Strengthening RTKCs with Online Training Solutions

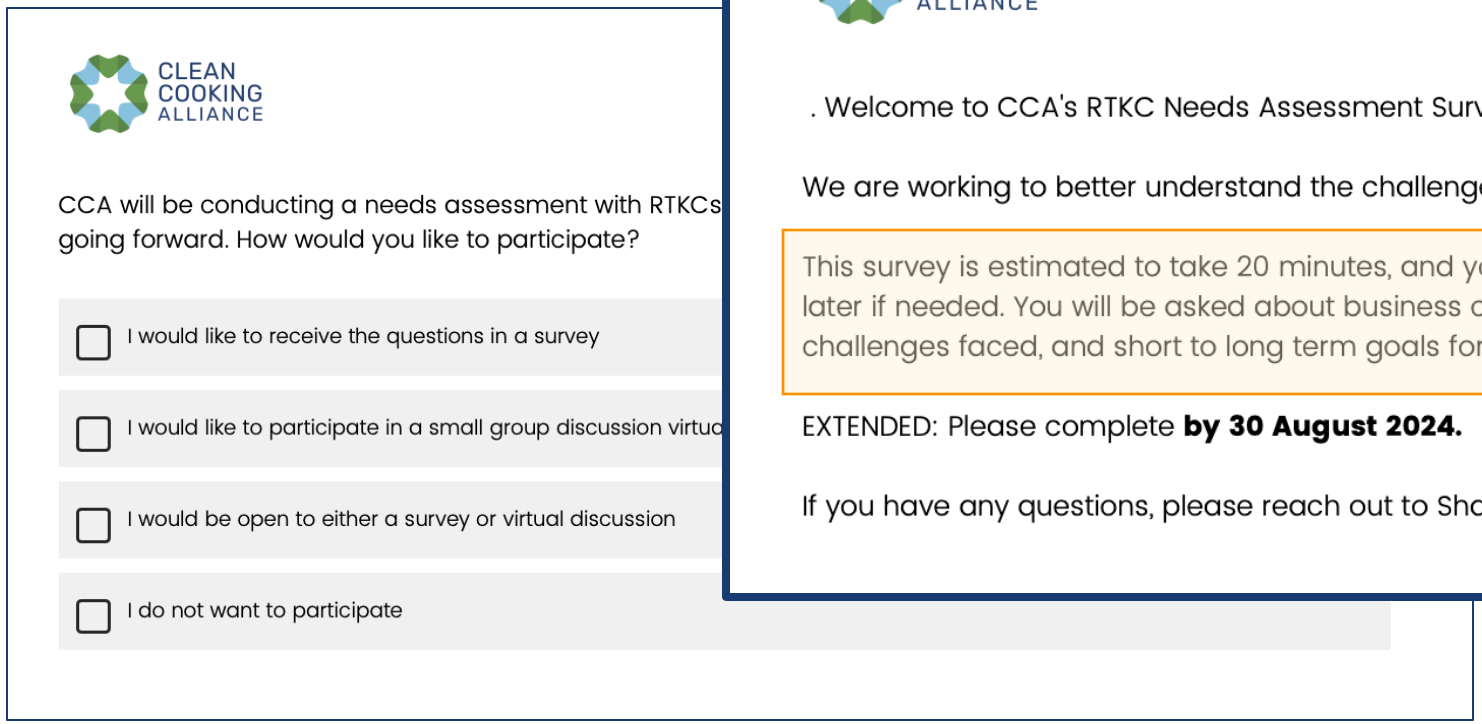
ETHOS Conference 2025

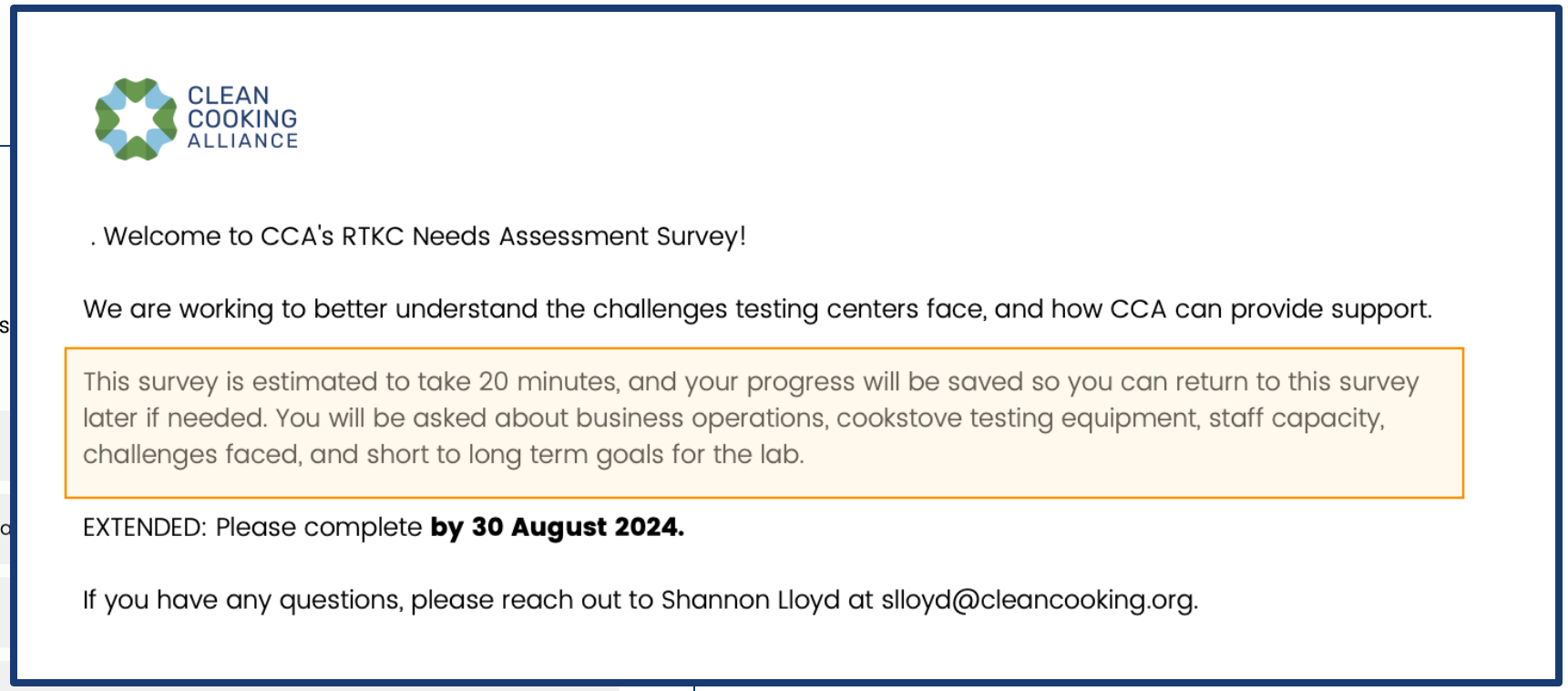
26 January 2025

Introduction

CCA and Partners undertook a Needs Assessment Survey to better understand the challenges each lab individually and collectively face.

How?





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Breakdown of Respondents

21 Labs Responded

Response Rate: 64%

12	Sub-Saharan Africa
5	Asia
3	Latin and South America
1	USA

57% have an active relationship with CCA (RR participant, workshop, other)

