SP2LNOB

SOCIAL PROTECTION TO LEAVE NO ONE BEHIND

Strengthening Capacity for Evidence-based Social Protection Policies

Inter-regional Training Workshop

8-10 July 2025 | Livingstone, Zambia

ESCAP Economic and Social Commission for Asia and the Pacific

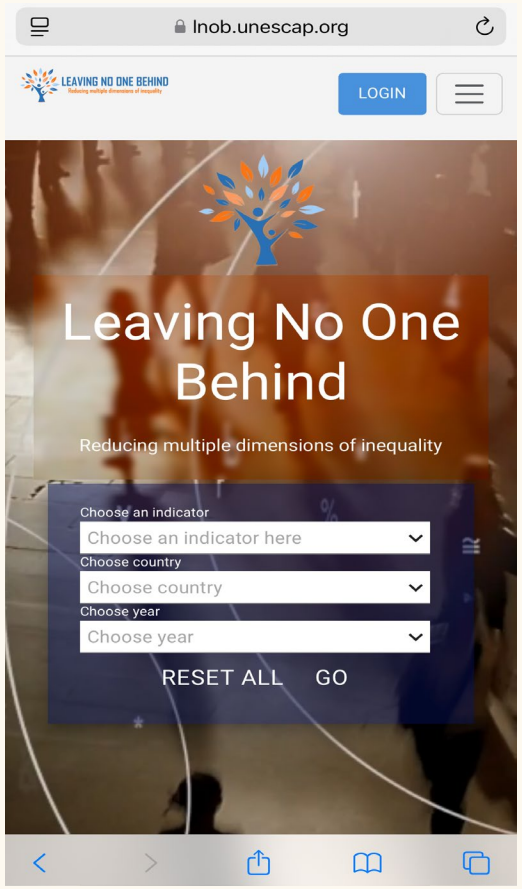
SUSTAINABLE DEVELOPMENT GOALS

https://spot.unescap.org/sp2lnob

Policy questions that need answers…

- Who are left furthest behind in sustainable development?
- Are they small marginal groups in a remote areas? Or are they large groups spread across countries?
- Among social protection schemes, are there some that have larger poverty reduction impact?
- Which scheme parameters matter in enhancing the impact of social protection?
- What happens to furthest behind groups if they are covered by social protection?

The Story of SP2LNOB



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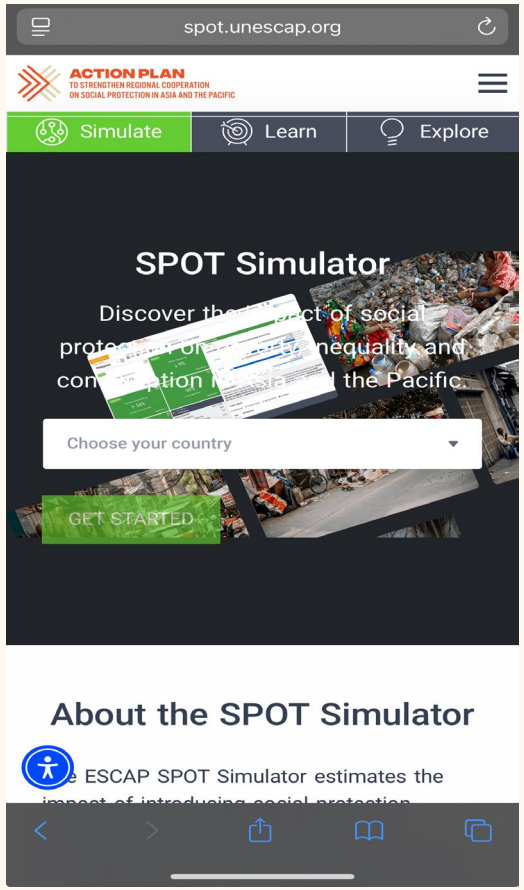

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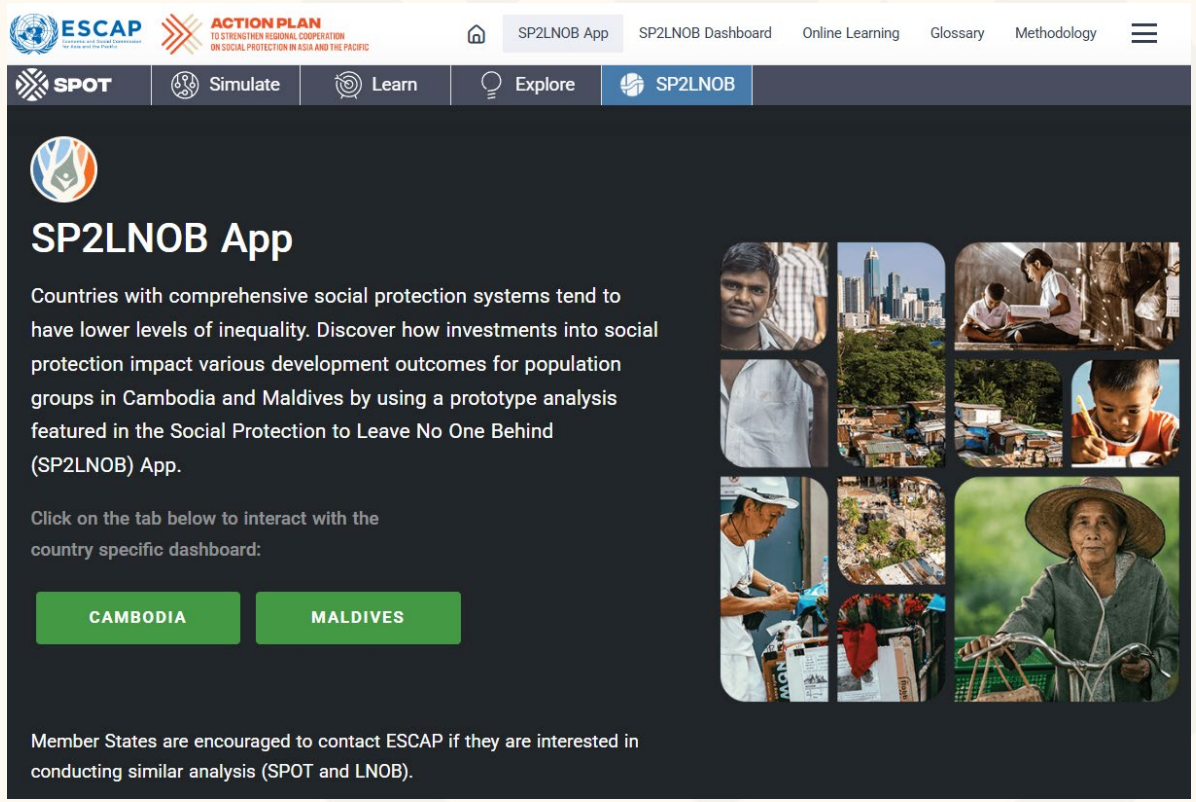

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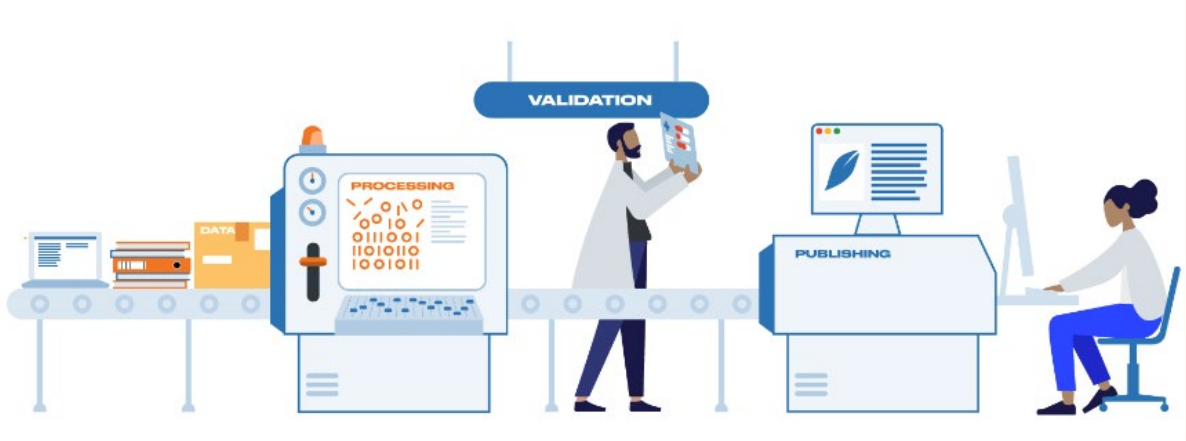
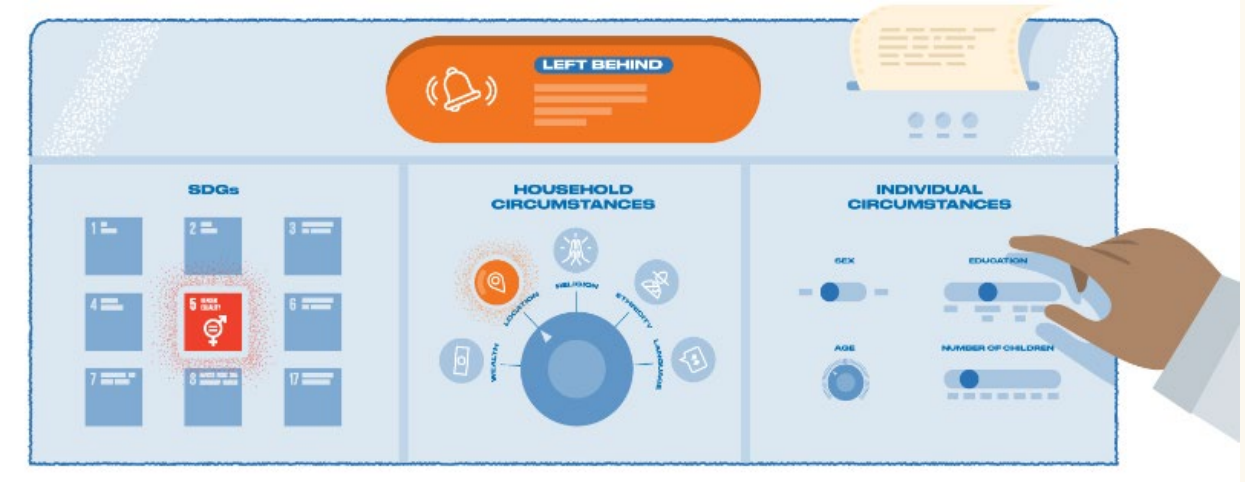
ESCAP Approach to LNOB





A quantitative analysis of **inequality** in SDG indicators that can capture **intersectionalities** among **circumstances** that leave people behind.

Based on **nationally representative** micro data and **disaggregating** SDGs at **national and subnational levels.**

Powered by a **machine learning algorithm** within Classification and Regression Tree Analysis (CART).

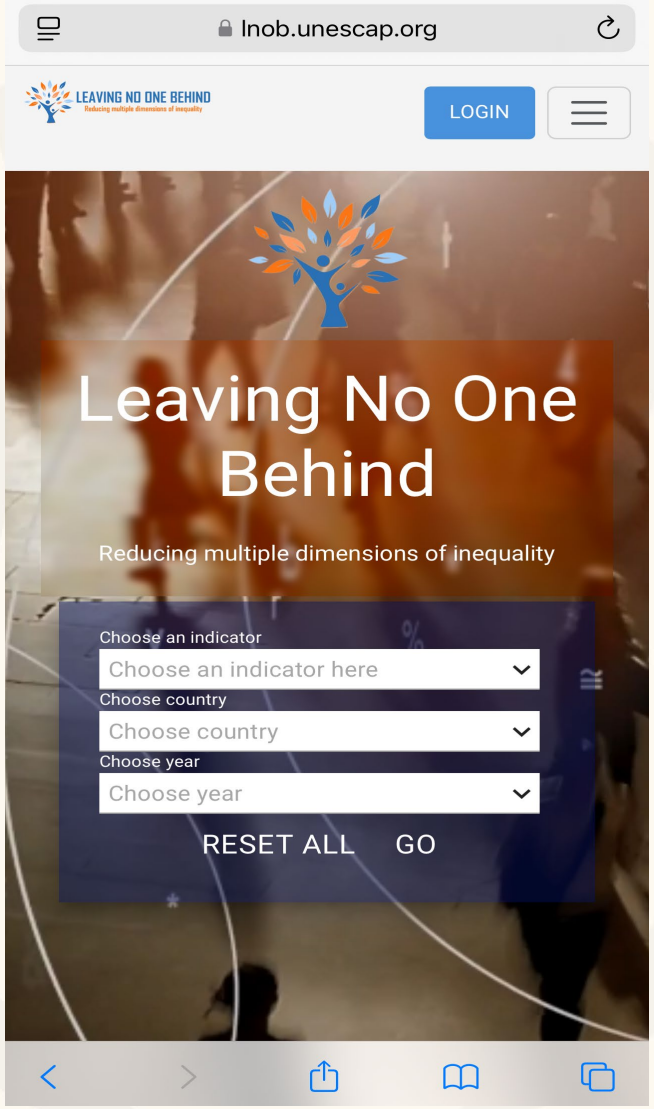
ESCAP LNOB Platform

Results on **inequality of opportunity** are available online at **national and subnational levels** for **33 countries** in Asia and the Pacific in the **2009-2023** period.

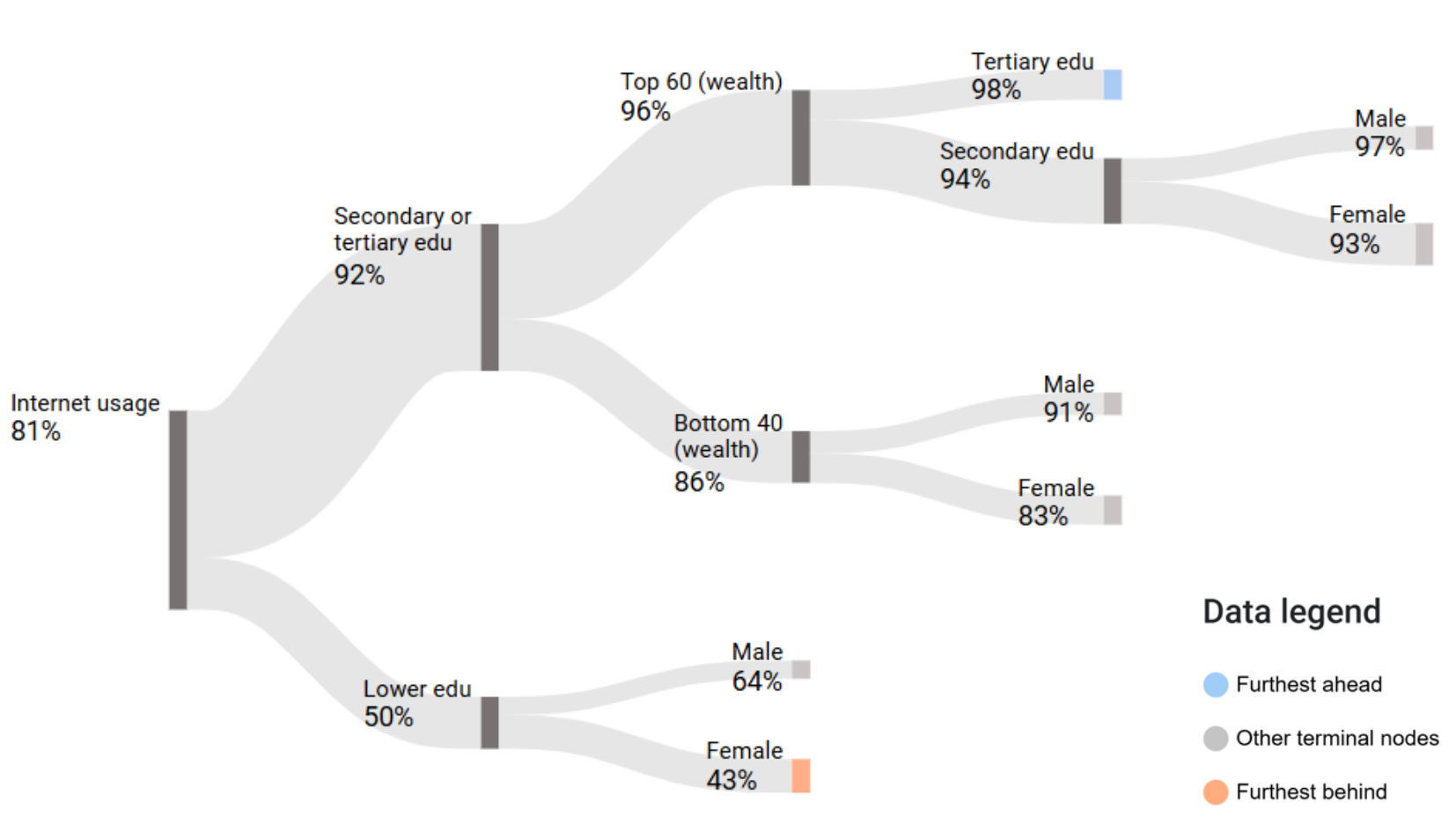
Identifies groups that are **furthest behind** and **furthest ahead** in **19 SDG indicators.**

Captures intersectionality of circumstances like **age, sex, education, wealth, disability**, **minority status,** among others.

Coming soon to Africa…



LNOB Tree Example



Internet usage at 81% across the country.

Education, **wealth** and **sex** intersect in explaining who used the internet and who did not. **Location** and **age** did not show up.

LNOB algorithm identified 7 distinct groups in the reference population.

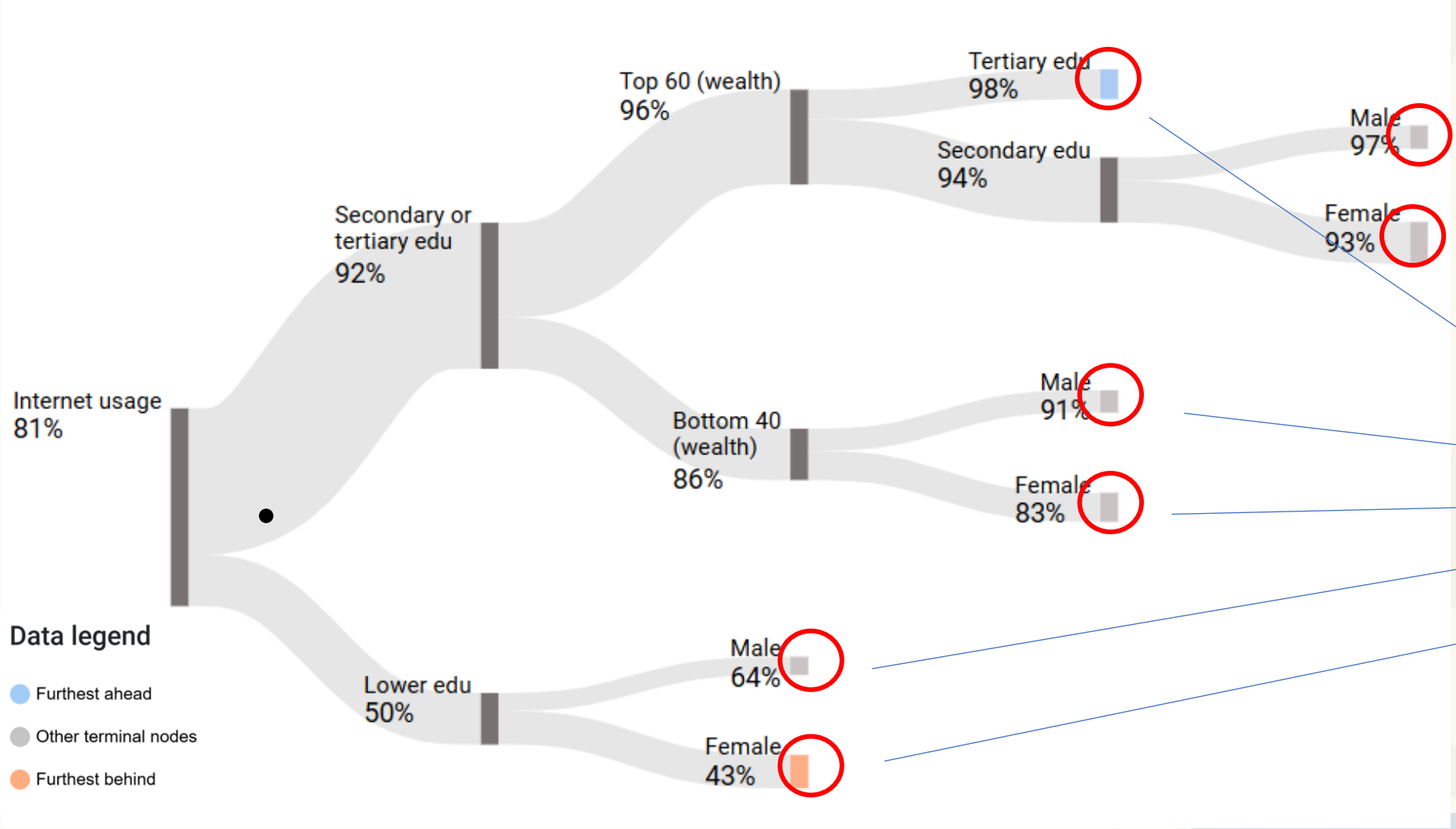
Furthest Behind: 43% internet usage

Furthest Ahead: 98% internet usage

Source: Maldives DHS (2017).
Note: Weighted results are presented based on a sample of 12,041 individuals.

LNOB Tree Example

Source: Maldives DHS (2017).
Note: Weighted results are presented based on a sample of 12,041 individuals.



In total **7 groups** are identified.

Take a weighted average of these 7 and you'll get 81%. Sum them up and you will get to the full sample of 12,041 individuals.

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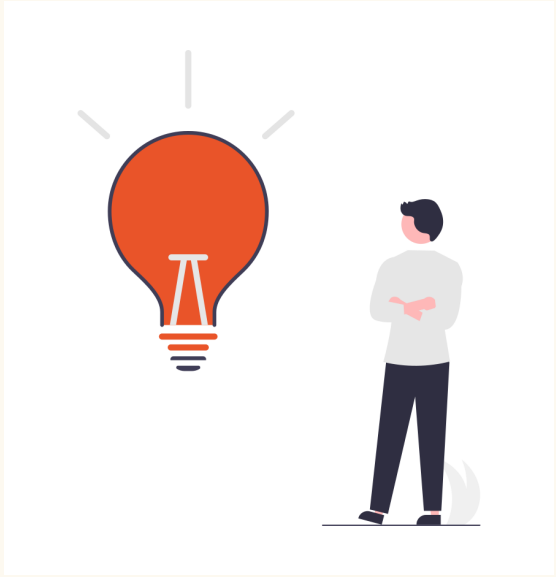
ESCAP Approach to Social Protection

Simulator model: Key Ideas

”what if” questions in a static and backward-looking manner

the simulations construct a hypothetical scenario, using a linear approximation model, and infer the absolute effects of a policy change



01 Identify recipients of simulated schemes

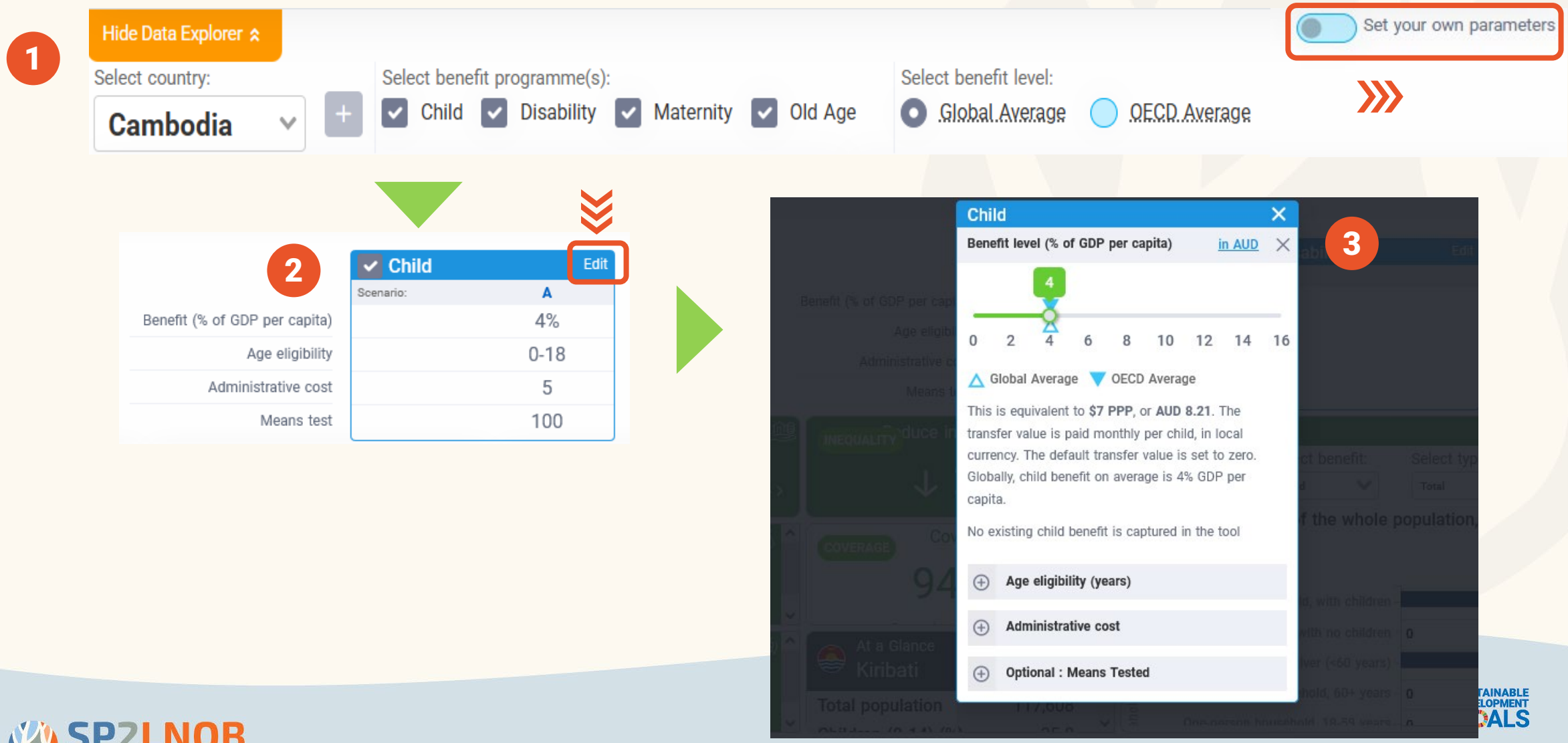
02 Calculate hypothetical household consumption expenditure

