

# Innovative Capacity Strengthening for A Resilient Future in the Global South.

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**Abstract**— This synthesis examined how capacity strengthening (CS) for climate adaptation and resilience has been implemented across the Global South through 17 Climate Adaptation and Resilience (CLARE) Program supported initiatives and targeted activities delivered by the CLARE Capacity Strengthening Hub. Using research for impact lens and a case study approach, the study drew on internal reports, learning briefs, evaluation summaries, and facilitator reflections. The data was analysed thematically and descriptively to examine how capacity efforts were designed, delivered, and targeted. The findings indicate that CS initiatives tackled technical, relational, and systemic capacity areas, employing various delivery methods. Virtual formats were predominant, followed by in-person workshops and customized advisory support. The primary audience consisted of researchers, especially those in early and mid-career stages, although program leads and senior experts were also involved. Key themes that received the most focus included research-to-policy engagement, gender equity and inclusion, collaborative partnerships, and innovation labs. While the initiatives demonstrated strong commitment to co-production and inclusive facilitation, engagement with grassroots actors and more complex, intersecting dimensions of equity were less prominent. The analysis provides a results-driven view of how adaptation and resilience capacity has been strengthened through CLARE-supported initiatives and offers practical insights to guide future investment and program design in climate resilience across the Global South.

**Keywords:** capacity strengthening, climate resilience, climate adaptation, Global South, co-production, gender inclusion, knowledge brokering, Monitoring Evaluation and Learning.

## 1 Introduction

Capacity strengthening (CS) is often overlooked in the global climate responses, yet in the Global South, CS is central for effective, equitable and locally led adaptation. As climate threats intensify, CS forms the foundation for generating context-relevant knowledge and evidence, informing responsive policy design, and enabling communities to define context-specific adaptation pathways (Phuong et al., 2018); (Salvador & Sancho, 2023). In regions where climate impacts are compounded by

poverty, governance challenges, and limited resources, CS strengthens resilience, informs decision-making, and advances climate justice (Asensio et al., 2022).

The urgency of capacity strengthening is reinforced by the increasing frequency and intensity of climate events in the Global South. These include natural disasters (prolonged droughts, heavy rainfall, flooding, and heat waves), which add pressure to already fragile social, political and economic systems

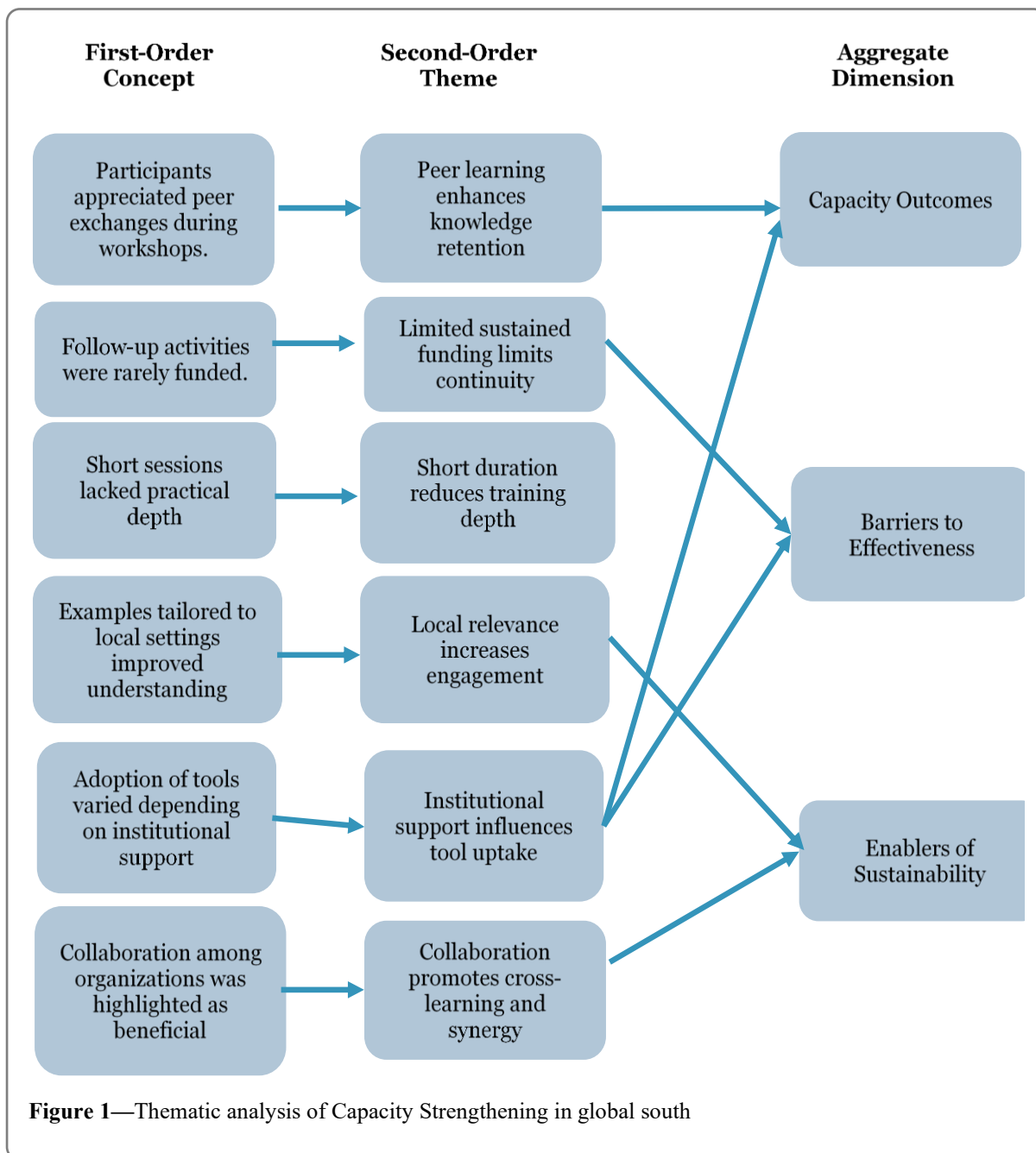
(Weiskopf et al., 2021). Such events increase pre-existing challenges related to poverty, inadequate infrastructure, and limited knowledge transfer, retention and governance capacity, thereby constraining adaptive responses (Martin et al., 2022). Although the Global South contributes relatively little to global greenhouse gas emissions, it faces a significant share of climate impacts, raising persistent concerns about equity, responsibility, and support in global adaptation and resilience governance (Ayanlade et al., 2022).

