

Cost and budget impact analysis of inclusive eye health approach to improve quality and equity in access to eye care services for people with disabilities in Kogi State, Nigeria



Executive summary

As part of the Disability Inclusive Development (DID) action, the task order 11 (TO11) has been implemented from December 2019 to September 2022, in Kogi state, Nigeria. The DID consortium aims at improving inclusion of people with disabilities in six countries over six years. The TO11 piloted an inclusive health approach to improve quality of access to eye health services for patients with disabilities in four health facilities, Ankpa, Idah, Okene and Kabba. Alongside the TO 11 activities, a retrospective economic evaluation has been conducted, recognising the importance of understanding the cost and the resources necessary to deliver these results.

Two analyses have been conducted. First, an analysis of actual TO11 costs, looking at how much it cost to implement the different project's activities and the cost per beneficiary. Secondly, using the project data and actual costs from the TO11, we estimated the cost of scaling-up in four scenarios.

The report shows that the total in-country incremental cost of the Inclusive Eye Health project in Kogi state, Nigeria amounted to £337,082. On average, project costs represented the largest share of expenditures (45%). Health facilities accessibility represented 29% of total expenditure which was the largest implementation activity cost given the high cost of renovation and building of inclusive infrastructure in the three facilities. Inclusion activities amounted to 11% of total expenditure. The study also reports a cost per beneficiary (direct and indirect beneficiaries) of £23 for the duration of the programme. However, it should be noted that the benefits to individuals will last beyond the programme duration as facilities' accessibility renovations will have longer-term effects, as will training to a lesser extent.

The rapid budget impact analysis estimated the required funding to replicate similar inclusion activities in four different scenarios: in Kogi West only, which would cover 7 facilities for £465,848; in Kogi Central for £2,220,682 covering 40 facilities; Kogi East for £578,988 covering 9 facilities; and all facilities of Kogi state, the cost would reach £3,391,099.

Given the scarcity of cost data on inclusive health delivery, we cannot compare our results, unit cost or cost per beneficiary with other external studies in similar contexts. However, the data gathered and computed would

allow for a better understanding of how costs are distributed which will help identify opportunities to improve the efficiency for future project implementation. Moreover, knowing the resources required for scaling up will help advocating for the integration of inclusive eye health service in regular health service delivery.

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Introduction

As part of the Disability Inclusive Development (DID) actions, the task order 11 (TO11) has been implemented from December 2019 to September 2022, in Kogi state, Nigeria. The DID consortium aims at improving inclusion of people with disabilities in six countries over six years. The TO11 piloted an inclusive health approach to improve quality of access to eye health services for patients with disabilities in four health facilities, Ankpa, Idah, Okene and Kabba. Through the three years of the project, a social behaviour change strategy has been developed and implemented. Accessibility of three facilities has been audited and recommended renovations conducted. A total of 1,555 women, men, girls and boys with disabilities accessed the four covered facilities. Moreover, training of the disabled people's organisations staff, facility and governmental officials have been trained on disability inclusion and gender equity.

Alongside the TO11's implementation objectives, a retrospective economic evaluation has been conducted. This study estimates and analyses the cost of improving access to eye health services for people with disabilities in Kogi state, Nigeria. Activity based accounting was performed and allow us to understand how actual expenditure were distributed and to estimate service delivery unit costs and main cost drivers.

Additionally, a rapid budget impact analysis (e.g. cost projection) of the activities with the health facilities (e.g. accessibility audits, infrastructure improvement and staff training) has been conducted, identifying potential efficiency savings, economies of scale and the resource required to scale-up pilot activities in public health facilities at the state level.

Methodology

Study design

The cost analysis covered project activities related to the two static facilities and two outreach centres in Kogi state, including relevant staff training (disabled people’s organisations (DPOs) members, government officials, facility staff), awareness raising, accessibility audit and work, etc. between January 2021 and September 2022. Using cash expenditure collection and desk review work, the actual cost of development and implementation of mainstreaming inclusion were analysed. Standard unit costs of inclusive eye health activities were estimated (e.g. excluding development expenditures) to project the cost of scaling-up Kogi state wide, in the form of a simplified budget impact analysis.

Perspective

A service provider perspective was adopted for studying the actual project costs. The incremental cost of mainstreaming inclusion in an existing eye care project was computed. All in-country financial expenditure incurring in Kogi State, by Sightsavers or its partners, and related to the pilot are included.

Opportunity costs are not included, i.e. in-kind donations or time spent by ministry or partner staff that were not charged to the project. International grant management costs were not included.

Data collection

All financial costs were centrally collected by Sightsavers' country offices in Nigeria. Output data were gathered from project country reports and discussion with project managers. Demographic data, health data, number of facilities, and all non-financial data needed for the cost projections were collected from reports, discussions with project managers and other relevant existing surveys.

Analysis

Analysis was carried out using Excel, and consists of two parts:

- Actual project costs analysis
 - Generating descriptive statistics for each cost activity as appropriate
 - Carrying out a cost composition analysis by activities and input categories (personnel, transportation, supplies, etc.). Identifying the main cost drivers of promoting equitable access to quality eye health services for women and men with disabilities by assessing inputs and cost for each activity against the total cost.
 - Summarizing output costs per level of observation i.e. average costs per facility, trainee etc.
 - Identifying standard unit cost for scaling-up.
- Budget impact analysis
 - Simplified scale-up model designed for Kogi state
 - Analyzing four scenarios

All TO11 expenditures were collected and allocated to specific activities and analyzed as summarized in table 3.

Table 1: Expenditures included and standard costs overview

| | |
|--|---|
| Planning and management All activities conducted for preparation, development, and management of project activities* | <ul style="list-style-type: none"> • Coordination and administration • Project management • SBCC development |
| Setup costs* Investment required at start of inclusion activities | <ul style="list-style-type: none"> • Start-up workshops • Capacity building • Training of trainers |
| Recurrent costs* Activities to be implemented on an annual basis | <ul style="list-style-type: none"> • Training facility staff, government officials and CHEWs • SBCC strategy implementation • Outreach screening campaigns • Evidence, monitoring and evaluation • Accessibility audit and work |
| Standard costs included in budget impact analysis scenarios | <ul style="list-style-type: none"> • Monitoring, • Project management • Planning and coordination • Start-up workshops • Capacity building • Training facility staff, government officials and CHEWs • SBCC strategy implementation • Outreach screening campaigns • Evidence, monitoring and evaluation • Accessibility audit and work |

* Based on review of financial transactions related to development and implementation of inclusive eye health activities

Actual project costs analysis

For the activity-based accounting of the inclusive eye health project in Kogi State, Nigeria, key activities were identified to allocate expense to:

- **Project management, development of strategies and coordination**

This category encompasses all expenditure related to the project management at country level. All expenditure related to project coordination, management, development of Social and Behavioural Change Communication strategy and inception/launch have been included.

- **Inclusion activities**

This activity covers four sub-activities:

- Capacity building costs mainly consisting of steering committee involving key stakeholders but also advocacy training for members of disabled people's organisation;
- Costs related to development and the implementation of social and behavioural change communication (SBCC) strategy, i.e. raising awareness on eye health services, and mitigate stigma and discrimination related to disability;
- The conduct of gender equity and disability inclusion training for community health extension workers (CHEWs), government officials and health facilities staff; and
- Implementation of SBCC strategy.

- **Health systems change activities**

Expenditures spent on participatory accessibility audits, interventions carried out to improve accessibility of selected health facilities, have been included. As well as activities such as health staff training development and its implementation.

- **Evidence generation, monitoring and evaluation**

This includes expenditures related to the monitoring of the project, and RAAB.

Table 2 summarises all costs included in each activity.

Table 2: Table of activities

| | |
|-------------------------------------|---|
| Project management and coordination | <ul style="list-style-type: none"> • Salaries, per diem and other personnel expenditures related to operational, management and coordination activities (including start-up workshops) • Supplies and other equipment attributable • Office expenses (e.g. rent, utility bills etc.) |
| