# REALISE-ing Gains

**Country:**
Liberia

**Name of Project:**
*Recovery of Economic Activity for Liberian Informal Sector Employment (P174417) - REALISE*

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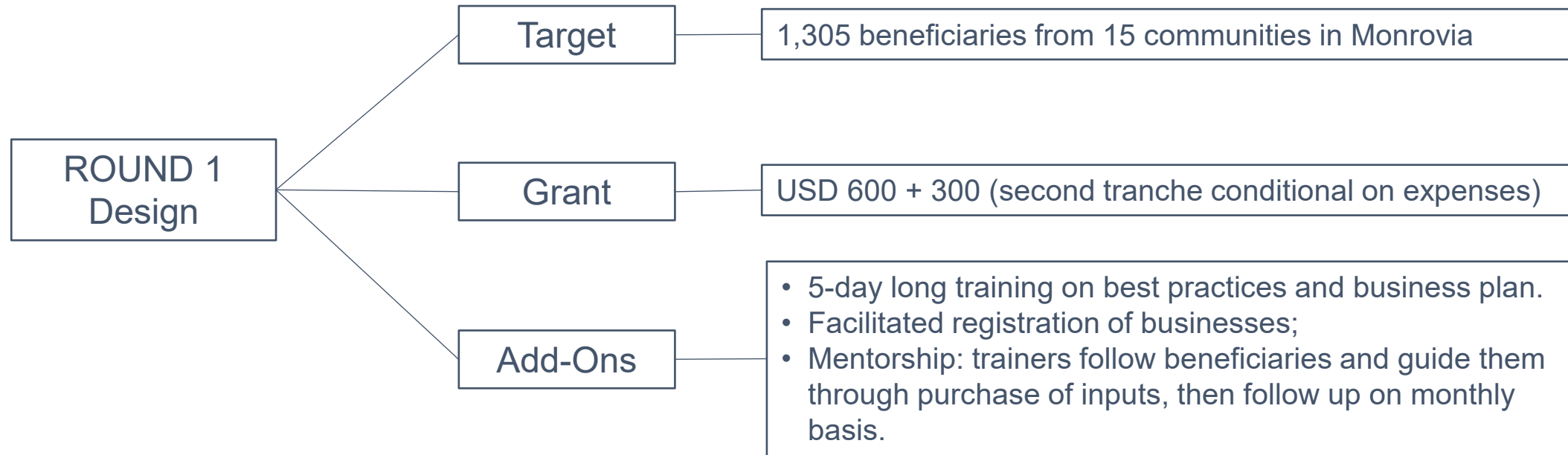- Mitja Del Bono
- Kollie Dogba

**Government agencies involved:**
- Ministry of Youth and Sports;
- Liberia Agency for Community Empowerment (LACE)

# Background and context

**Context**
- Covid-19 and Greater Monrovia highly impacted.
- High prevalence of informal and vulnerable businesses.
- Among the most in need, over 70% are female-owned.

**Project Development Objective**
to increase access to income earning opportunities for the vulnerable in the informal sector in response to the COVID-19 crisis in Liberia.

**Project Scope**
small business grants and labor-intensive public works.

**IE activities**
- small business grants, Round 1 (September 2022 – February 2023) covering about 1,300 beneficiaries
- Pilot-test online business discussion groups

# Small Business Grants

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                                    ┌─────────────┐     ┌──────────────────────────────────────────────┐
                                    │   Target    │─────│ 1,305 beneficiaries from 15 communities in Monrovia │
                                    └─────────────┘     └──────────────────────────────────────────────┘
    ┌─────────────┐
    │  ROUND 1    │                 ┌─────────────┐     ┌──────────────────────────────────────────────┐
    │  Design     │─────────────────│   Grant     │─────│ USD 600 + 300 (second tranche conditional on expenses) │
    └─────────────┘                 └─────────────┘     └──────────────────────────────────────────────┘

                                    ┌─────────────┐
                                    │  Add-Ons    │
                                    └─────────────┘
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- 5-day long training on best practices and business plan.
- Facilitated registration of businesses;
- Mentorship: trainers follow beneficiaries and guide them through purchase of inputs, then follow up on monthly basis.

# Business connectivity groups

**Rationale:**
help businesses share relevant information via mobile phone, and scale up already tried initiative*.

**Target:**
Round 1 of SBS: pilot online discussion groups among applicants

**Objective:**
help participants share market-specific information, knowledge and best practices; showcase value of new technologies;

**Activity Design:**
- Facebook Messenger groups to discuss relevant business topics
- Weekly live chatting sessions
- Discuss business topics, prompted by a moderator
- 5 to 10 members per group
- 10 sessions max

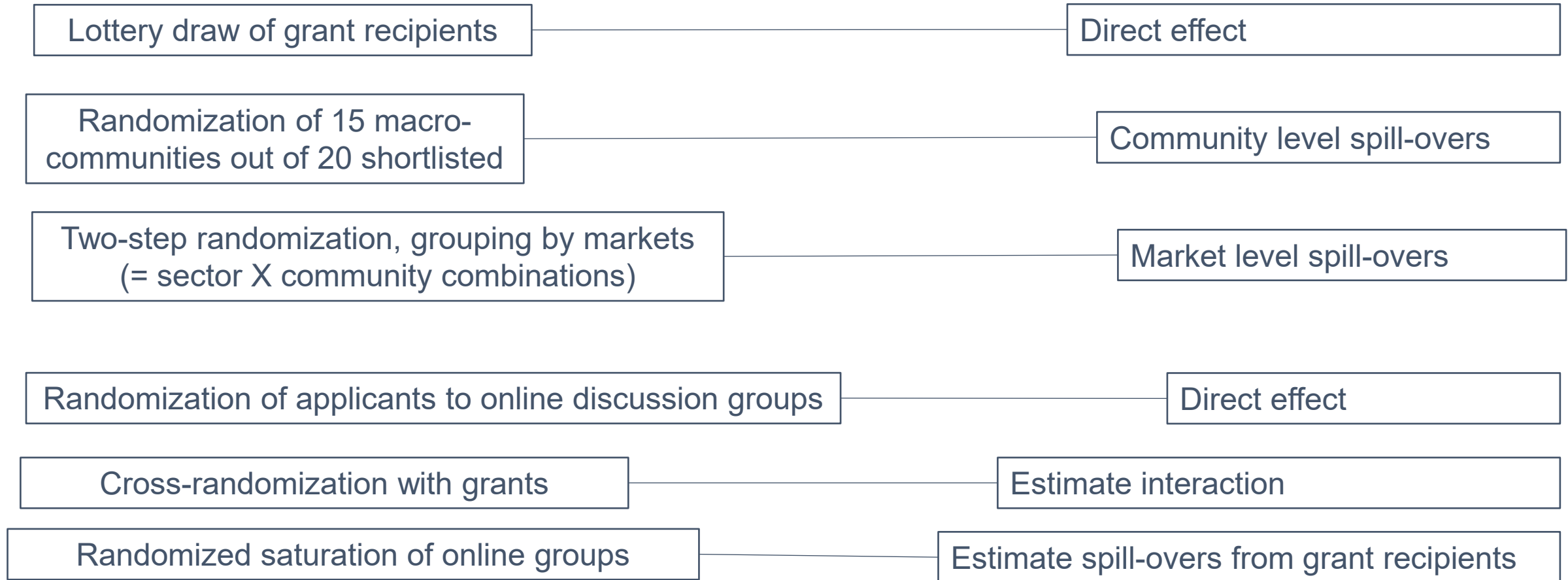*Similar activities initiated by NGOs and Ministry, but not solid evidence base.*

# Motivation for the impact evaluation

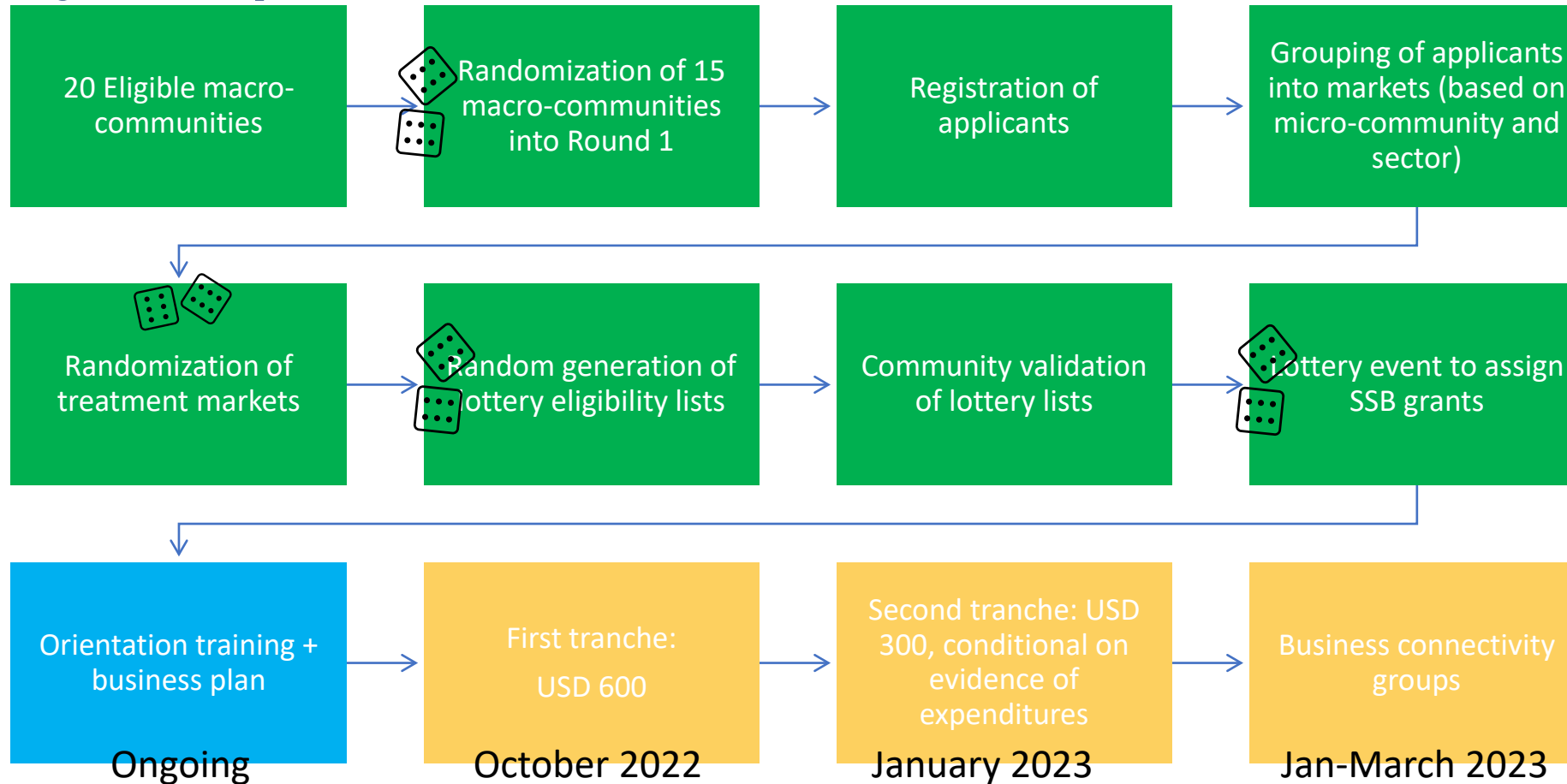| 1 | Optimal allocation of small firm subsidies: extension vs. penetration |
| 2 | Impact of low-cost add-on activities |
| 3 | Impact of exposure to technologies on adoption |
| 4 | Impact of technologies on business outcomes |

# Main Policy Research Questions

o What is the impact of small business grants <u>on direct beneficiaries</u>?

    o Are there spillovers on local competitors of beneficiaries?

    o Are there spillovers at the community level?

o What is the impact of online discussion groups <u>on participants</u>?

    o Does this complement or substitute the impact of grants?

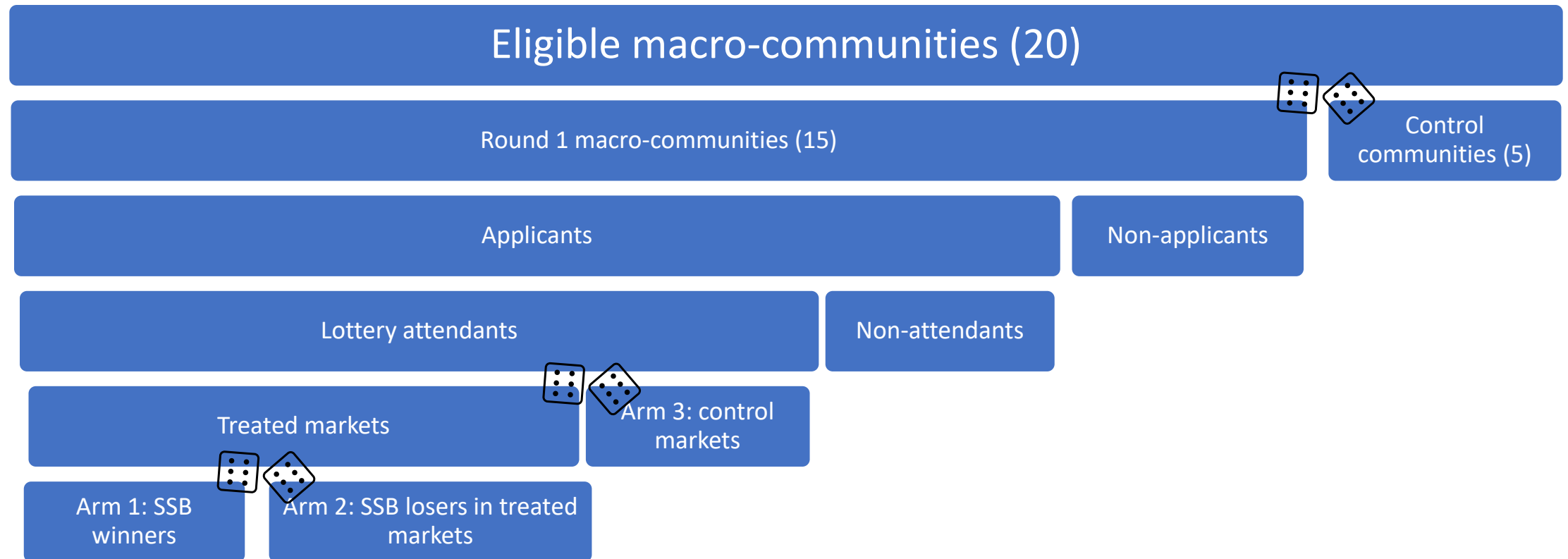    o Does this vary with the share of grant recipients in the group?
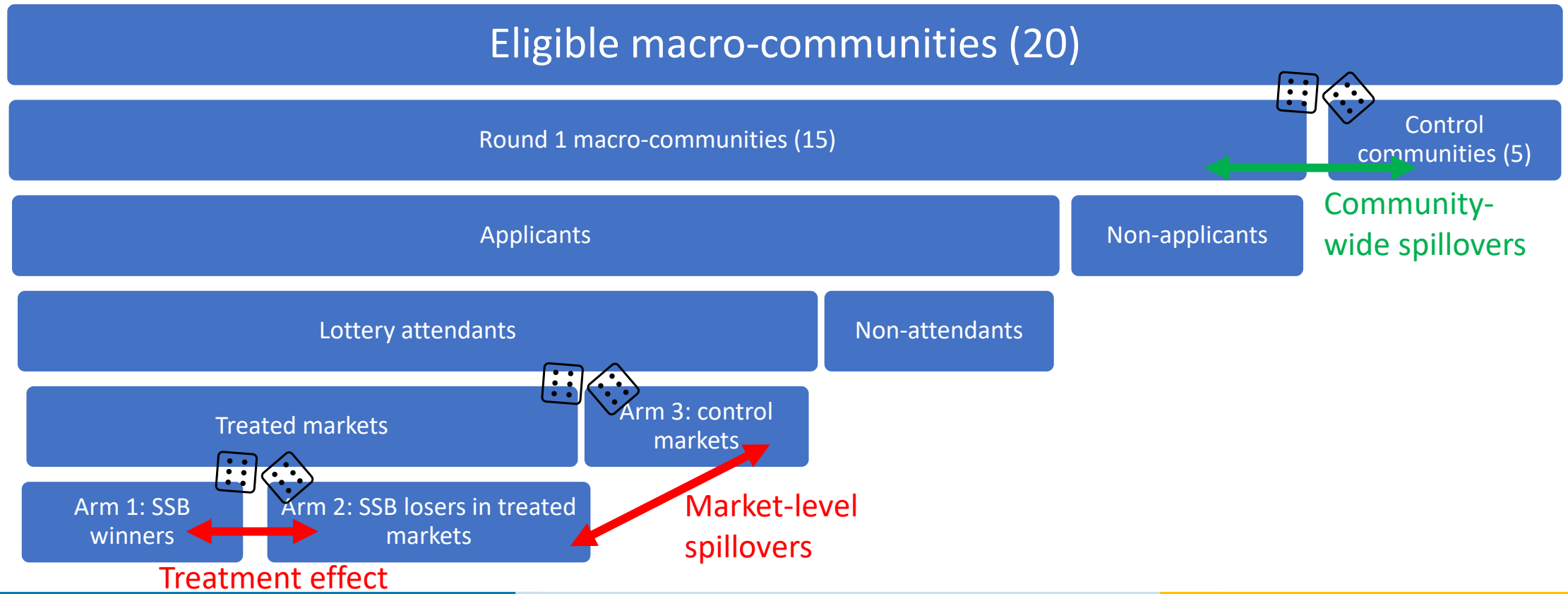
# Main methodological features

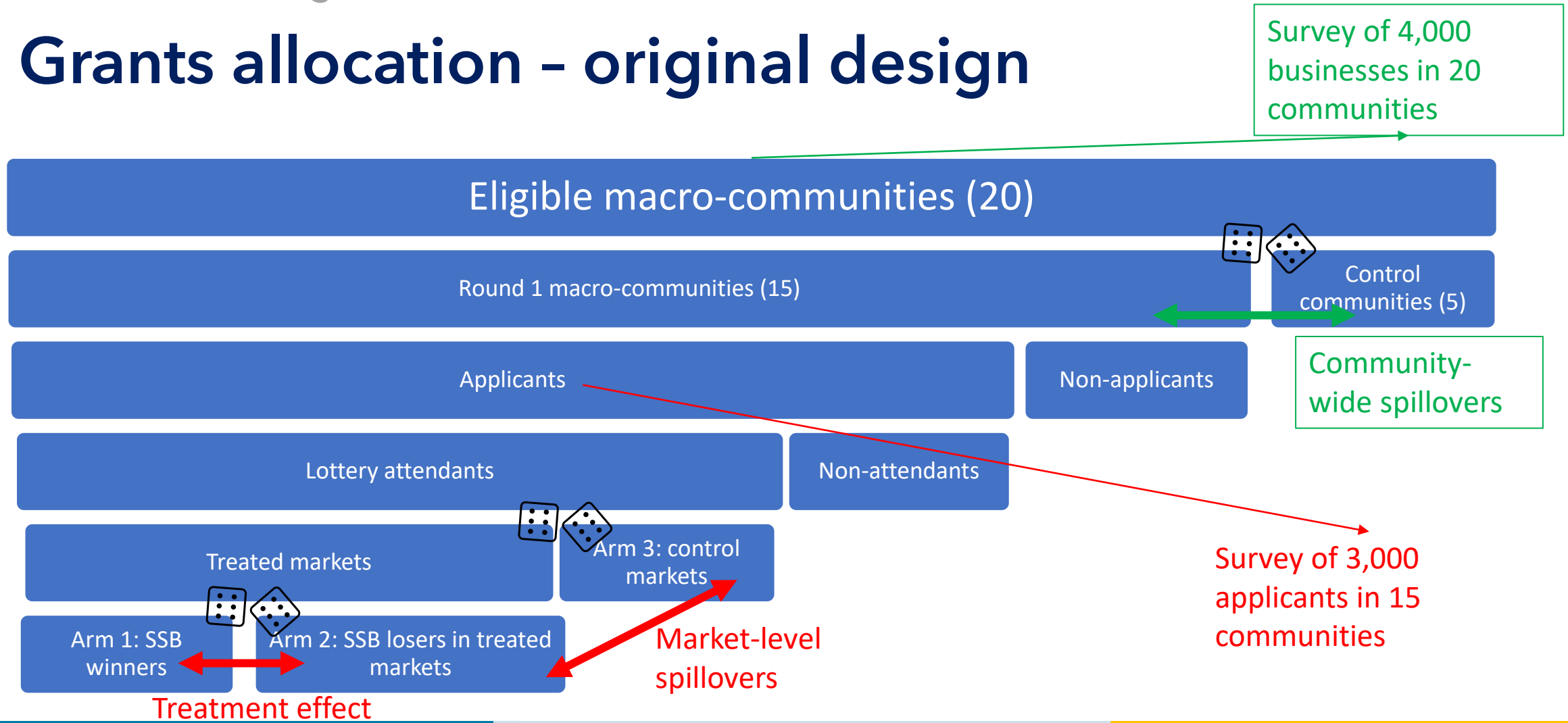| | |
|---|---|
| Lottery draw of grant recipients | Direct effect |
| Randomization of 15 macro-communities out of 20 shortlisted | Community level spill-overs |
| Two-step randomization, grouping by markets (= sector X community combinations) | Market level spill-overs |
| Randomization of applicants to online discussion groups | Direct effect |
| Cross-randomization with grants | Estimate interaction |
| Randomized saturation of online groups | Estimate spill-overs from grant recipients |