03 Simulate changes in welfare-based outcomes

04 Project annual cost of the simulated schemes

An overview of simulated outcomes

Design you own schemes with advanced settings



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Connecting

LNOB Platform

with

SPOT Simulator

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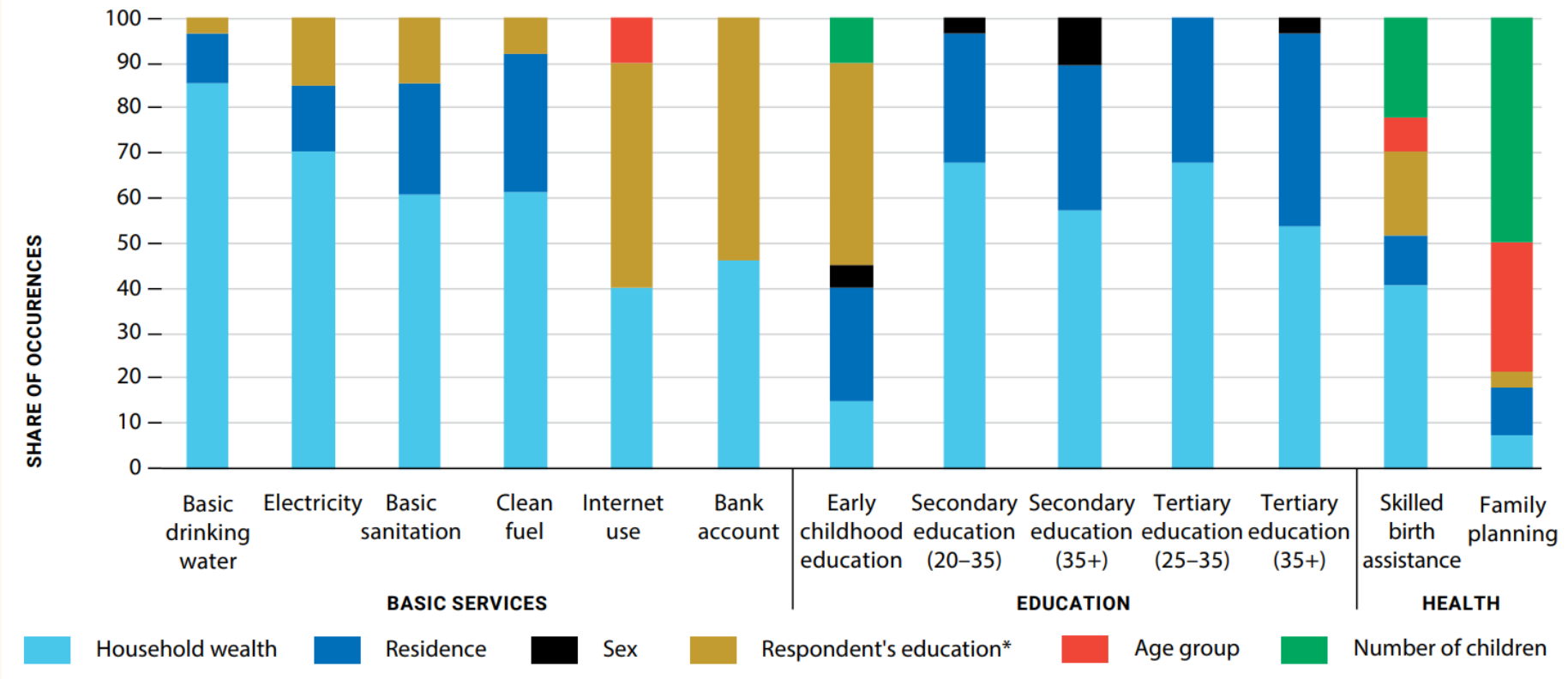
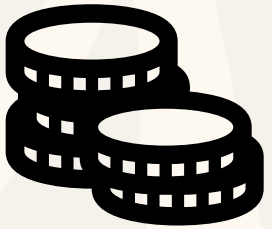
The premise of SP2LNOB

Being poor is one of the key factors associated with inequality of opportunity.



The Premise of SP2LNOB

When **poverty** interacts with **age, sex and disability** in leaving people behind …



… there is room for **Social Protection** to improve access by increasing household's economic resources.

Being monetarily poor is not always the culprit.

What does SP2LNOB App do?

SP2LNOB builds on SPOT and captures the nexus between **social protection** and **multiple dimensions of poverty**.

- Nutrition & Health
- Education
- Health
- Standards of living
- Decent employment

SP2LNOB links **non-contributory social protection schemes** to leaving no one behind agenda in SDGs and beyond.

Outcomes analyzed in the SP2LNOB App

Standard of living

- Basic Drinking Water
- Basic sanitation
- Electricity
- Clean fuel

- Mobile phone
- Internet access
- Tablet or computer

- Durable Housing
- Overcrowding
- Asset ownership
- Vehicle ownership

Health & Nutrition

- Birth registration
- Chronic disease prevalence
- Food insecurity

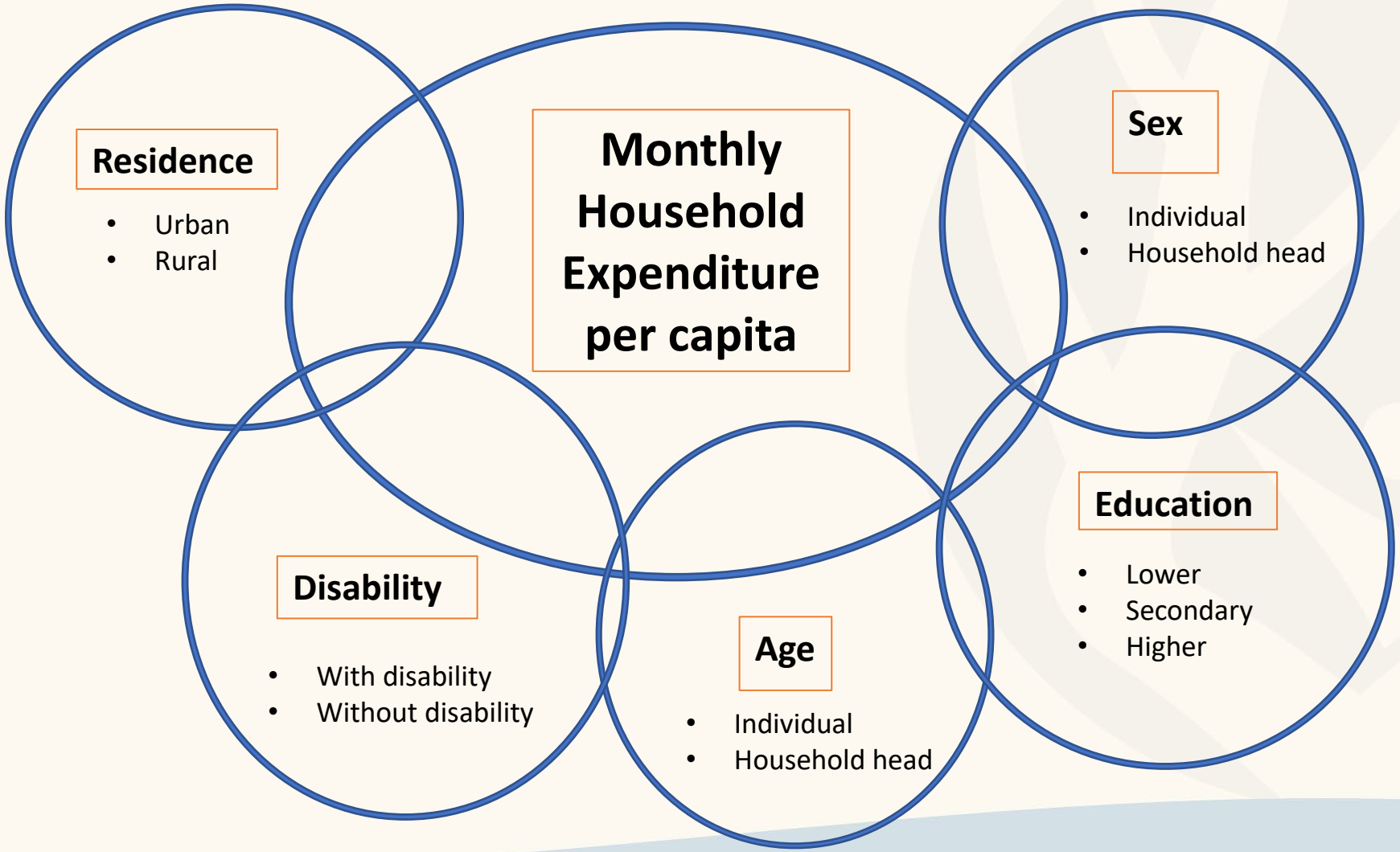
Education

- Literacy (18+)
- Literacy in English (18+)
- Secondary education completion (age 25-35)
- Tertiary education completion or attendance (age 25-35)
- No schooling (12+)

