Success Stories and Lessons Learned: Innovation (Small Area Estimation Capacity Building Efforts)
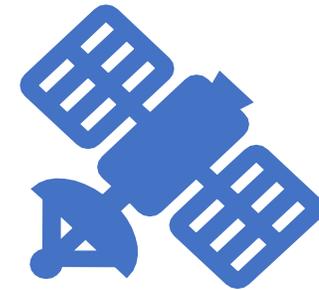
African Centre for Statistics

United Nations Economic Commission for Africa

CONTEXT

Direct survey estimates often lack precision at district, county, or village levels because the sample sizes are too small.

SAE techniques combine survey data with other information (from censuses, administrative records, satellite imagery, big data, etc.) to produce more accurate local-level statistics.

Why it is Innovative

- Evidence-Based Policy at Local Levels
- Governments can design and monitor programs targeted to districts or communities, rather than relying only on national averages.
- Data Integration
- Bridging data gaps
- Advanced methods
- Many applications in Africa

Capacity building efforts in Small Area Estimation for NSOs in Africa

2023 Cohort: *Oct to Dec 2023: SAE* **eLearning Component:**

- Self nomination - *following call for participants, 87 expressed interest*

- Selection : *30 participants – Ethiopia, ESwatini, The Gambia, Ghana, Kenya, Nigeria, South Africa, South Sudan, Uganda.*

- 10 modules eLearning course (Over 3 months)

- 1.5 - hour Synchronous sessions with course facilitator *(discussions and questions on training materials)*

Challenges:

  - Participants were not involved in estimation of indicators in their every-day work or are not familiar with modelling
  - Few participants were confident with doing assignments in R
  - Low Course completion rate *(<50% completed half of the videos.)*

Best Performer: Sponsored to present her experience at the Small Area Estimation Conference, ***Lima, Peru, 3-7 June 2024***

Lessons Learnt:

- Communicate that knowledge of R is a key prerequisite.

- **Target:**
  - Those responsible for estimating indicators in NSOs
  - Those in the deciding position if SAE is to be used by the NSO

- Necessary for nomination of course participants to be done by NSOs

- Simplify the SAE project assignments

- Adopt two steps for the learning modules: required (mandatory) and non-required (optional) modules

- Develop a syllabus and be clear with the expectations; including making attendance of the guided sessions mandatory

- Extend the course completion period by 1-2 more weeks to allow for the completion of the R projects

Capacity building efforts in Small Area Estimation for NSOs in Africa

2024 Cohort: *Aug to Oct 2024*

eLearning Component:

Egypt, Eswatini, the Gambia, Malawi, Mauritius, Mozambique, Nigeria, Namibia, Sierra Leon, Sudan, Uganda, and Zimbabwe.

- *Requests for nominees sent to Heads of NSOs in June 2024*

- *Up to 43 nominees; 41 registered*

- *35 enrolled into the course, ONLY 14 attempted the 2 mandatory course assignments*

In-person training:

All 8 EAC Member states + Botswana, Ghana, Liberia, **Namibia,** Seychelles, and Zimbabwe – *30 participants o/w- 12 females*

- *Preworkshop webinar with participants, 15 August 2024; Pre-workshop mandatory eLearning course by workshop participants; Training Workshop on Small Area Estimation methods, 26 – 31 August 2024*

What was done differently:

- Setup WhatsApp groups for both groups.

- 7 modules were categorised as required while 3 were optional.

- *Additional topic:* SAE using Geospatial data introduced at the in-person workshop

- Requested participants to produce a knowledge product following the training.

Capacity building efforts in SAE for NSOs in Africa

2025 Cohort: Aug – Oct – sponsored by UNSD RPTC

French-speaking countries for guided SAE eLearning:

- Cote d'Ivoire, Djibouti, Burundi, Malim Cameroon, Equatorial Guinea, Senegal, Gabon and Burkina Faso

- ***Requests for nominees sent to Heads of NSOs in July 2025***

- ***Up to 27 nominees; 17 registered – o/w -1 female,***

- *English – speaking countries: (eLearning & in-person):*

Rwanda, Nigeria, Mauritius, Eswatini, Lesotho, Somalia, South Africa, The Gambia, Egypt, Malawi, Zimbabwe, Tanzania, Namibia, Tanzania, South Africa, Egypt, Eritrea, Seychelles, Ghana, Kenya, Zambia and Botswana

- ***Up to 73 nominees; 41 registered***

- In-person SAE training using Earth Observation data:

- scheduled for 20 – 24 October 2025 in Nairobi

- Will be conducted in partnership with WB and EAC; with ECA contribution through DA-14 (WS 1.2)

- Participating countries include all 8 EAC member states + Nigeria, Zimbabwe, Lesotho, Malawi, Namibia, Eswatini, South Africa, Egypt, the Gambia, Eritrea, Ghana and Zambia.

Conclusion

- Innovative tool to generate **reliable, disaggregated statistics** where surveys alone are insufficient;

- Strengthen **evidence-based policymaking**, SDG monitoring, and targeted interventions at **local levels;**

- Enhances the **relevance, credibility, and cost-effectiveness** of official statistics.

- **Adopt as a strategical** within NSDS;

- **Build capacity** in advanced statistical and machine learning methods;

- **Leverage multiple data sources** (census, admin, geospatial, big data);

- **Pilot and scale** SAE in priority areas (poverty, agriculture, health);

- **Collaborate regionally** for harmonized methods.