# Project's process

| 20 Eligible macro-communities | → | Randomization of 15 macro-communities into Round 1 | → | Registration of applicants | → | Grouping of applicants into markets (based on micro-community and sector) |

| Randomization of treatment markets | → | Random generation of lottery eligibility lists | → | Community validation of lottery lists | → | Lottery event to assign SSB grants |

| Orientation training + business plan | → | First tranche: USD 600 | → | Second tranche: USD 300, conditional on evidence of expenditures | → | Business connectivity groups |

| Ongoing | October 2022 | January 2023 | Jan-March 2023 |

# Grants allocation – original design

Eligible macro-communities (20)

Round 1 macro-communities (15)

Control communities (5)

Applicants

Non-applicants

Lottery attendants

Non-attendants

Treated markets

Arm 3: control markets

Arm 1: SSB winners

Arm 2: SSB losers in treated markets

# Grants allocation – original design

# Allocation to online groups: tentative design

Baseline IE respondents who expressed interest in group intervention

2,000

Arm 1: Group discussion treatment

1,200

Arm 2: Group discussion control

800

Arm 1a: Groups with no SSB recipients

(30 groups)

Arm 1b: Groups with 20% SSB recipients

(30 groups)

Arm 1c: Groups with 80% SSB recipients

(30 groups)

Arm 1d: Groups with 100% SSB recipients

(30 groups)

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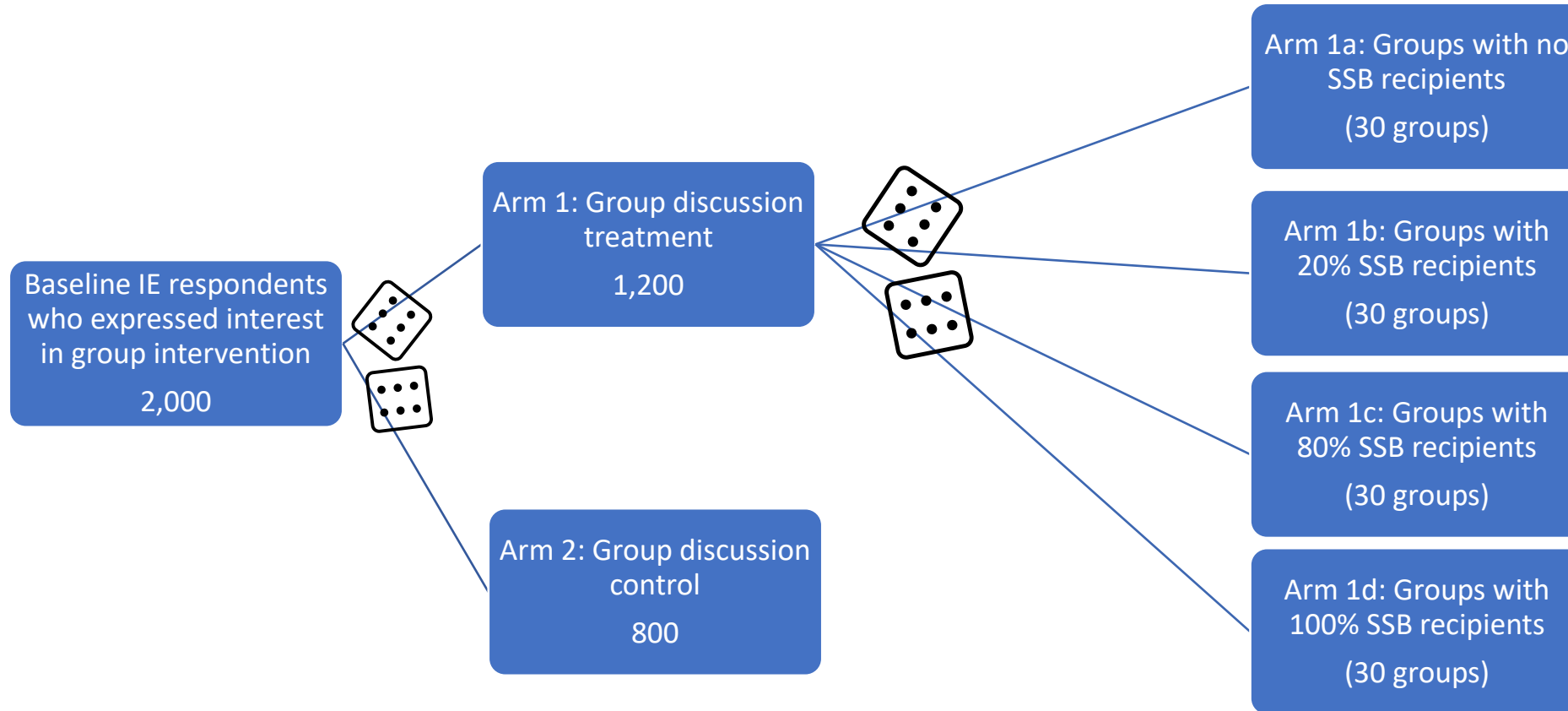
# Key Outcomes

| Outcome Domain | Level | Source |
|---|---|---|
| Business outcomes (revenues, profits, n. employees, assets) | Individual | Survey, 6 months after orientation training |
| Business practices | Individual | Survey, 6 months after orientation training |
| Use and access to smartphones | Individual | Survey, 6 months after orientation training |

# Effect of grants: estimation (original plan)

**Applicants' sample**

$$y_{ij} = \delta T_{ij} + \gamma M_j + X_{ij}\beta + \epsilon_{ij}$$

where $T_{ij}$ is treatment status of person *i*, $M_j$ is the treatment status of market *j*, $X_{ij}$ is a vector of controls.

- $\delta$ = Treatment effect on the treated.
- $\gamma$ = Market-level spillover.

- Identifying assumptions:
  - $\text{cov}\left(T_{ij}, \epsilon_{ij} \middle| X_{ij}, M_j\right) = 0$
  - $\text{cov}\left(M_j, \epsilon_{ij} \middle| X_{ij}\right) = 0$
    - Guaranteed by random assignment of both market treatment and individual treatment

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# Effect of business groups: estimation

$$y_{ijk} = \alpha G_{ijk} + \lambda G_{ijk} T_{ijk} + \theta G_{ijk} S_k (1 - T_{ijk}) + \kappa G_{ijk} S_k T_{ijk} + \delta T_{ijk} + \gamma M_j + \tau G_{ijk} M_j + \boldsymbol{X_{ijk}} \beta + \epsilon_{ijk}$$

where $T_i$ is SSB treatment status of person *i*, $M_j$ is the treatment status of market *j*, $G_i$ is a dummy for assignment to the business groups, $S_k$ is the share of people receiving SSB in group *k*, $\boldsymbol{X_{ijk}}$ is a vector of controls.

- $\alpha$ = Effect of assignment to group discussions;
- $\alpha + \lambda$ = Effect of assignment to group discussions among SSB recipients;
- $\theta$ = Effect of exposure to SSB beneficiaries in a group, for a non-beneficiary;
- $\kappa$ = Effect of exposure to SSB beneficiaries in a group, for a beneficiary.