Labour

- Labour force participation rate
- Youth not in employment, education and training (NEET)
- Child labour

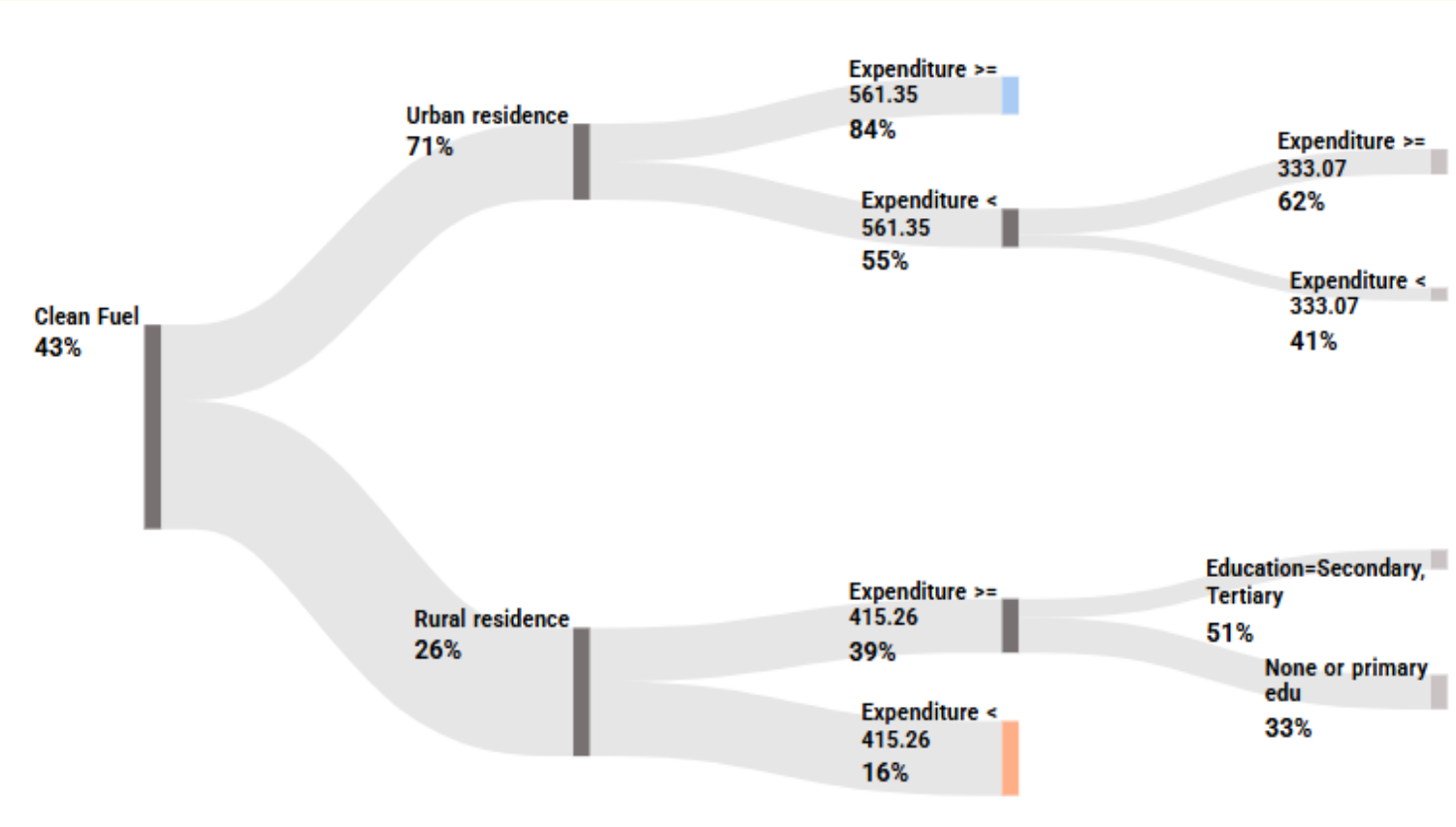
Circumstances included in the SP2LNOB App



Learning by doing...

Let’s take an example.

Indicator: Access to clean fuels for cooking
Level of analysis: Households
Circumstances: Age, sex and education of household head, location, monthly expenditure per capita and any person with disability.



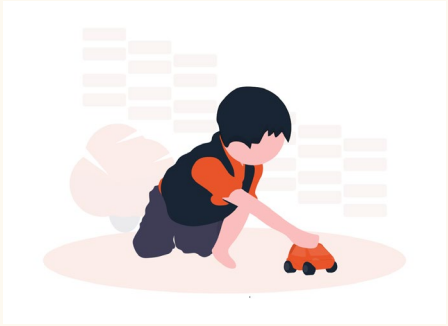
Inequality before Social Protection:

- **43%** households in Cambodia had access to clean fuels for cooking. 57% did not.
- **Location** is the most important circumstance**.**
  - **Rural households:**26%
  - **Urban households:** 71%
- **Monthly expenditure per capita** comes second but at different thresholds in rural vs urban areas.
  - In rural areas: KHR 415,260
  - In urban areas: KHR 333,070
  - In urban areas: KHR 561,350
- **Education** of household head also matters in relatively richer rural households.
- Several circumstances do not show up: **age**, **sex** and **disability status**.

Source: Cambodia Socioeconomic Survey (2019-2020).

LNOB Analysis

SPOT Simulator (Universal)

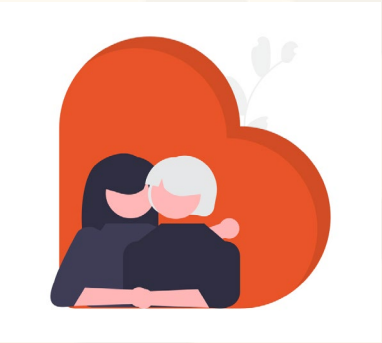


4% GDP per capita to all households with children and per child

Child benefits

14% GDP per capita to all households with a person with severe disability and per PwD

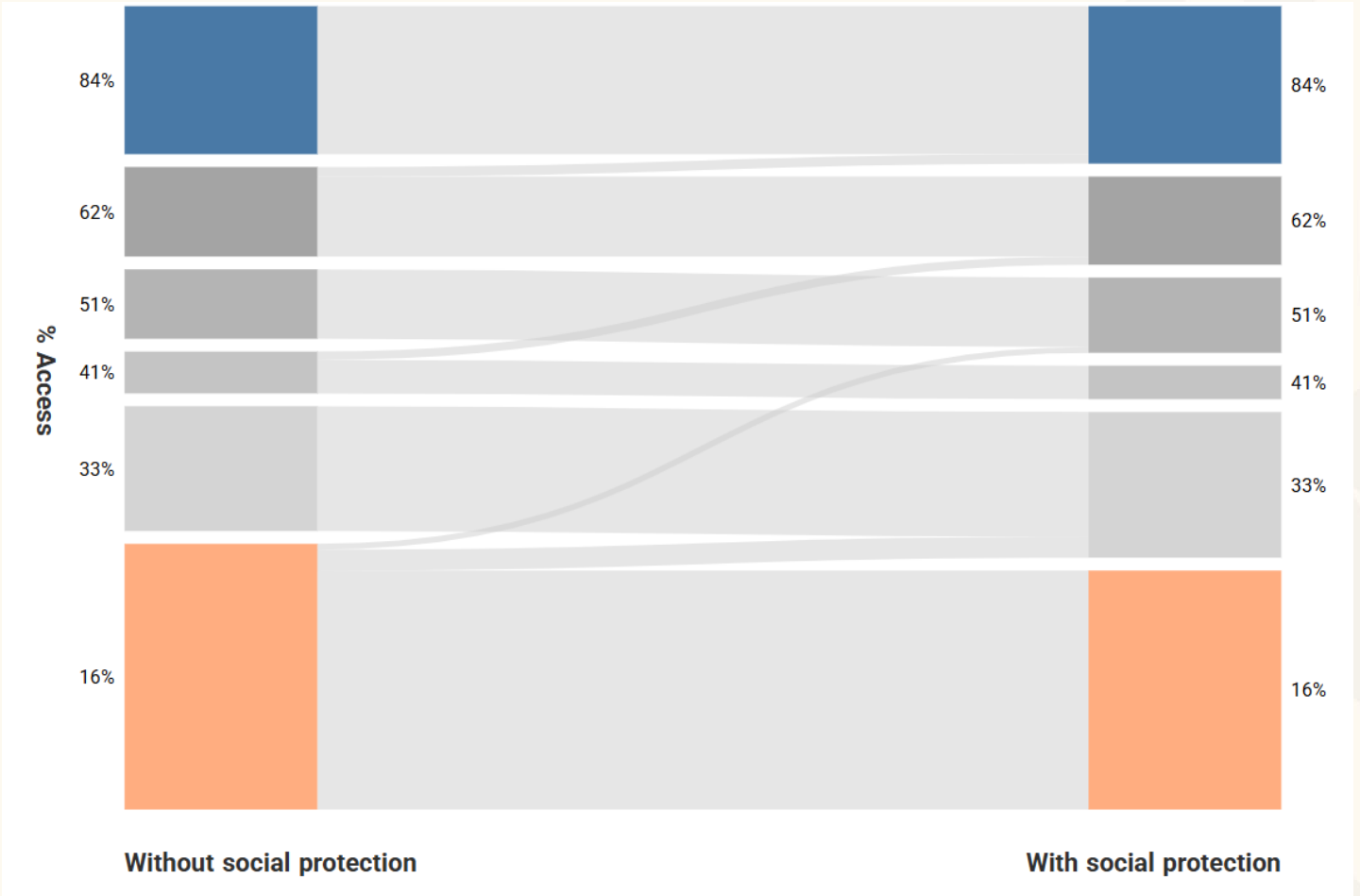
Disability benefits



16% GDP per capita to all households with at least one older person and per older person

Old age pensions

What happens to LNOB after Social Protection?



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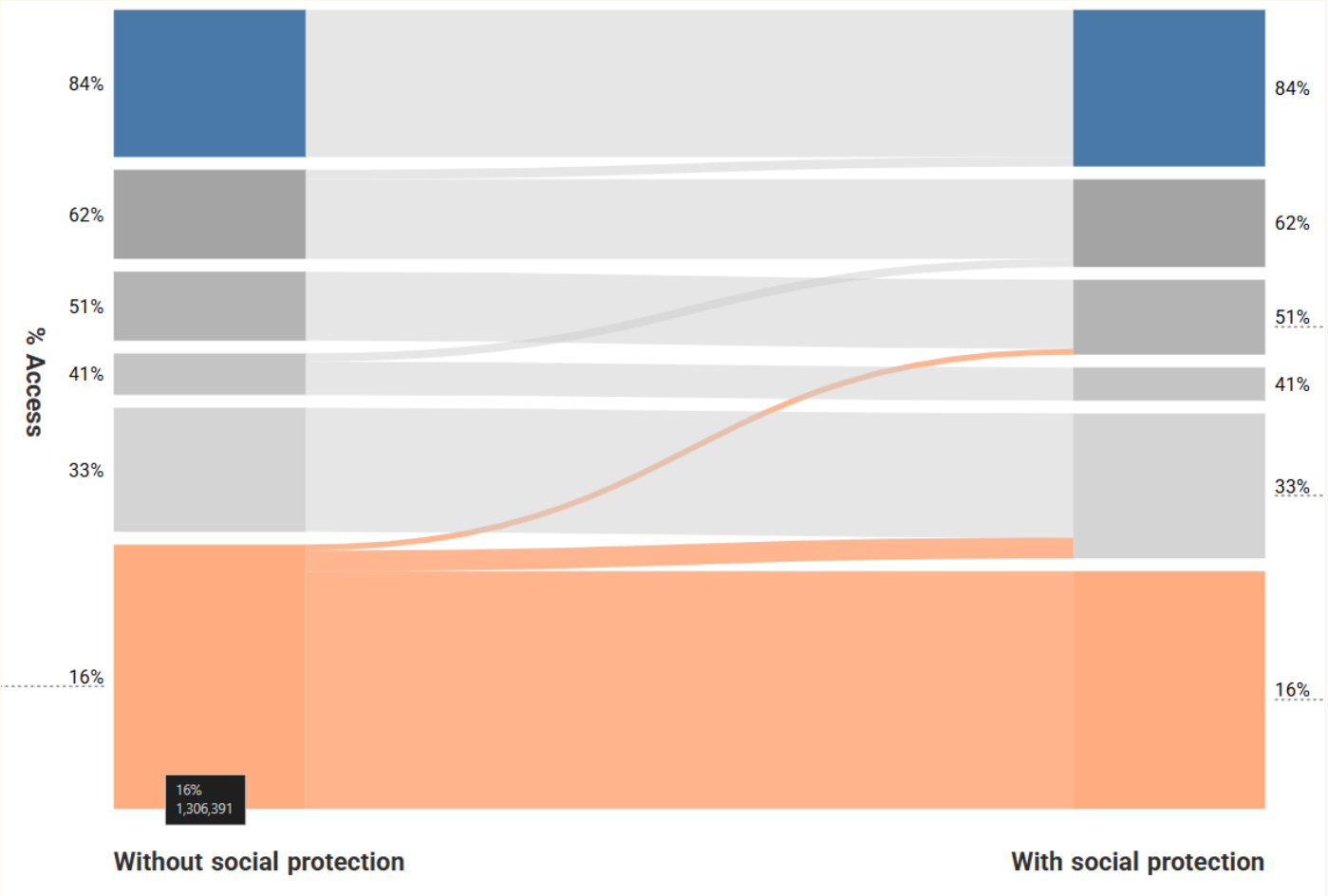
What is happening to the furthest behind?

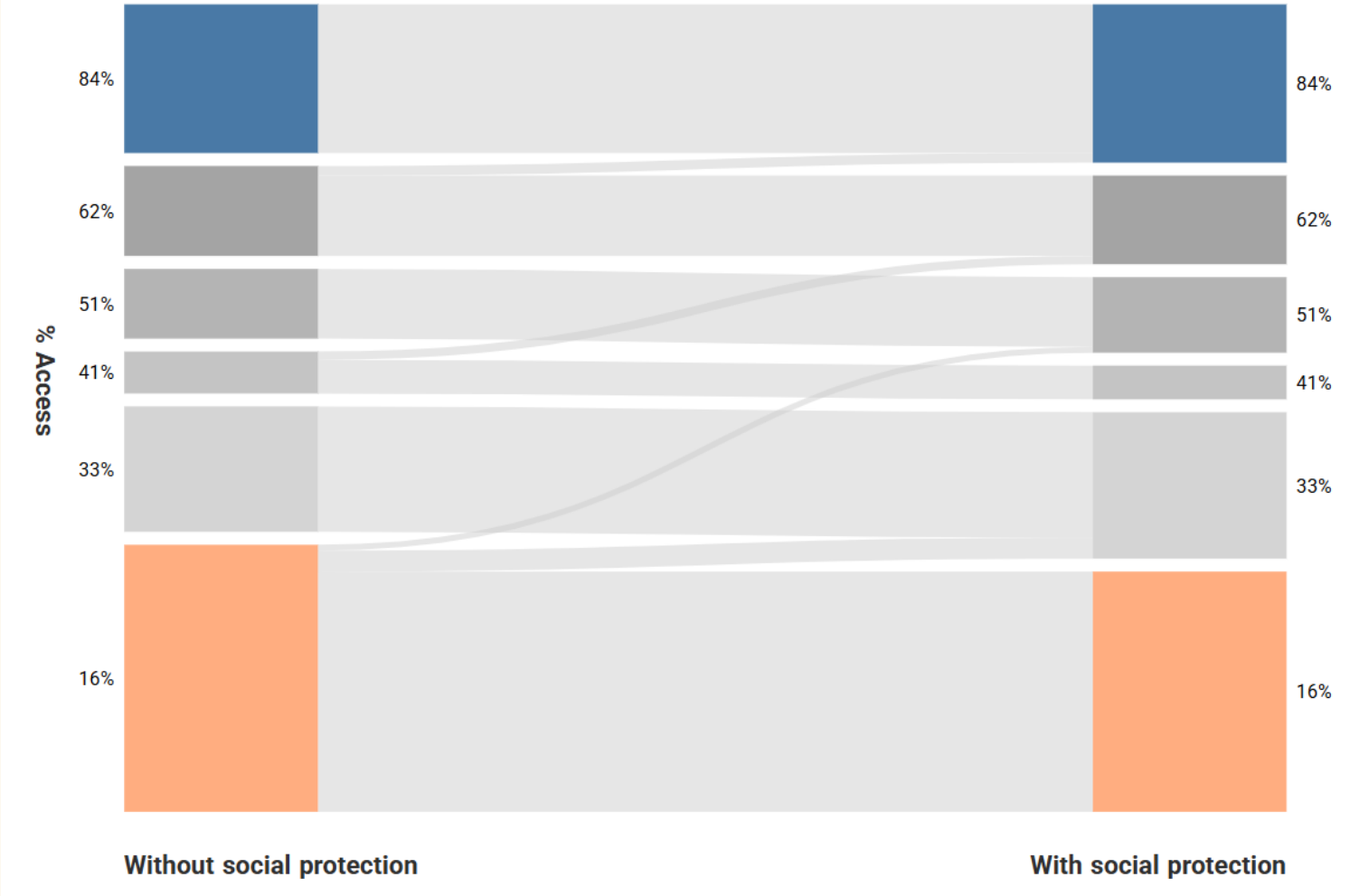


Source: Cambodia Socioeconomic Survey (2019-2020).

