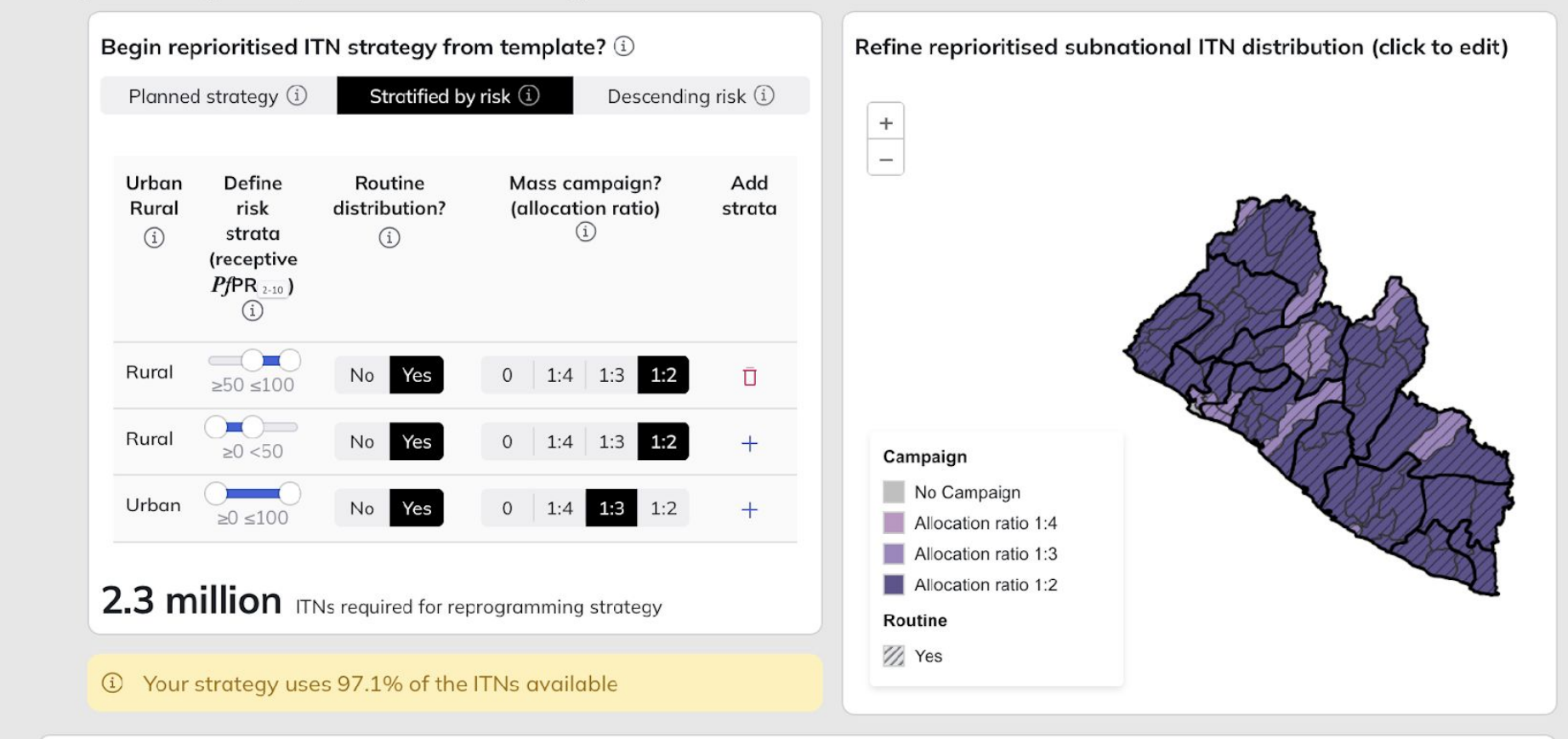
GC7 ITN reprogramming tool



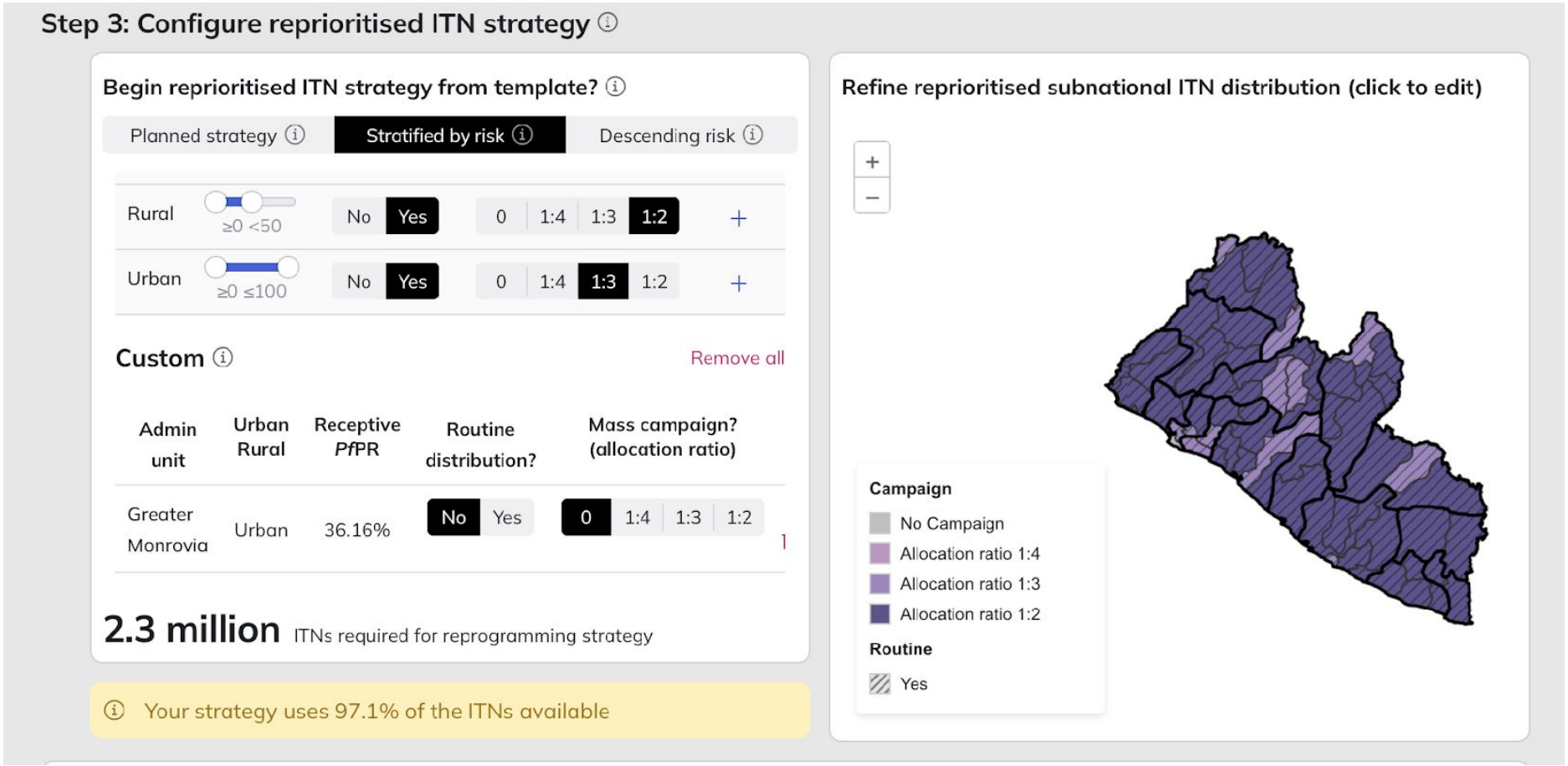
Users can select strata-wide distribution strategies based on

- Urban/rural
- Receptive *Pf*PR

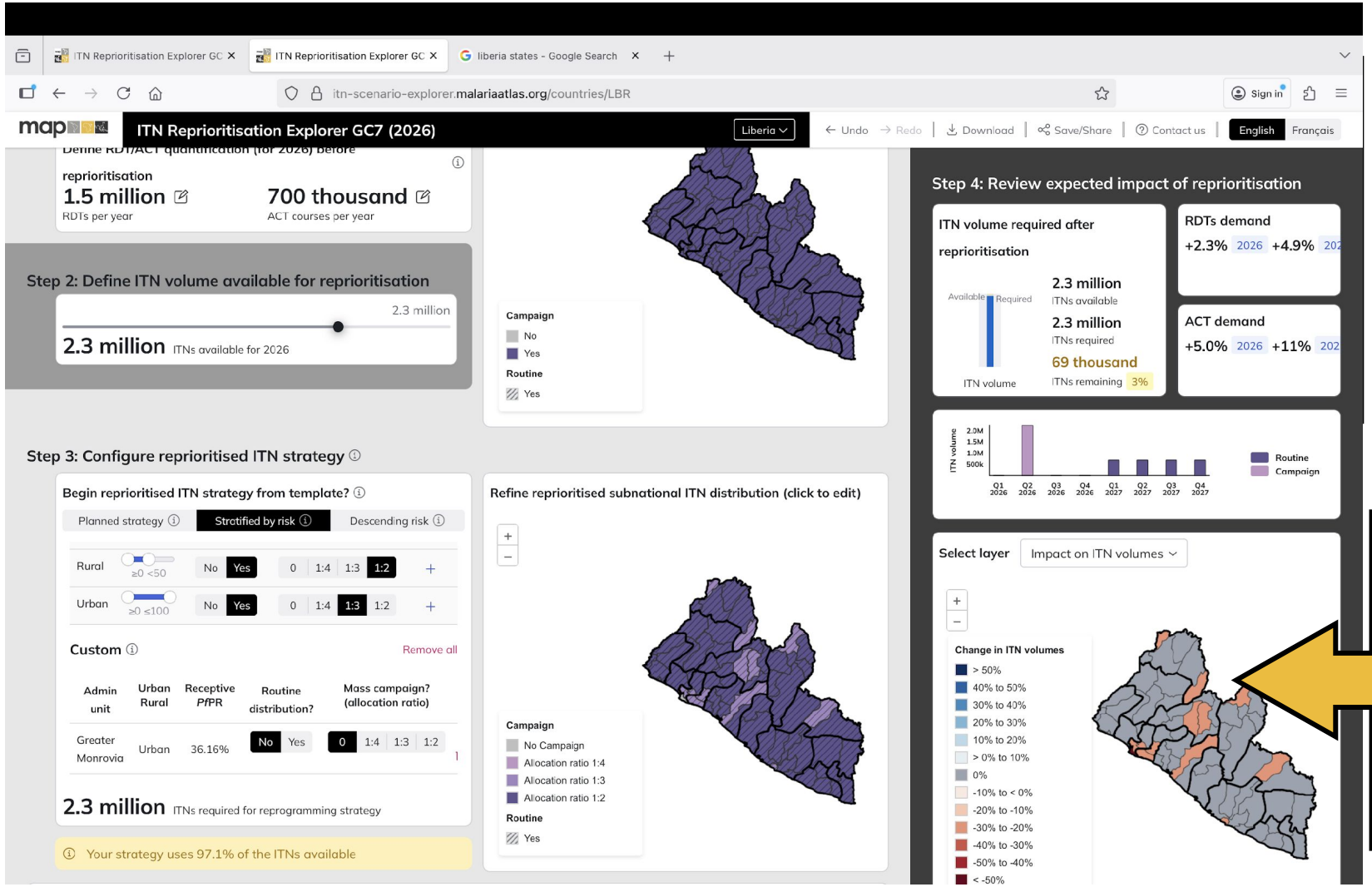
GC7 ITN reprogramming tool



GC7 ITN reprogramming tool

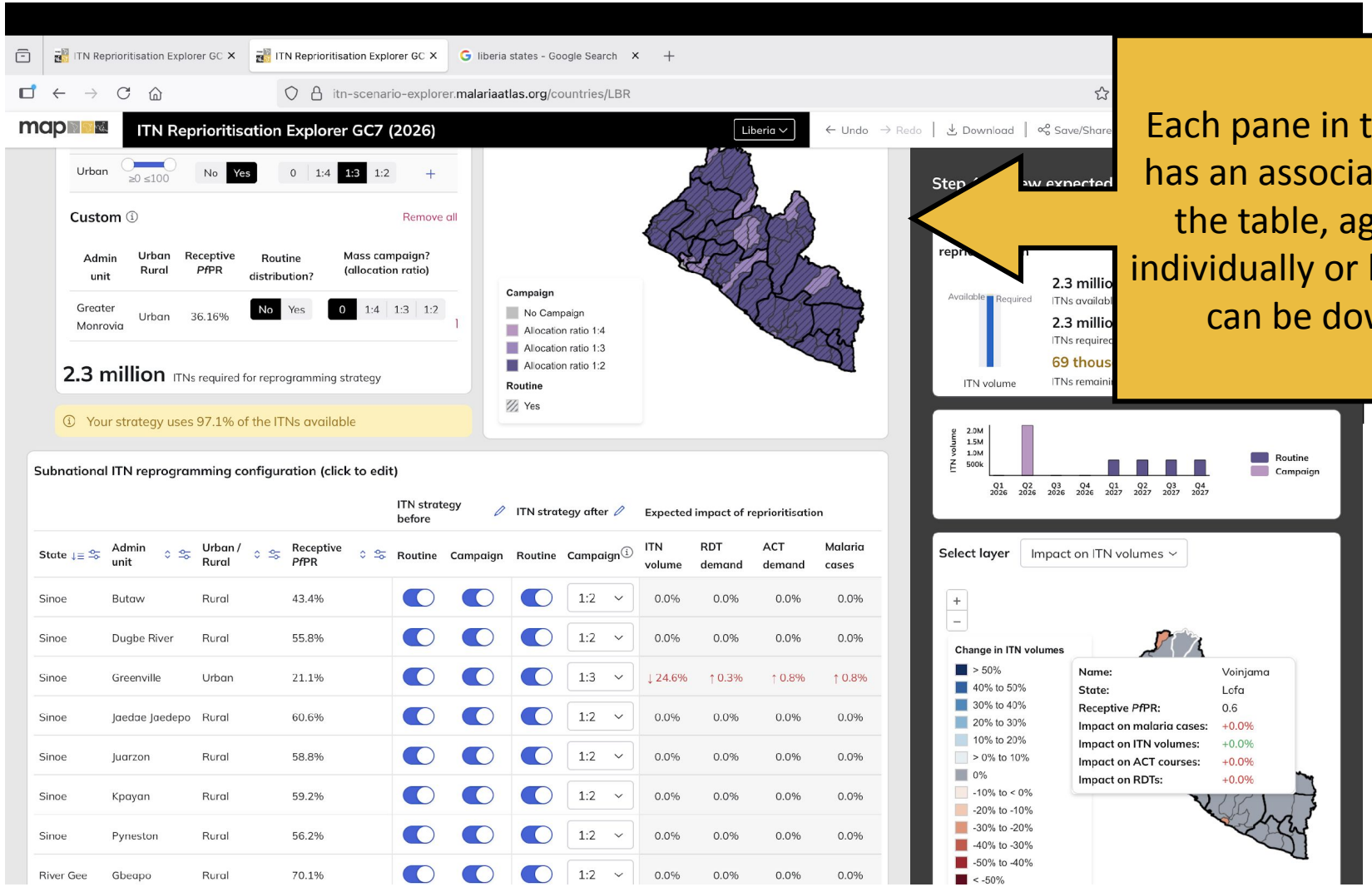


GC7 ITN reprogramming tool



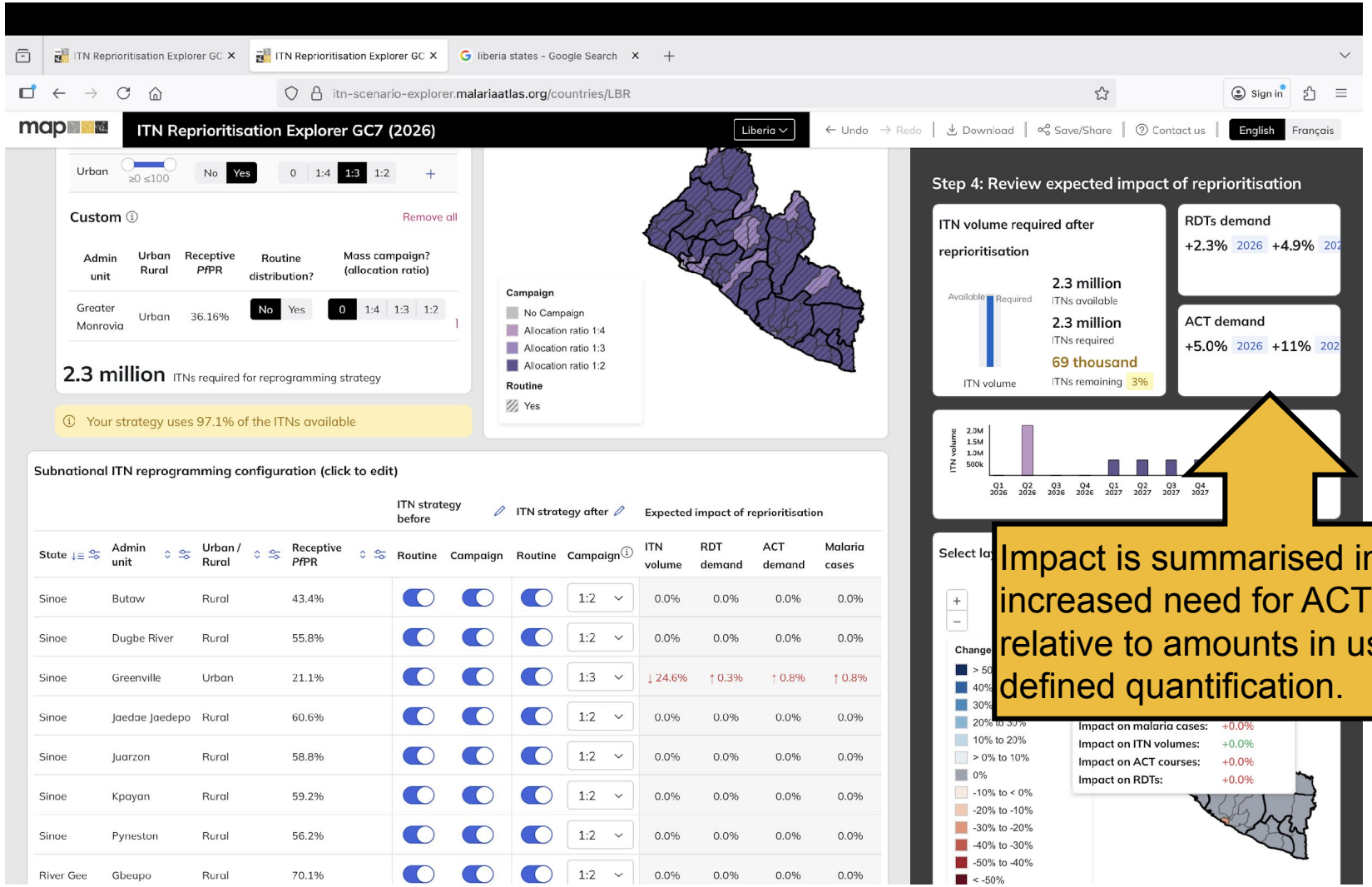
Summarised change in distributed volumes, subnationally

GC7 ITN reprogramming tool



Each pane in the dashboard has an associated column in the table, again editable individually or by groups. This can be downloaded.

GC7 ITN reprogramming tool



Talk outline

History of tool

Current functionality
(GC7 reprioritisation use case)

Potential future functionality and use cases

Limitations and future utility

This tool was developed for specific use case, but overall user interface and functionality is generic. It combines two core functionalities:

Coverage modelling:

- Scenarios of ITN distribution volumes translated to population coverage scenarios, accounting for:
  - Pre-existing nets in households
  - Effects of household size on net ownership and use
  - Local ITN attrition rates and use given access
- Currently, we do not account for:
  - Costings and distribution channels:
    - Scenarios configured by overall input volumes, not budget envelope
    - But there are distribution budget implications for e.g. routine vs mass campaign channels
  - Age-structured coverage
    - Targeting achieved by routine channels (i.e. we assume routine nets distributed across whole population)

Clear pathway to extension in collaboration with partners

Impact modelling:

- Epidemiological model converts ITN coverage scenarios into disease burden, accounting for variation in:
  - Efficacy of ITNs, including impact of insecticide resistance and next-generation nets
  - Receptive transmission potential in the absence of vector control
  - Context of other intervention coverages
- Currently, we do not account for:
  - Age-structured impact, including differential impact of age-targeted distributions
  - Changing coverage of other vertical interventions, e.g. SMC

Longer-term R&D required in collaboration with partners

Conclusion

The current version tool can be accessed on the MAP website:

https://itn-scenario-explorer.malariaatlas.org