The growing concern about the rising impacts of climate change and the unequal burden placed on the Global South has led global and regional leaders to start recognizing the importance of building stronger local capacity ultimately contributing to southern leadership. This is reflected in global policy frameworks, where the United Nations Framework Convention on Climate Change (UNFCCC) and its Conference of the Parties (COP) processes recognize CS at different levels, groups and ways as crucial (UNFCCC, 2015). Article 11 of the Paris Agreement specifically calls for iterative, gender-responsive capacity-building. In parallel, regional frameworks, such as the African Union's Agenda 2063, advocate for integrating climate goals with broader development agendas (African Union Commission, 2020). Recent instruments, initiatives and studies have also highlighted the value of locally driven adaptation efforts and the need to embed capacity strengthening within national and regional climate strategies (Malik & Ford, 2024). During COP29, African Union leaders underscored this vision by declaring, "The Climate Agenda is our Development Agenda."

The Climate Adaptation and Resilience (CLARE) programme, funded by the United

Kingdom (UK) Foreign, Commonwealth & Development Office (FCDO) and Canada's International Development Research Centre (IDRC), aims to build socially inclusive and sustainable resilience across Africa and Asia through long-term capacity development (Michael Boule, 2020). Its portfolio covers themes such as climate risk assessment, disaster preparedness, and gender equity, reflected in operations of the 35 projects in the programme. To address capacity gaps across research, policy, and practice, the Capacity Strengthening (CS) Hub, co-led by the African Centre for Technology Studies and PlanAdapt, was established to support capacity strengthening activities within CLARE programme, to identify gaps and opportunities to inform future project design, and to track and communicate CLARE's overall progress on capacity development. The Hub plays a central role in embedding capacity strengthening as a sustained and integrated element of climate adaptation work.

This paper uses documented experiences from the CS Hub to explore how capacity strengthening contributes to lasting and inclusive responses to climate change in the Global South. The analysis assesses the current state of CS across the region, identifies key systemic challenges that limit its effectiveness, and outlines practical, inclusive strategies for strengthening capacity among researchers, practitioners, institutions, policymakers, and communities. The study applies a research-for-impact lens to examine how CS initiatives contribute to co-creation, support effective knowledge brokering, and enhance equitable multi-stakeholder engagement. By synthesizing these insights, the paper serves as a resource to embed learning, participation, and long-term



impact of climate adaptation efforts in the Global South over time.

## 2 Material and Methods

The study was conducted using a Research for Impact framework, highlighting the importance of evidence in shaping policy and practice, facilitating local action, and enhancing learning within adaptation systems in the Global South.

### 2.1 Research Design

A case study methodology was employed to analyze the capacity strengthening initiatives carried out under the Climate Adaptation and Resilience (CLARE) programme through the implementation of the Capacity Strengthening Hub. The research utilized secondary data, including internal reports, learning briefs, summary records of workshops, reflections

**Table 1**—Coding framework and analysis logic applied in the synthesis.

Stage of Analysis	Description	Example Application
Data Collection	Secondary materials reviewed, including reports, learning briefs, facilitator reflections, evaluation summaries, and survey data.	Review of Knowledge Brokering Workshop report, project-level learning briefs.
First-Order Coding	Inductive coding of raw text to identify recurring ideas or statements.	Peer exchanges were valued by participants coded as <i>peer learning</i> .
Second-Order Theme Building	Clustering of first-order codes into broader themes capturing patterns across initiatives.	<i>Peer learning, collaboration, local relevance</i> grouped under <i>knowledge sharing and co-production</i> .
Aggregate Dimension Development	Higher-level analytical categories reflecting systemic areas of capacity strengthening.	<i>Knowledge sharing and co-production</i> > Capacity Outcomes.
Integration with Quantitative Data	Descriptive statistics used to complement thematic insights.	Frequency counts of target audiences and delivery modalities.
Synthesis	Triangulation of qualitative and quantitative findings into a consolidated framework.	Linking themes of facilitation and inclusion with survey data on workshop outcomes.

**Table 2**—Capacity Strengthening Activities Coordinated by the CLARE CS Hub

Category	Virtual Modalities	In-Person Modalities
No. of Modalities	8	3
Format	Online sessions, working groups, one-on-one advisories, remote funds administration	Immersive workshops, trainings, and schools in specific African cities
Key Strengths	- Broad accessibility - Cost-effective - Ongoing coordination - Peer learning across regions	- Deep engagement - Trust-building - Experiential learning
Audience Focus	Project leads, CS focal points, researchers, facilitators, policy actors	ECRs, project staff, mid-career/senior researchers
Common Themes	- Labs innovation - Partnerships - MEL - Research-policy interface - GEI support	- Research uptake - Climate resilience - Gender inclusion

from facilitators, monitoring and evaluation documents, as well as published and grey literature. These materials were chosen to investigate the methods of shared learning, co-produced knowledge, and inclusive facilitation strategies utilized in varied contexts.

## 2.2 Data Analysis.

The qualitative information, was analyzed thematically using inductive coding to pinpoint recurring themes related to capacity strengthening (Figure 2). This approach revealed patterns concerning inclusion, institutional learning, knowledge co-production,

and adaptive practices. Simultaneously, secondary quantitative data gathered from project-level surveys and activity summaries were analyzed descriptively to highlight trends in tool usage, participation, and the challenges reported across various contexts. The insights obtained from both qualitative and quantitative data were then combined to create a comprehensive understanding of capacity strengthening practices and lessons learned in relation to climate adaptation and resilience efforts in the Global South.