Let's start with the Furthest Behind group:

- Two small portions of the Furthest Behind group moved to higher-expenditure/higher-access groups.
  - A smaller sub-group moved to 51% access as they are headed by individuals with secondary or higher education.
  - A **larger sub-group** moved to 33% access as they were headed by individuals with lower or no education.
- Consequently, the size of the furthest behind group is smaller now because **about 130,000 households moved upwards**.
- Notice that the Furthest Behind group skipped the 41% access group because they are poorer/urban households.

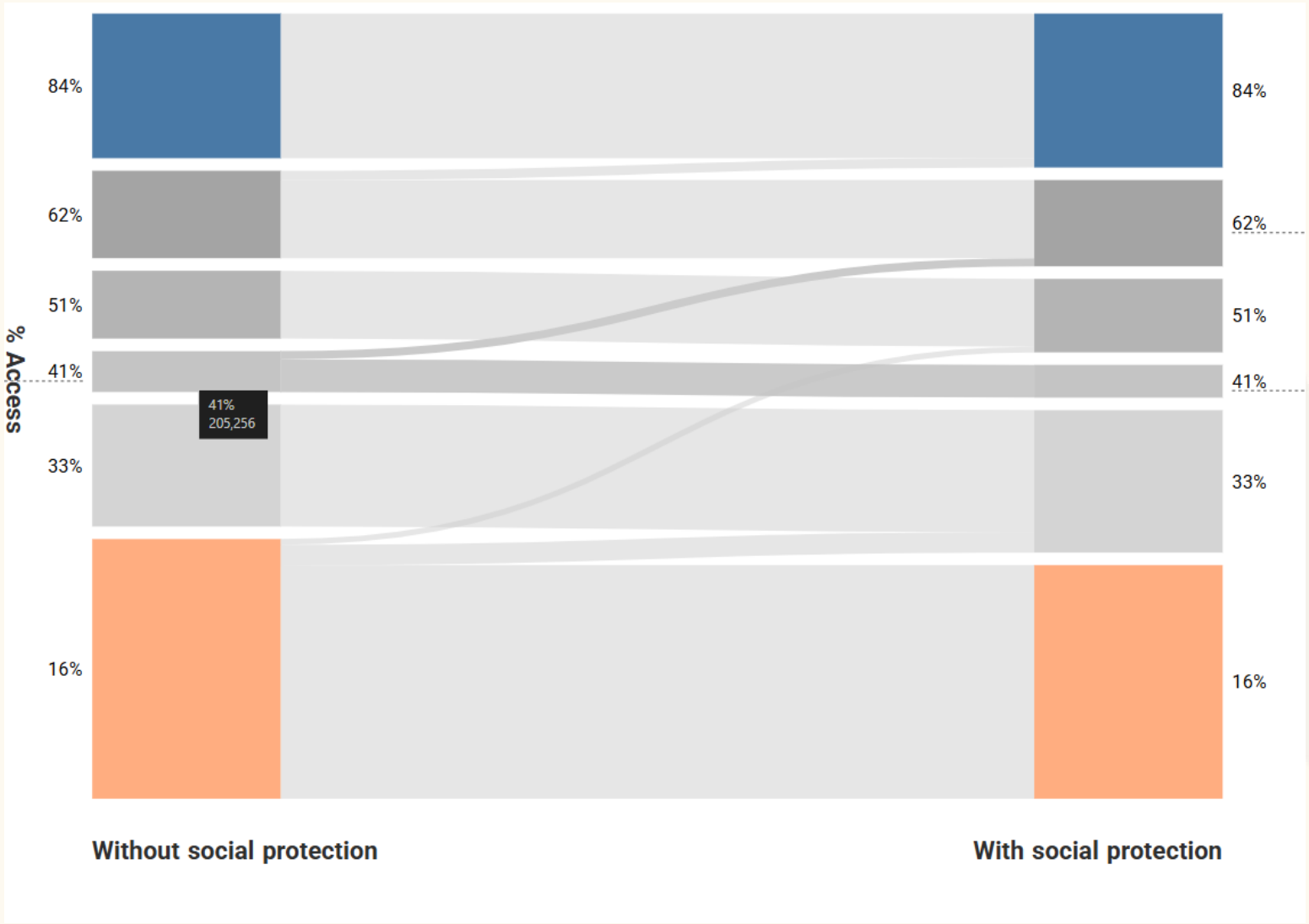
No movement in some groups



Let's check Group 2 and Group 3:

- No upwards movements from **33%** and **51%** access groups, as we expected because SP transfer cannot change:
  - Education level of household head
  - Location of the household head.
- But notice that some originally furthest behind households moved up here and increased their size slightly.

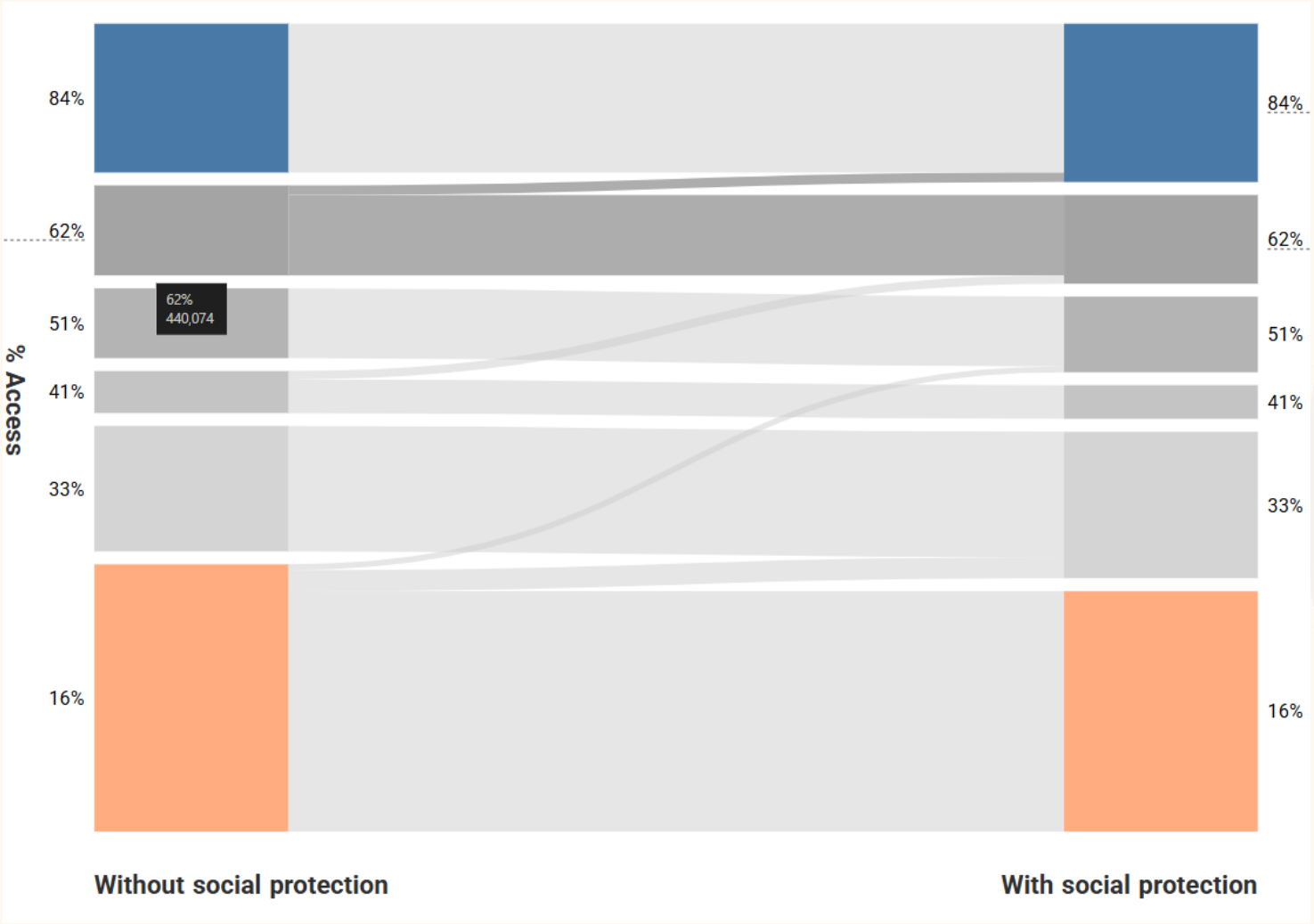
Source: Cambodia Socioeconomic Survey (2019-2020).