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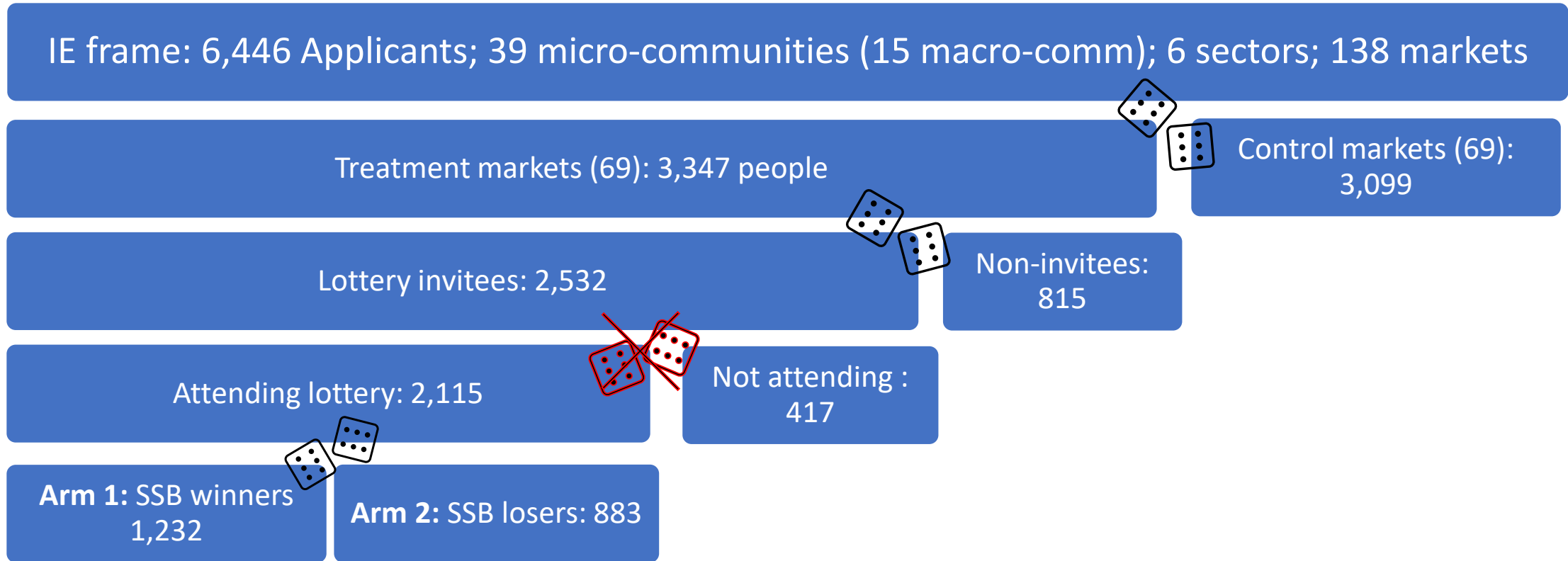**Impact Evaluation Collaborative Workshop** | Hosted by PEI and DIME

# Implementation challenges and design updates

- More applicants per market than originally expected.

    - Concerns over logistics of high-attendance lottery events.

- Market randomization was then conducted in the back-end, before community validation and the lottery event.

    - Control markets will be covered in next rounds.

- To ensure the baseline survey would capture enough winners, we capped the number of lottery invitees to 160 per community (selected randomly),

- We sampled 15 per market from among the invitees. Non-invitees only used as a buffer for markets that were too small.

# Grants allocation – original plan

Round 1 macro-communities (15)

| Applicants | Non-applicants |
| --- | --- |

| Lottery attendants | Non-attendants |
| --- | --- |

Treated markets

Arm 3: control markets

Arm 1: SSB winners

Arm 2: SSB losers in treated markets

**Market-level spillovers**
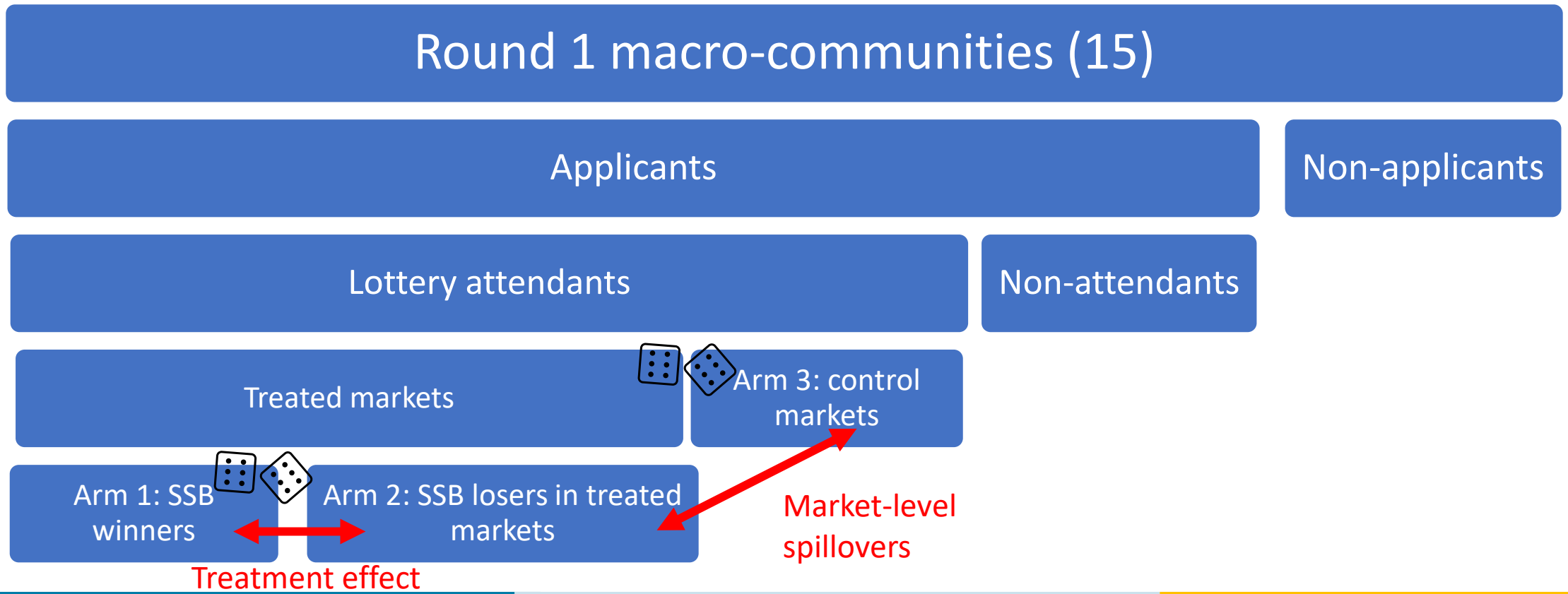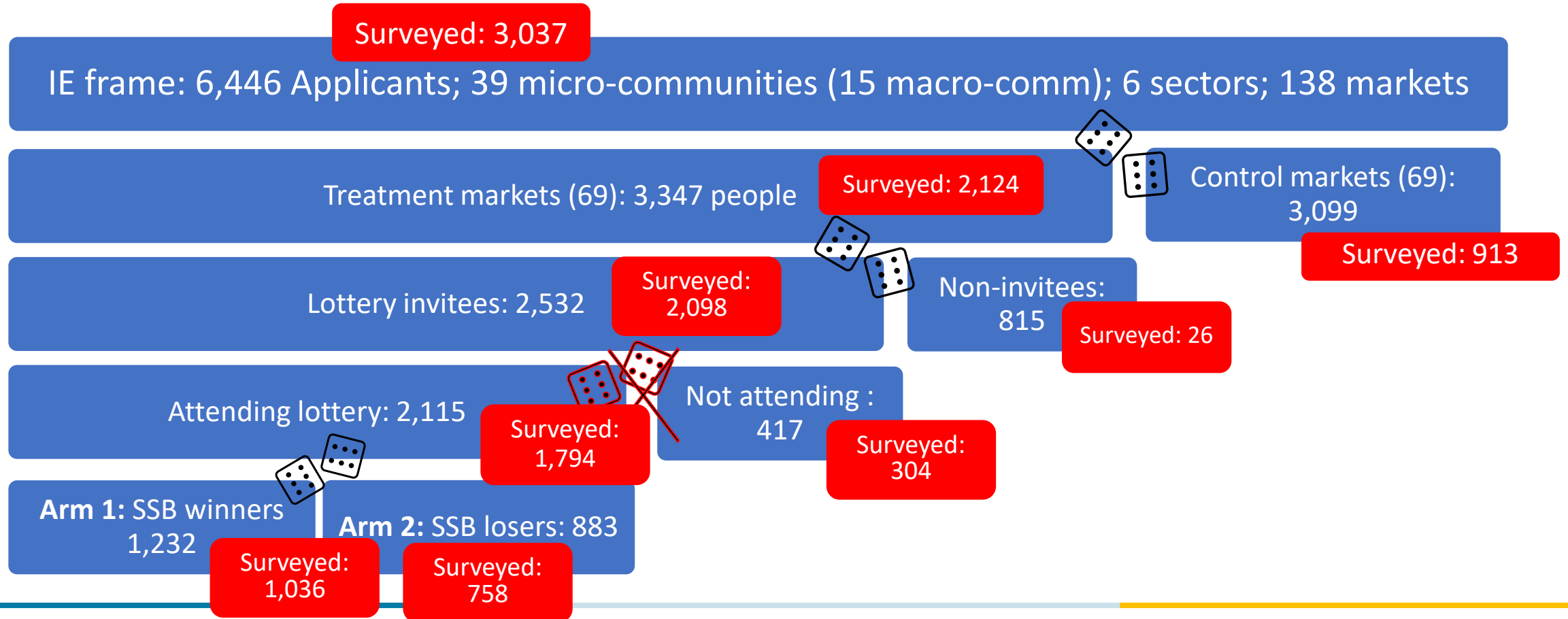
**Treatment effect**

# Direct effect of grants: updated identification strategy

**Sample of attendants**

$$y_{ij} = \delta T_{ij} + \boldsymbol{X_{ij}}\beta + \epsilon_{ij}$$

where $T_{ij}$ is treatment status of person *i*, $\boldsymbol{X_{ij}}$ is a vector of controls;

- $\delta$ = Treatment effect on the treated.


- Identifying assumption: $cov(T_{ij}, \epsilon_{ij}|\boldsymbol{X_{ij}}) = 0$; guaranteed because treatment is random conditional on attendance.

**Impact Evaluation Collaborative Workshop** | Hosted by PEI and DIME

# Spillover effect of grants: updated identification strategy

## Applicants' sample

$$y_{ij} = \delta M_j A_{ij} T_{ij} + \gamma M_j + \theta M_j A_{ij} + \boldsymbol{X_{ij}}\beta + \epsilon_{ij}$$

where $T_{ij}$ is treatment status of person *i*, $M_j$ is the treatment status of market *j*, $A_{ij}$ is attendance of person *i* , $\boldsymbol{X_{ij}}$ and $\boldsymbol{Z_{ij}}$ are vectors of controls;

- $\delta$ = Treatment effect on treated *attendants*;
- $\gamma$ = Market-level spillover;
- $\theta$ = any difference between those attending and non-attending;

- **Notes**: For $M_j$ to identify spillovers, being invited to the lottery event (which is very highly correlated) must not have separate effects on potential outcomes;
- **Question:** We cannot observe potential attendance behavior among people in control markets. Is it sufficient to control for attendance of people from treated markets?
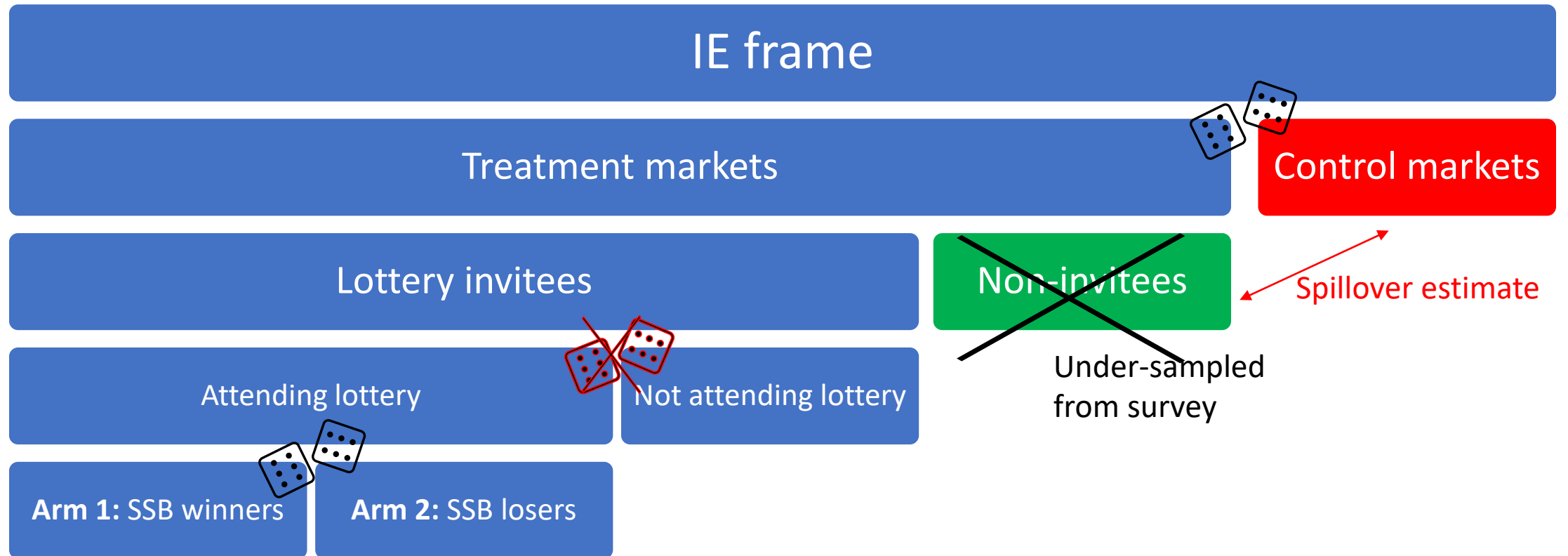
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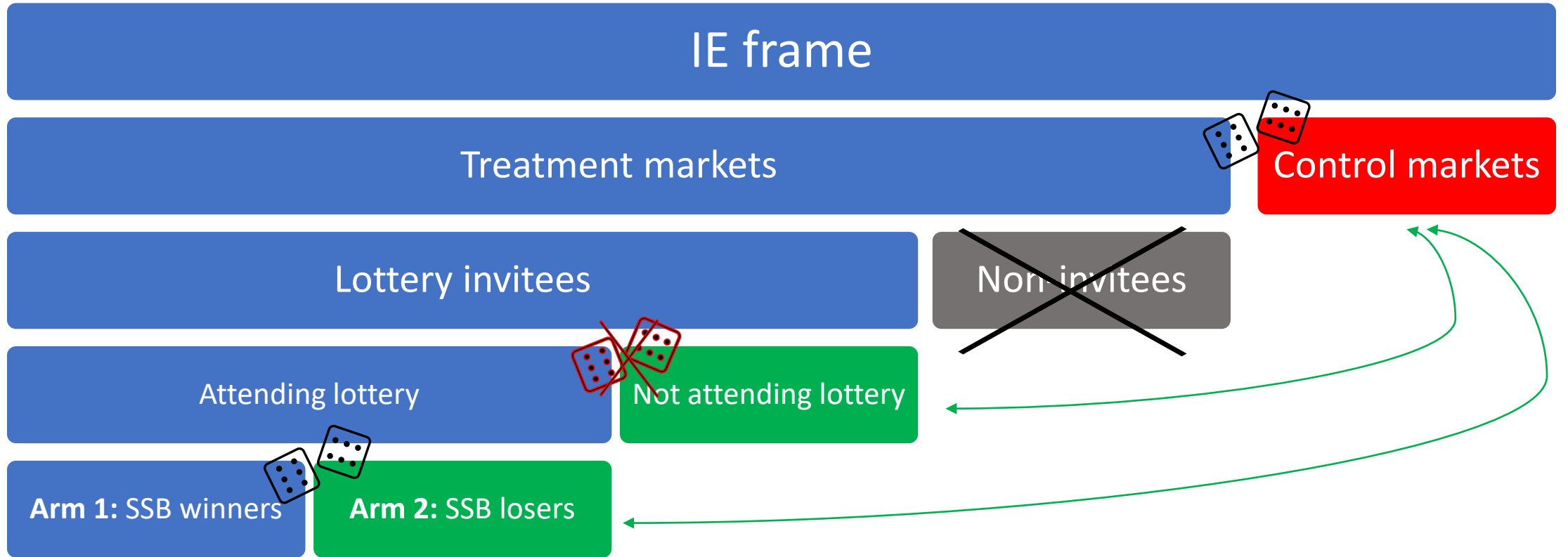# Open questions (1): Spillovers estimation, original design



IE frame

Lottery invitees

Attending lottery

Not attending lottery

Treatment markets

Control markets

**Arm 1:** SSB winners

**Arm 2:** SSB losers

Spillover among attending
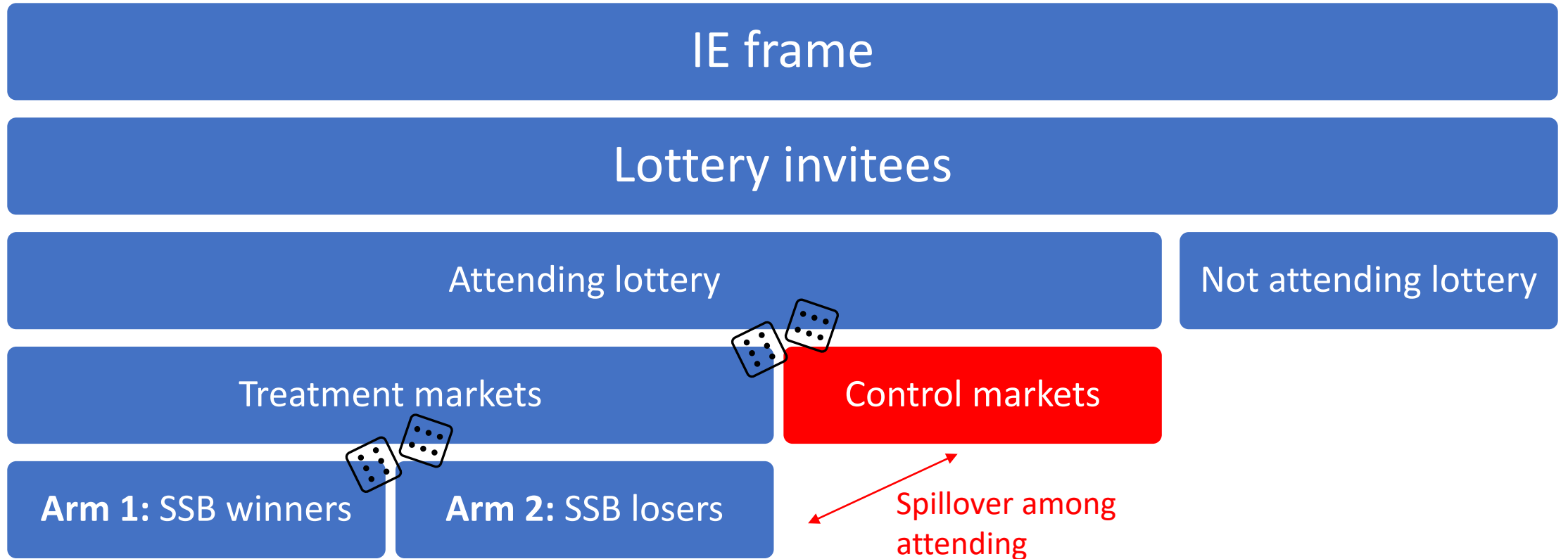
# Open questions (1): Spillovers estimation, new design

# Open questions (1): Spillovers estimation



IE frame

Treatment markets

Control markets

Lottery invitees

Non-invitees

Spillover estimate

Attending lottery

Not attending lottery

Under-sampled from survey

**Arm 1:** SSB winners

**Arm 2:** SSB losers
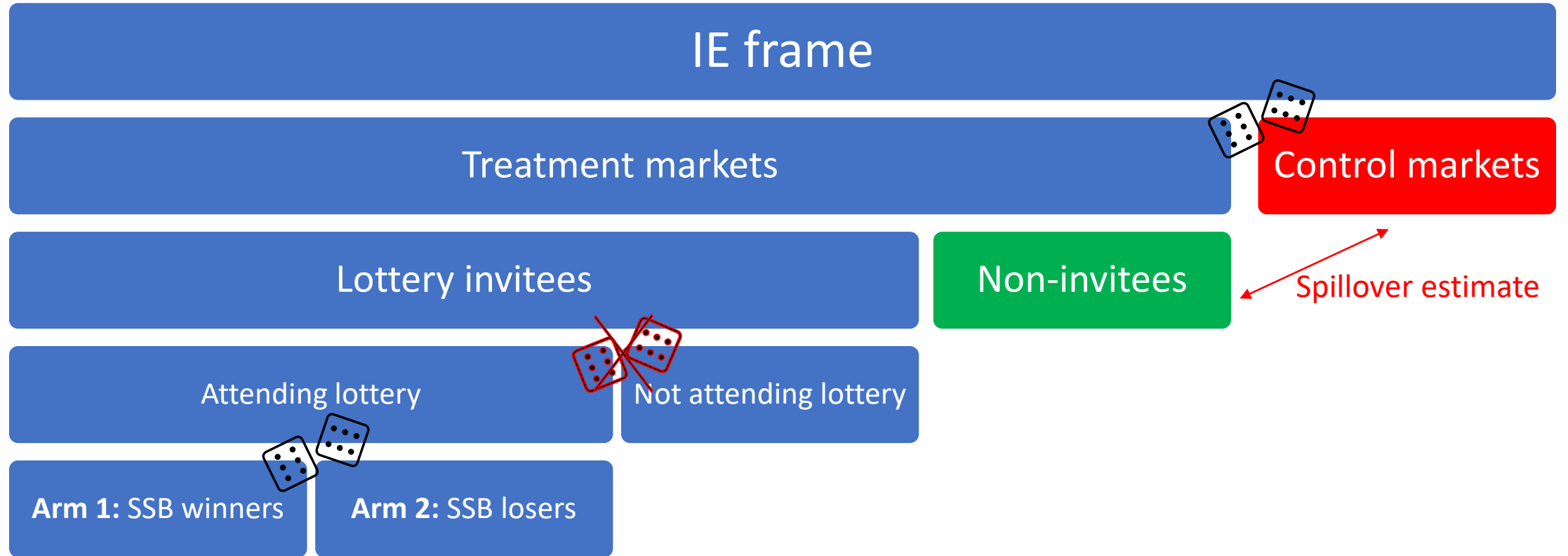
# Open questions (1): Spillovers estimation

# Open questions (1): Spillovers estimation, identification

- Spillover effects are likely different between attending and non-attending invitees:
  - Attendance is higher among those that are from more central sub-communities (since lottery event was held in the central sub-community within the macro-community)
  - Attendance depends on opportunity cost of time: non-attendants could have larger business and be less impacted by spillovers.
- Control for attendance (only within treated markets)
  - Is this enough?
- Subject to budget availability, follow-up surveys can be expanded to more of the non-invitees
  - Reasons for caution: non-invitees are not a large sample and don't cover all markets
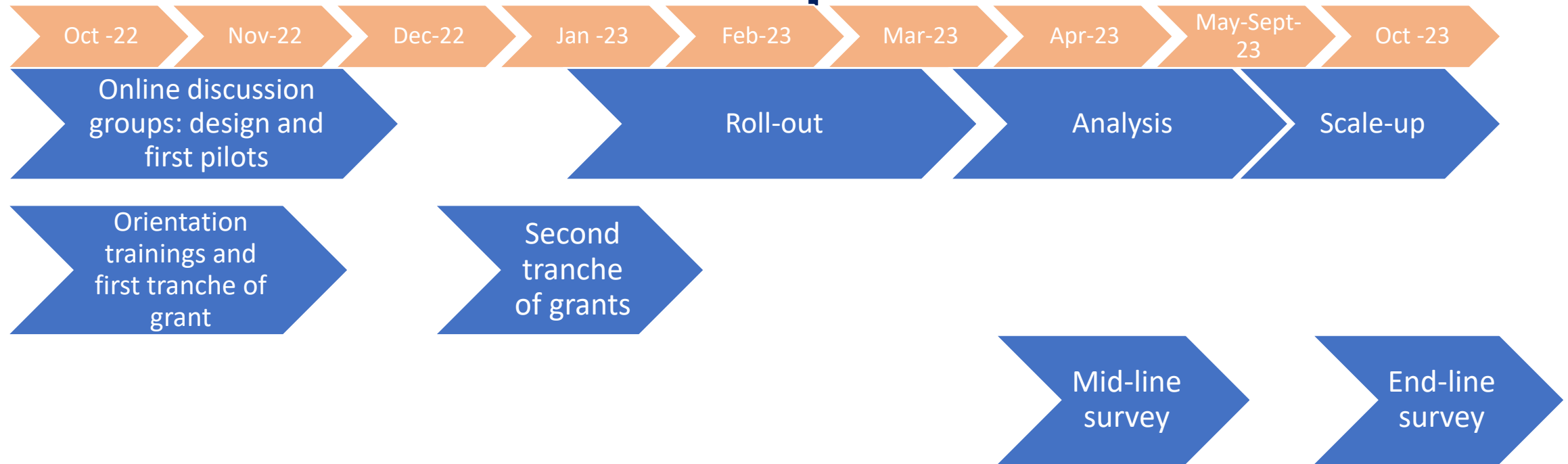  - No baseline data => less precision

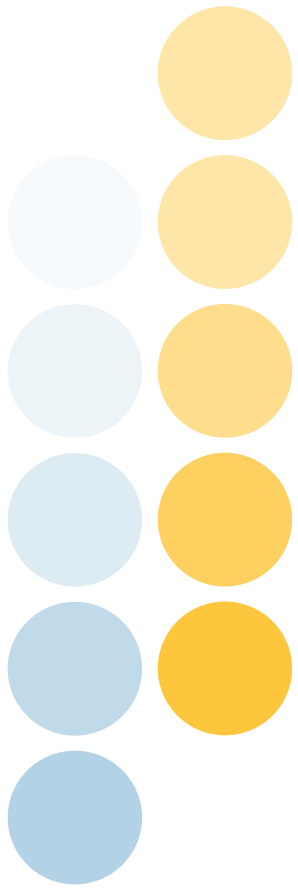# Open questions: Capacity to estimate sectoral spillovers

- Sectoral classification is somewhat arbitrary:
  - Many businesses sell a broad range of products;
  - Some businesses might invest in new sectors anyway;

- On the other hand,
  - questionnaire asks granular information about sectors, with multiple options.
  - In the questionnaire of random businesses (4,000+ observations), we ask more detailed information about competition within and across markets.

- Some applicants were misreporting information at application stage:
  - E.g. in one community, 10% of applicants were dropped because they were not entrepreneurs according to community leaders. In all other communities, nobody was dropped via community validation.

# Implementation challenges

- Lottery execution: long lines, low attendance from satellite sub-communities, complexity due to the market stratification.

- Baseline survey: Many respondents thought it would affect eligibility, despite clear guidance to the contrary. This might make responses less credible. However, since survey was conducted before lottery invitation, there should be no correlation with treatment.

- Compliance with sector classification of businesses: some beneficiaries want to invest in a different sector from the one reported at baseline.

- Some winners will probably drop out of orientation, especially if they are not currently running a business (eligibility criterion).

- Potential overlapping treatments: in previous project, some beneficiaries spontaneously organized Whatsapp groups with local animators. If this happens again, it might confound study on effect of group intervention.

*Liberia: REALISE-ing Gains*

# Timeline and next steps

| Oct -22 | Nov-22 | Dec-22 | Jan -23 | Feb-23 | Mar-23 | Apr-23 | May-Sept-23 | Oct -23 |
|---------|--------|--------|---------|--------|--------|--------|-------------|---------|

Online discussion groups: design and first pilots

Roll-out

Analysis

Scale-up

Orientation trainings and first tranche of grant

Second tranche of grants

Mid-line survey

End-line survey

# Thank you!

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## PEI FUNDING PARTNERS