## 2.3 Thematic Analysis Diagram – Capacity Strengthening (CS Hub)

Figure 1 illustrates the thematic analysis diagram using inductive coding pinpointing the capacity strengthening concepts, them and dimension.

## 2.4 Document review process

This study analyzed 17 initiatives (Table 9) related to adaptation and resilience supported by CLARE and 11 (Table 10) capacity strengthening activities carried out by the CLARE Capacity Strengthening (CS) Hub. The initiatives were assessed to determine their main capacity focus, geographic reach, target groups, and alignment with relevant themes. In a separate analysis, the activities of the CS Hub were examined to comprehend how capacity strengthening was implemented through different delivery methods, stakeholder interactions, and supportive frameworks.

By utilizing qualitative coding and frequency counts, the components of each

activity, such as capacity domains, audience categories, and thematic focuses, were broken down and quantified individually, accounting for any overlaps. This method provided a precise depiction of how often certain strategies and priorities were represented within the Hub's portfolio of activities.

The goal of the document review was to move beyond strategic intentions and provide an evidence-based overview of the CS Hub's operational emphasis, what capacities were most frequently supported, how activities were delivered, and who was engaged across the adaptation and resilience landscape.

## 2.5 Selection criteria

The evidence base for this synthesis was identified through a structured review of the CLARE programme portfolio. All 35 CLARE-funded projects and the full range of Capacity Strengthening (CS) Hub activities were first

**Table 3**—Comparative Summary of CLARE-Supported Capacity Strengthening Initiatives.

Category	Key Findings	Examples
Geographic Spread	- Africa-focused (13 initiatives) - Asia (6) - SIDS (3) - Pan-regional collaborations (2)	PASSAGE (Horn of Africa), SURF-IT (Asia), RECOVER (SIDS), PALM-TREES (Pan-Africa)
Capacity Focus	- Technical: 13 initiatives - Relational: 9 initiatives - Systemic: 7 initiatives - multi-dimensional capacity emphasized in key projects	CLARE CS Hub (all 3), PASSAGE (Technical + Systemic), ECONOGENESIS (Relational)
Target Audience	- Policymakers & Gov't: 9 - Researchers & ECRs: 6 - Local communities, farmers, pastoralists: 10 - Disaster managers & emergency responders: 3	PASSAGE, ECONOGENESIS, WOSFER, REPRESA, CREWS
Modalities Used	- Forecasting & data systems - Co-design & participatory tools - Training, mentoring, workshops - Digital tools & scenario planning	INFLOW (real-time forecasting), SURF-IT (community knowledge), BIMA (insurance design), CLARITY (T-Labs)
Themes Covered	- Disaster Risk/Preparedness (7) - Water Security & Floods (3) - Urban & Coastal Resilience (4) - Gender & Inclusion (3) - Marine (1)	SURF-IT, BASIN, INACCT, ECONOGENESIS, ClimateREEFS
Capacity Building Trends	- Strong trend toward systemic change & learning networks - Inclusion of gender, ECRs & community voices - Integrated modalities = more robust results	PALM-TREES, CLARE CS Hub, SUCCESS, RECOVER

mapped against the programme’s three capacity domains, technical, relational, and systemic. They were then screened using the same criteria: the presence of an explicit capacity strengthening component, implementation during 2021–2024, and the availability of adequate documentation such as reports, learning briefs, facilitator reflections, or evaluation summaries. Applying these criteria, the review retained 17 multi-country research consortia and 11 CS Hub activities. Together, these form a coherent and connected evidence base that captures both initiative-level capacity strengthening and the cross-cutting mechanisms provided by the Hub to reinforce them.

### 3 Results

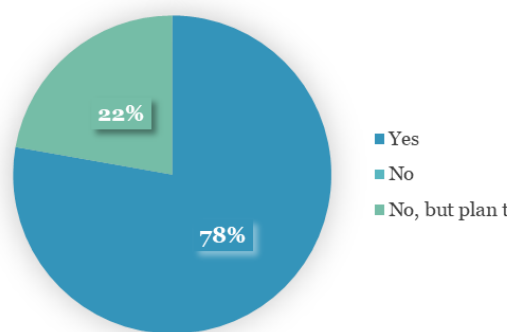
#### 3.1 Overview of CLARE Adaptation and Resilience Initiatives

The analysis identified 34 country-based project components under the CLARE programme. Among these, 17 represent formally awarded multi-country research consortia that were involved in capacity strengthening efforts in the context of climate adaptation and resilience in Africa, Asia, and Small Island Developing States (SIDS). These initiatives varied in geographic scope, thematic emphasis, delivery modality, target audiences, and capacity focus, ranging across technical, relational, and

**Table 4**—Delivery modalities and their frequency across initiatives

Modality	Percentage
Virtual sessions / meetings	55.0
In-person workshop	18.2
In-person immersive training	9.1
Peer learning network	9.1
Advisory + funding support	9.1
One-on-one advisory	9.1
Proposal review and support	9.1

**Have you applied any knowledge or practices from the workshop in your work?**  
18 responses



**Figure 2**—Application of Workshop Knowledge in Practice

systemic domains. Table 1 presents these adaptation and resilience initiatives, showing their country coverage, capacity domains, target stakeholders, modes of delivery, and thematic areas.

#### 3.2 Overview of CLARE CS Hub-Led Capacity Strengthening Activities

Table 2 presents the capacity strengthening activities facilitated by the CLARE CS Hub, showing their delivery format, target audiences, capacity focus, and thematic alignment with adaptation and resilience goals. The activities were implemented through both in-person and virtual formats, including workshops, peer learning sessions, coordination meetings, proposal reviews, and tailored advisory engagements. These efforts targeted a wide range of stakeholders such as early career and senior researchers, project teams, CS focal points, facilitators, and policymakers (Table 3). The activities addressed different capacity domains, technical, relational, and systemic, and covered thematic areas including gender equity, research uptake, transdisciplinary collaboration,

partnership development, innovation labs, and research-policy engagement.