Let's check Group 4:

- A small portion moved to 62% access group.
- Recall that Group 4 are urban/poorer households with less than KHR 333,000 per month per capital as expenditure.
- Consequently, Group 4 got smaller. **Around 30,000 households moved upwards**.
- Notice that the Furthest Behind group skipped the 41% access group because they are poorer/urban households.

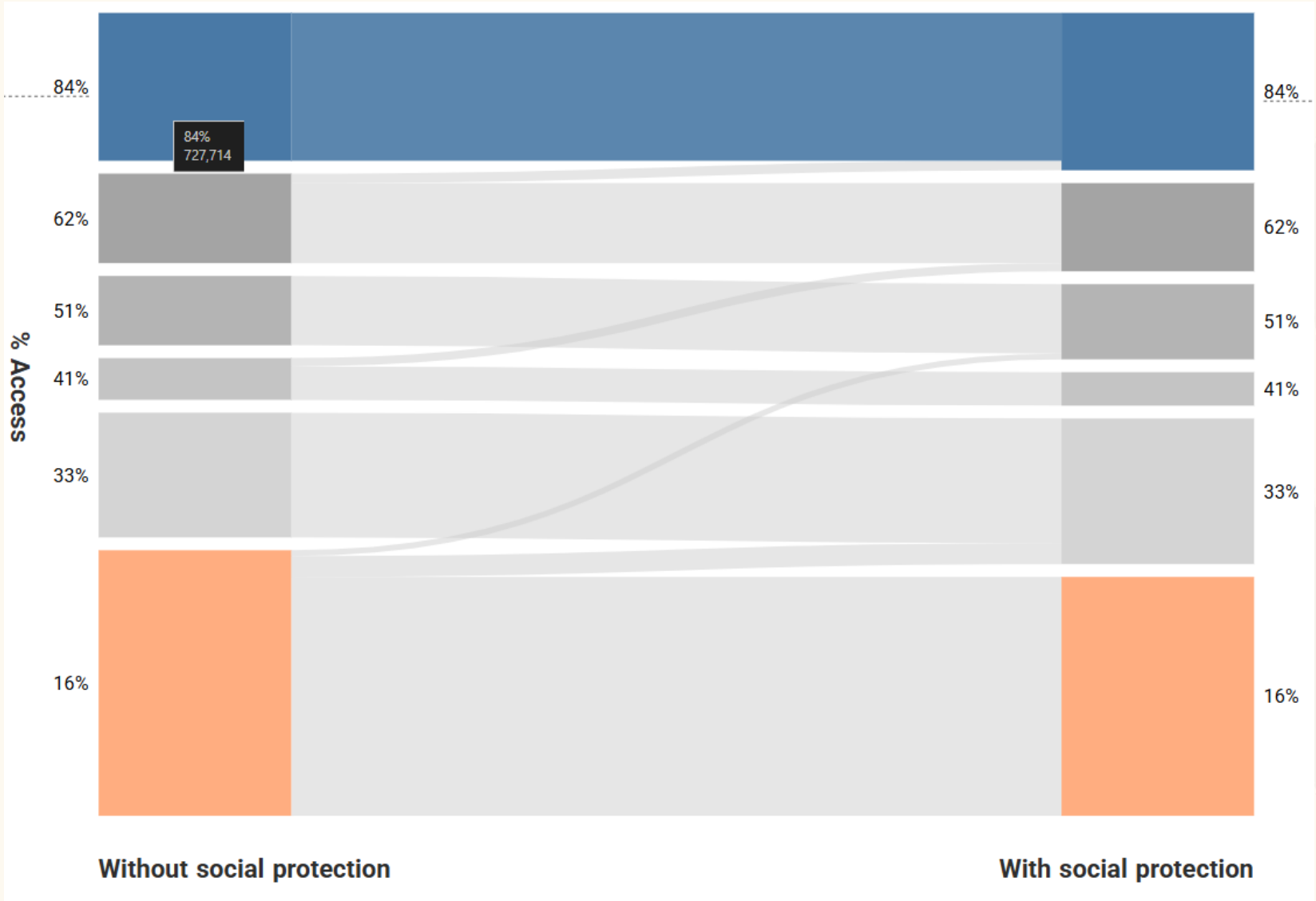
Source: Cambodia Socioeconomic Survey (2019-2020).



Let's check Group 5:

- A small portion moved to 84% access group.
- Recall that Group 5 are urban households with more than KHR 333,000 and less than KHR 561,000 per month per capita as expenditure.
- Consequently, Group 5 got slightly smaller due to this upward move. About 7,000 households moved upwards.
- Note that Group 5 welcomed some households from Group 4.

Source: Cambodia Socioeconomic Survey (2019-2020).



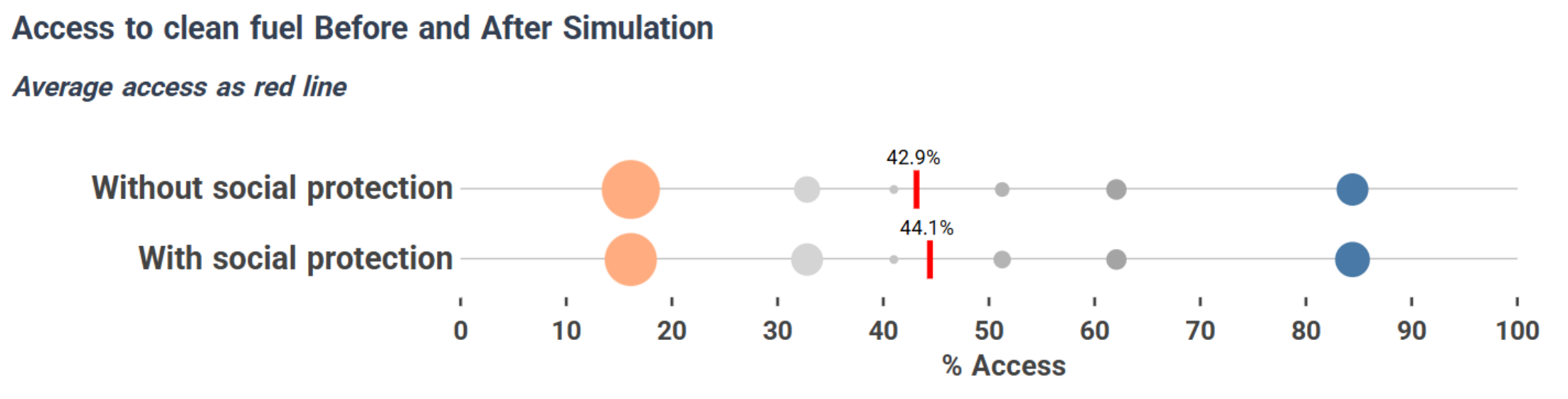
Let's check the Furthest Ahead:

- No upwards movements from the furthest ahead.
- But notice that some originally Group 5 households moved up here and increased their size slightly.

Source: Cambodia Socioeconomic Survey (2019-2020).

Before and after social protection ...

Despite these sizeable shifts, national average slightly improved.



Assumptions

1. All cash received is spent.
2. Cash transfers **only change household expenditure**
3. Households can **shift between groups** if their expenditure increases enough
4. Once a household moves to a new group, it **instantly takes on the average access rate** of that group
5. All other characteristics (education, location, infrastructure) remain **unchanged**
6. Ignores **lagged effects**, behavioral responses, or implementation barrier

Limitations of SP2LNOB App

✅ This is a **simulation tool**
→ It shows **how predicted access might change** if households received cash transfers

❌ This is **not a causal model**
→ It does **not estimate the actual effect** of cash transfers on access

→ The goal is to support **scenario exploration** — not impact evaluation

→ Useful for generating **policy hypotheses**, not for measuring **policy impact**

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Explore more

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News and Updates from Asia and the Pacific

- SP2LNOB App is launched in **Cambodia** and the **Maldives** via national consultations.
- Technical training of trainers organized to localize the offline algorithm.
- Follow up missions to broaden the use of the App by diving into administrative data and incorporating country-specific SP schemes.
- Draft knowledge products to inform inclusive and evidence-based policymaking.
- Stay tuned for the second inter-regional workshop in **November 2026** in **Bangkok**, **Thailand**