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Synthesis of Findings

Headline:
Skilled staff are employed by the labs, but lack on the job training and the equipment needed to perform job functions.

This, plus unclear career trajectory and fluctuating testing demand, leads to staff turnover, and a turnover of institutional knowledge.

Regarding lab function, diversifying services are helping pad times of low demand (which seem pervasive), but lack of equipment poses additional financial challenges.

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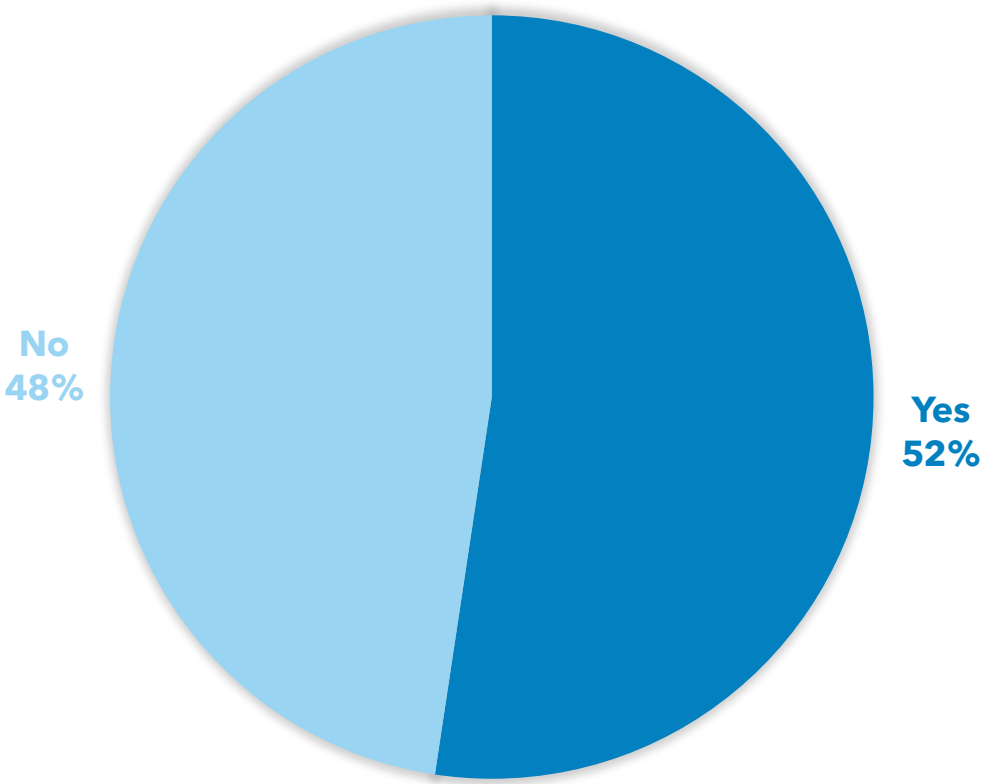
Highlight of Findings:

More training is needed

Has staff turnover been a challenge at your lab? *(21)*



Possible Reasons:

- Fluctuating demand (5)
- Non-competitive wages (2)
- Lack of capacity development (2)
- Limited opp. for growth, lack of clean expectations/goals (2)
- Job satisfaction (1)
- Limited recruiting pool (1)
- Short term appointment (1)

Measures to Address Turnover:

- Training / Capacity building (4)
- Better vetting of applicants (2)
- Diversifying activities (2)
- Establish clear career paths (1)
- Better knowledge management and documentation (ie manuals) (1)
- Recruit more staff when new projects arise (1)
- Pursue national funding (1)

What (if any) additional training is needed in your lab? *(21)*

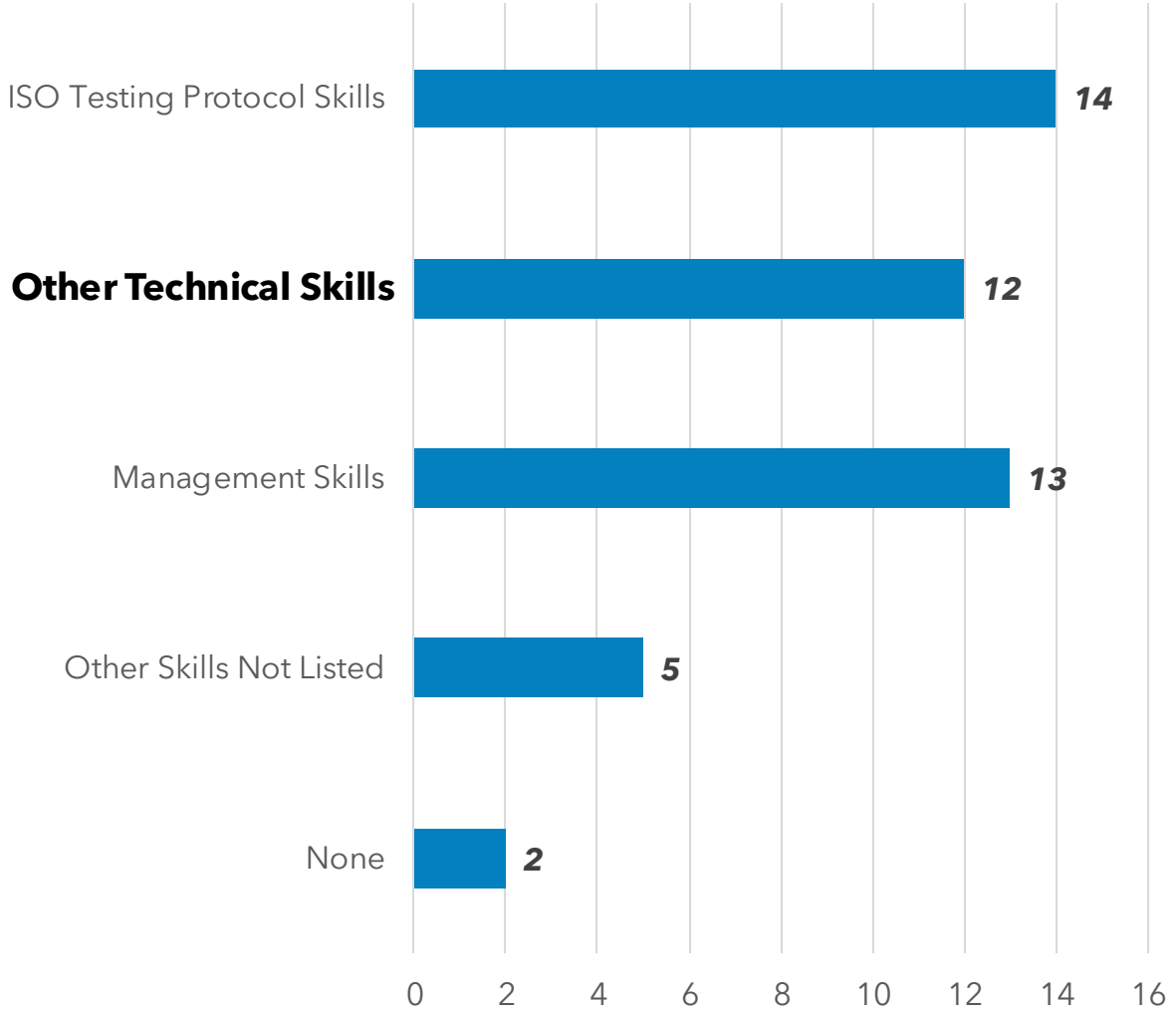
Training on equipment maintenance (4) & calibration (6)