**Table 5**—Capacity focus areas and their frequency

Capacity Focus Area	Percentage
Stakeholder engagement / co-creation / facilitation	26.7
Advisory, needs assessment, capacity co-creation	20
Gender-responsive design / inclusion	13.3
Knowledge translation / research uptake	6.7
Climate resilience / co-production	6.7
Equitable partnership collaboration	6.7
Research-to-policy influence	6.7
MEL and strategy alignment	6.7
Labs methodology	6.7

### 3.3 Delivery Modalities

Across the eleven CLARE CS Hub activities reviewed, virtual sessions and meetings were the most frequently used delivery format, accounting for 55% of all activities. In-person workshops appeared in 18.2% of cases, while immersive in-person training was used in 9.1%. Other delivery modalities included peer learning networks (9%), advisory and funding support mechanisms (9.1%), one-on-one advisory engagements (9%), and proposal review processes (9.1%). As shown in Table 4. Early-career researchers engaged through regional activities in East and Southern Africa reported increased skills and professional confidence.

### 3.4 Capacity Focus Areas

Relational capacity was the most frequently supported domain, featuring in 81.8% of the CS Hub activities. Technical and systemic capacities were each reflected in 54.5% of the activities as shown in Table 6. These findings

**Table 6**—Capacity focus area

Capacity Focus	Percentage
Relational	81.8
Technical	54.5
Systemic	54.5

are based on a capacity analysis framework that distinguishes three interrelated domains: technical capacity (the development of practical knowledge, skills, and tools for climate adaptation), relational capacity (the ability to collaborate, build trust, and engage diverse stakeholders), and systemic capacity (the ability to influence institutions, governance structures, and broader systems that shape adaptation outcomes).

### 3.5 Detailed Capacity Focus Areas

Nine distinct capacity strengthening focus areas were identified as shown in Table 5 across the eleven CS Hub activities. Stakeholder engagement, co-creation, and facilitation were the most common, accounting for 25.0% of all

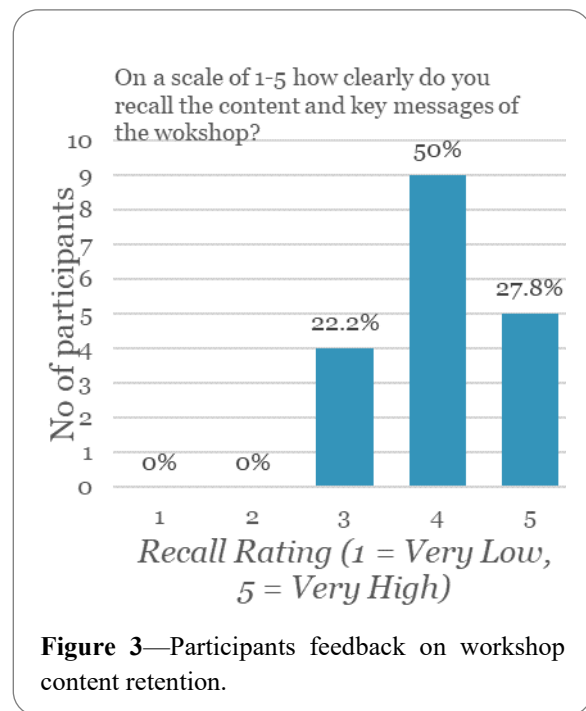
**Table 7**—Target audiences and participation frequency

Audience	Frequency	Percent
Researchers (general)	5	45.5
CS focal points	4	36.4
Project teams / leads	3	27.3
Facilitators	2	18.2
GEI focal points / staff	2	18.2
Early Career Researchers (ECRs)	1	9.1
Senior researchers	1	9.1
Policymakers	1	9.1

occurrences. Advisory support, needs assessment, and co-creation of capacity appeared in 18.8% of cases, followed by gender-responsive design and inclusion at 12.5%. The remaining areas each appeared in 6.3% of the activities: knowledge translation and research uptake, climate resilience and co-production, equitable partnership collaboration, research-to-policy influence, MEL and strategy alignment, and labs methodology.

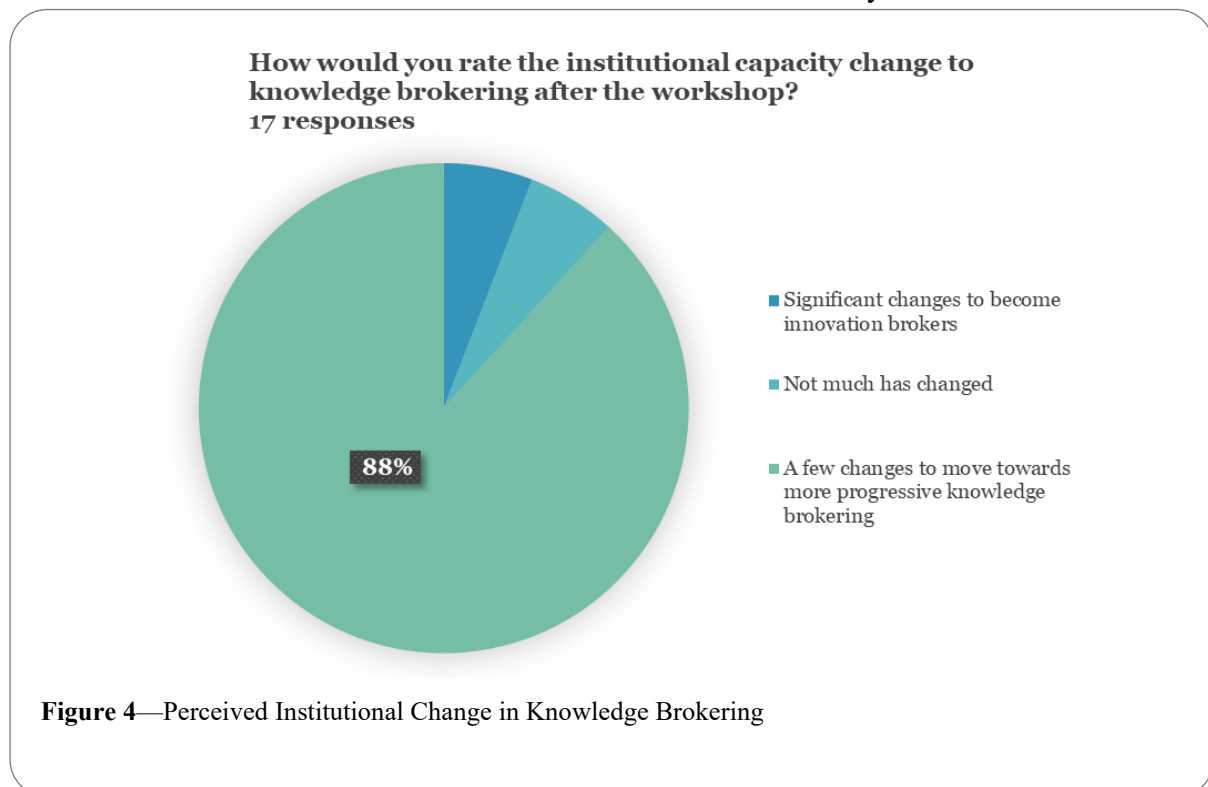
A follow-up survey of 14 CLARE projects found that tools such as stakeholder mapping, co-creation frameworks, the 'All Hands-on Deck' game, the World Café, and the communications wheel were applied to support project design, stakeholder engagement, and communication practices.

Feedback from participants in the knowledge brokering sessions indicated improvements in institutional practices as shown in Figure 4. These included more



**Figure 3**—Participants feedback on workshop content retention.

systematic stakeholder engagement, improved communication of research outputs, and increased use of participatory planning processes within teams. Participants were also asked whether they had observed noticeable



**Figure 4**—Perceived Institutional Change in Knowledge Brokering

changes in the way they run or facilitate co-creation sessions (Figure 5). Responses indicated that most had adapted their facilitation style, incorporated more participatory tools, and reported increased confidence in leading inclusive, collaborative processes.

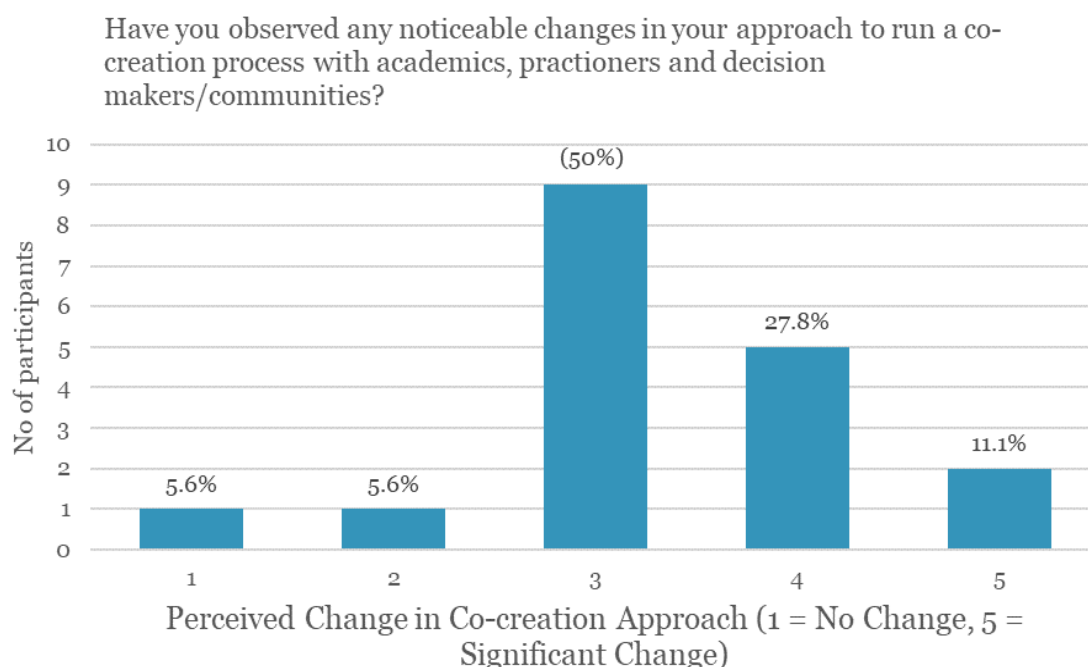
**Table 8**—Thematic emphasis and distribution across initiatives

Theme	Percentage
Research-policy engagement	27.3
Gender equity / inclusion	18.2
Innovation labs	18.2
Collaboration / partnerships	18.2
Flexible / tailored support	18.2
Transdisciplinary research	9.1
Programme learning / delivery	9.1

Researchers appeared most frequently, featuring in 45.5% of all activities. Capacity Strengthening (CS) focal points were involved in 36.4% of cases, while project teams or leads appeared in 27.3%. GEI focal points and facilitators were each targeted in 18.2% of activities. Early-career researchers, senior researchers, and policymakers each appeared in 9.1% of the total activities (Table 7).

### 3.7 Thematic priorities

Research-policy engagement was the most common theme, appearing in 27.3% of activities as indicated in Table 8. Gender equity and inclusion, innovation labs, collaboration and partnerships, and flexible or tailored support each featured in 18.2% of activities. Transdisciplinary research and programme learning and delivery were each represented in 9.1% of the total activities.



**Figure 5**—Participant Ratings of Change in Co-creation Approach

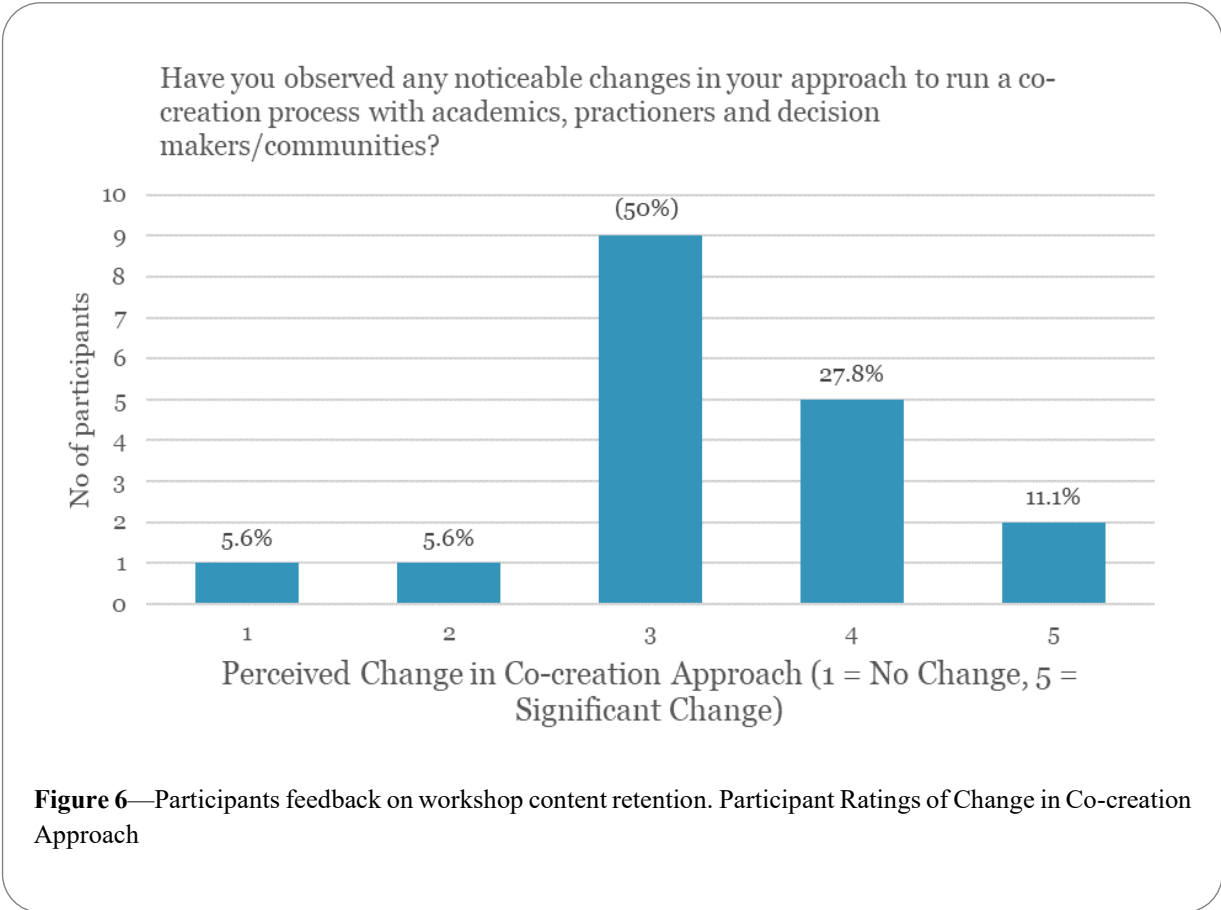
### 3.6 Target Audiences

## 4 Discussion

#### 4.1 Blended delivery expanded access while shaping participation patterns.

The CS Hub utilized a blended approach,

(2022), online formats frequently diminish chances for informal discussions, trust-building, and interactive learning, essential components



merging online and face-to-face formats to enhance capacity strengthening across various contexts. Online engagement was predominantly used, especially for peer learning, coordination meetings, and advisory discussions. This approach increased accessibility and outreach, allowing participation from regions across Africa and Asia. (Kiguli-Malwadde et al., 2023), indicates that virtual learning environments can improve access, particularly for professionals in under-resourced areas or those facing travel limitations.

Nonetheless, the efficiency of virtual engagement in yielding deeper learning outcomes is debated. According to Lewy et al.

for adaptation practices. (Malik & Ford, 2024) similarly noted that while online formats aided knowledge acquisition, face-to-face settings resulted in greater skill application and learner confidence.

In-person sessions, such as the Seasonal School and Knowledge Brokering Workshop, created opportunities for experiential learning and intensive facilitation practice. Participants interacted with various tools, received immediate feedback, and established professional networks in ways online platforms struggled to achieve (Dincă et al., 2023). The combination of modalities influenced participation patterns: early- and mid-career professionals were more active in online

channels, while senior leaders engaged more effectively in in-person forums. This supports the argument that high-level engagement often depends on face-to-face interactions to establish credibility and commitment (Tanner, 2017).

#### **4.2 Practitioner-focused strategies strengthened delivery alongside opportunities for greater leadership engagement**

The initiatives from the CS Hub focused on enhancing the skills of professionals directly involved in delivering adaptation programming. Participants primarily consisted of early to mid-career practitioners, highlighting a deliberate effort to develop adaptive competencies among those responsible for everyday implementation. Engaging these operational personnel aligns with the recommendations by Ofori and Mensah (2021), who emphasize the importance of equipping operational personnel in regions with limited institutional frameworks.