Determine precision of a test method (1)

Spreadsheet application development (1)

KPT, testing institutional stove (1)

Emissions (black carbon, methane, VOCs, etc.) (1)



Biggest Challenges Faced...

Conducting cookstove testing

- **Lack of / difficulty with equipment (5)**
- **Capacity / Recruiting and training highly qualified staff (4)**
- **Calibration (4)**
- Limited financial resources to buy new equipment & maintain existing equipment (2)
- Lack of financial resources for staff (2)
- Developing robust sensors and data acquisition equipment by eliminating erroneous "noise" in certain readings
- Repetition of high/medium/low power levels

Business Operations

- **Low customer levels (5)**
- **Unpredictable cash flow (3),** short contracts (1-3 stoves) coupled with cost management
- Limited financial resources to invest in new equipment (2)
- Can't meet international standards
- Training of technicians
- Scheduling high volume periods of testing due to equipment (only 2 hoods)
- Competition from other labs b/c of cost difference
- Need more business promotion experience

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Highlight of Findings:

Short to Long Term Goals

Objective, Priorities, and Goals

Short term objectives, 2-3 years

- **Improve lab equipment (8);** Find local source to calibrate sensor box
- Improve training process to reduce errors (3)
- Offer trainings and short course (3); Design training handbook
- Diversify/expand services (3)
- Help implement national energy policy (2)
- Meet international standards (2); work to be inline with other labs around the world (2)
- Ensure that improved stoves are operated in accordance with the standard requirements (2)
- Engage in joint research with universities; offer additional research services
- Support energy planning and decision-making for govts and orgs
- Attract and maintain as many customers as possible
- Emission testing at national level

Objective, Priorities, and Goals

Long term goals or aspirations

- **To be a reference lab at the African level (4); top lab in country (6);** carry out tests in all parts of the country
- **Top tier research and development center (4)**
- Expand capacity and services (2)
- Become ISO/IEC 17025 compliant
- Establishing a World-Class Research and Testing Facility and also becoming a Leading Hub for Innovation
- Help implement National Energy Policy
- To support CCA globally

Objective, Priorities, and Goals

What is needed to achieve these long-term goals?

Much of what is described under the short-term goals!

- Capacity building and partnerships; additional trainings
- Retain skilled workers
- Management and financial plan
- Equipped facilities
- Become ISO/IEC17025 compliant
- Consistency of day-to-day work

It would be of interest to **100% of labs** if CCA were to provide business support to address and plan for operational challenges.

Examples achievable short-term:

- **Staff training / Capacity development (6)**
- Equipment support (4)
- Drafting a business plan (4)
- Identifying alternate funding sources (3)
- Process optimizations, strategic planning (2)

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Next Steps...

A lack of trained staff is a central theme in the findings:

- Challenge – Completing Testing Requests
- Staff Turnover
- Barrier to meeting demand
- Barrier to diversifying services

What is the best delivery method for additional training?

Current Action Plan – Online Course Development

- CCA in collaboration with partners at ISO, WHO, and US EPA
- The online course would be hosted on an online platform provider, like WHO Academy or ISO's Platform.

- Timeline: The team is currently requesting the necessary approvals through ISO, and planning content. This is expected to take 12-18 months.

- Who can provide input? **YOU!**

Course Structure

Introductory Modules

Delivery: Guided lectures, background readings, quizzes

- Clean cooking in addressing health & env. challenges
- The role of lab testing
- What lab testing can & cannot tell us
- Overview of ISO testing for efficiency, emissions, safety

Step-by-Step Videos

Delivery: Video tutorials, practice exercises

- Setting up the laboratory
- Procedures for efficiency, emissions, and safety tests
- Managing challenges and troubleshooting common issues

Data Quality and Application

Delivery: Sample datasets, real-world examples, discussion forums

- Data collection, validation, and documentation
- The carbon balance method
- How to analyze & report results
- Case studies on how lab testing informs policy & tech. design

Thank you !

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