Various initiatives, such as the Seasonal School and the Knowledge Brokering Workshop, specifically aimed at early-career researchers, mid-career researchers and senior career researchers. These programs offered participants experiential learning opportunities that combined facilitation techniques, stakeholder engagement, and reflective practices. (Dincă et al., 2023), emphasize the significance of such immersive settings in aiding emerging professionals to maneuver through complex transdisciplinary environments. Likewise (Paterson et al., 2017) contend that adaptive leadership is cultivated not only through technical expertise but also through collaborative processes that enhance relationships and close institutional gaps. Peer learning and advisory support enabled mid-career professionals, often bridging high-level policy and ground-level practice, to share challenges and improve facilitation across

contexts ((Nhamo et al., 2024); (Butcher et al., 2021)). Senior decision-makers and MEL specialists were less engaged, particularly in in-person workshops, indicating an area for strengthening. Institutionalization requires engaging actors who shape budgets and policy (Tanner et al. (2015), and scaling adaptation tools depends on senior-level buy-in (Ford et al., 2016). The CS Hub successfully advanced practitioner capacity, while deeper involvement of institutional leaders remains an opportunity for sustaining outcomes.

#### **4.3 Relational and co-creative capacities emerged as central for adaptive practice**

The initiatives aimed at strengthening capacity on practical, relational, and collaborative abilities. Among the distinct capacity themes identified, stakeholder engagement, facilitation, and co-creation were the most frequently mentioned across various initiatives. These areas play a crucial role in promoting locally led adaptation, as they empower practitioners to engage communities effectively, foster inclusive partnerships, and handle the complexities of climate decision-making.

The shift from technical expertise toward participatory processes was reinforced by laboratories, stakeholder mapping, and simulation tools. Co-production enhances legitimacy when power dynamics are acknowledged (Verwoerd et al., 2023). Tools such as the *All Hands on Deck* game, *World Café*, and communications wheel were adopted into institutional planning, exemplifying “practice-based embedding,” by routines (Vincent et al. 2022, where learning becomes part of organizational. Facilitation training, particularly through the Seasonal School and Knowledge Brokering Workshop, boosted participant confidence in managing group dynamics and stakeholder priorities. Facilitation

was framed not only as a skill but as a leadership capacity central to adaptation (Manley, 2024).

Gender equity and inclusion were integrated into design processes rather than treated as add-ons, reflecting an important shift toward mainstreaming equity across capacity strengthening. Inclusion should be fundamental throughout adaptation phases, with GEI focal points engaged in at least two initiatives and design tools adapted to cultural contexts supports (Ravula et al., 2024). At the same time, intersectionality, covering disability, youth, and Indigenous knowledge, was less systematically addressed, signaling scope for expanded inclusivity (Eriksen et al., 2015). Acknowledging this limitation is important, as adaptation practices are more effective and legitimate when they reflect diverse lived experiences. Future initiatives could intentionally integrate disability-inclusive approaches, co-create with Indigenous knowledge holders, and support youth leadership pathways, embedding these perspectives within facilitation, planning, and evaluation processes. Such integration would deepen the balance of equity within the CS Hub and ensure that capacity strengthening reflects the intersecting realities of those most affected by climate risk (Vincent et al., 2022).

#### **4.4 Innovation and equity were advanced through participatory approaches**

The Hub promoted innovation through labs and co-creation spaces that encouraged experimentation with facilitation tools and stakeholder engagement. These participatory environments reinforced adaptive capacity as practice-based learning rather than one-off training (Jones, 2018); Nourin Ali, 2023). Gender equity consistently emerged as both a thematic priority and a cross-cutting principle. Inclusive facilitation and gender-responsive

programming demonstrated progress in embedding equity within capacity processes (Segnon et al., 2024). While gender was strongly addressed, attention to other intersecting identities such as disability, youth, and indigeneity remained less explicit, presenting an opportunity for deepening intersectional practice.

#### **4.5 Policy engagement and MEL represent areas for future strengthening**

Research-to-policy engagement was a recurring theme, with several initiatives supporting knowledge brokering and influence strategies that aimed to strengthen the link between evidence and decision-making. These activities highlighted the importance of sustained engagement with policy actors to embed adaptation knowledge into governance processes. Yet the analysis shows that such engagement was not consistently scaled across initiatives, indicating an area for continued investment. Long-term partnerships, rather than one-off dialogues, will be essential to ensure that adaptation research informs budgets, policies, and institutional planning in a durable way (Vincent et al., 2018).

Monitoring, Evaluation, and Learning (MEL) similarly emerged as an underdeveloped area across the portfolio. While some initiatives introduced templates and coordination sessions, MEL often remained technical and reporting-oriented (Bours et al., 2014; Konrad et al., 2021). Repositioning MEL as a transformative process would allow it to support reflexivity, adaptive management, and institutional learning. This means embedding MEL at the design stage, co-defining indicators with stakeholders, and using learning loops during implementation to adjust strategies in real time. Instead of measuring only participation or outputs, MEL can capture shifts in practice,

institutional uptake of co-creation tools, and the inclusion of marginalized groups. Framed in this way, MEL becomes an enabling mechanism for scaling adaptive practices and ensuring that policy engagement efforts translate into systemic impact.

## 5 Conclusion and Recommendation

This synthesis reveals a meaningful shift in how capacity strengthening (CS) is approached in climate adaptation across the Global South. Instead of relying on isolated technical trainings, the 17 CLARE initiatives and the CS Hub adopted participatory, relational, and practice-based methods. By embedding facilitation, co-creation, and stakeholder engagement within real project contexts, they fostered hands-on learning and strengthened adaptive practices, particularly among early- and mid-career professionals. However, gaps in the engagement of senior decision-makers, marginalized groups, and MEL specialists point to limitations in institutional reach and long-term sustainability. Blended formats, peer learning, and innovation labs have laid a strong foundation, however, achieving long-term impact will require more sustained, inclusive, and institutionally embedded investments.

Looking ahead, four interconnected pillars can guide more effective and transformative CS: sustainability, collaboration, inclusion, and innovation. Sustainability calls for a shift from short-term donor cycles toward regionally anchored, long-term funding and embedded knowledge brokering. Collaboration across government, academia, civil society, and communities fosters co-designed solutions and shared ownership. Inclusion must be built into every stage, from design to evaluation, to reflect diverse lived experiences and strengthen MEL systems. Finally, innovation through

storytelling, arts-based methods, and transdisciplinary research can make complex knowledge more accessible and broaden participation. Together, these pillars offer a coherent roadmap for funders, practitioners, and policymakers committed to equitable, locally led, and durable climate adaptation.

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## Author Contributions

Conceptualization, Methodology: UW, MK, JO, Data curation: UW, JO, MK, Writing original draft preparation: UW, MK, Visualization, Investigation: UW, MK, Supervision: JO, MK. Reviewing and editing (final version for publication): UW, MK and JO.

## Conflict of interest

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the work reported in this paper.

## Disclaimer

The opinions and interpretations presented in this article are those of the authors and do not necessarily represent the official stance or guidelines of the funding agencies or affiliated institutions.

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## Appendix

**Table 9**—CLARE Adaptation and Resilience Initiatives Across the Global South

No	Initiative Name	Country / Region	Capacity Focus	Audience	Modality	Theme
1	PASSAGE	Ethiopia, Kenya, Somalia, South Sudan, Uganda	Technical, Systemic	Pastoralists, IGAD, policymakers	Regional forecasting, multi-actor learning	Risk-informed early action
2	BASIN	Burkina Faso, Malawi, Tanzania	Relational, Technical	Water champions, gov't actors	Behavioural change, inclusive engagement	Water security & behaviour
3	SURF-IT	Bangladesh, Nepal	Technical	Researchers, communities	Forecasting, community knowledge integration	Disaster risk reduction
4	CLARITY	Tanzania, Niger, Nigeria	Technical, Relational	Local co-researchers, farmers	Para-hydrologists, T-Labs	Dryland resilience
5	ECONOGENESIS	Nepal, Rwanda, Zanzibar	Relational	ECRs, gender analysts	GESI workshops, distributional analysis	Gender, distribution, inclusion
6	ClimateREEFS	Indonesia, Philippines	Technical	Fishers, marine scientists	Field ecology protocols, ECR mentorship	Marine adaptation & fisheries
7	RECOVER	Maldives, Mauritius, Fiji	Systemic	Policymakers, researchers	Regional peer learning, resilience planning	Coastal adaptation & planning
8	BIMA	Kenya (Tana River)	Technical	Farmers, insurers	Index-based insurance design	Livelihood resilience
9	WOSFER	Uganda	Relational, Technical	Women smallholders	Qualitative analysis, GEI trainings	Agriculture & women's resilience

No	Initiative Name	Country / Region	Capacity Focus	Audience	Modality	Theme
10	INACCT Resilience	Mozambique, South Africa	Relational	City planners, coastal communities	City-to-city learning, participatory tools	Inclusive urban planning
11	INFLOW	South Sudan, Sudan, Egypt	Technical, Systemic	Hydrologists, gov't	Real-time forecasting, dialogue	Flood management
12	PALM-TREES	Pan-Africa	Systemic	ECRs, policy actors	Capabilities-based CS, reflexivity	Extreme climate risks
13	REPRESA	Madagascar, Mozambique, Malawi	Systemic	Emergency responders	Early warning systems, disaster scenarios	Cyclone preparedness
14	REBUMAA	Ghana, Madagascar	Relational	Stakeholders, PhD students	Contingency planning, co-produced learning	Disaster readiness
15	RURBANISE	Nigeria, Philippines	Technical	Slum residents, urban planners	Digital CVCA tools, enumeration	Informal settlements
16	SUCCESS	Senegal, Niger, Bangladesh	Systemic	Migrants, planners	Co-design, mobility strategies	Migration as adaptation
17	CREWS	Multi-country (Africa)	Technical	Disaster managers	Early warning systems	Climate risk systems
18	CLARE CS Hub	CLARE portfolio countries (Africa, Asia, SIDS)	Technical, Relational, Systemic	Project teams, researchers, CS focal points, policy actors	Peer learning, workshops, advisory, funds, working groups	Cross-cutting capacity strengthening

**Table 10**—CLARE CS Hub Activities by Modality, Audience, Capacity Focus, and Theme

Modality	Held In	Format	Audience	Capacity Focus	Theme
Knowledge Brokering Workshop	Nairobi, Kenya	In-person workshop	Mid-career and senior researchers	Knowledge translation, stakeholder engagement	Research uptake, partnerships
GEI Workshop	Kigali (Rwanda), Nairobi (Kenya)	In-person workshop	Project staff, GEI focal points	Gender-responsive programming, inclusive facilitation	Gender & Inclusion (GEI)
Seasonal School	Dar es Salaam, Tanzania	Immersive in-person training	Early Career Researchers (ECRs)	Climate resilience, co-production, research-for-impact	Transdisciplinary research
Peer Learning: Equitable Partnerships	Virtual	Peer learning session	Project leads, CS focal points	Equitable partnership design and collaboration	Collaboration and partnerships
Peer Learning: Stakeholder Engagement & Labs	Virtual	Case exchange	Researchers, facilitators, community partners	Stakeholder analysis, co-creation, facilitation	Labs and local innovation

Modality	Held In	Format	Audience	Capacity Focus	Theme
Peer Learning: Policy Influencing	Virtual	Virtual session	Researchers, policymakers	Research-policy interface, influencing strategies	Research to policy
CS Working Group (6 sessions)	Virtual	Coordination meetings	CS focal points, programme leads	Internal coordination, strategy alignment, MEL	Programme learning and delivery
Bilateral Engagements with Projects	Virtual	One-on-one advisory	Project teams, CS focal points	CS needs assessment, engagement planning	Tailored project support
Responsive Fund	Virtual/Remote	Advisory + funding support	CLARE project teams	Research-for-impact design, capacity co-creation	Flexible CS support
GEI Fund Administration	Virtual	Proposal review and support	Projects focused on gender & inclusion	Gender equity, intersectionality	GEI
Labs Approaches Working Group	Virtual	Peer learning network	Researchers and lab implementers	Labs methodology, facilitation, co-creation	Innovation labs

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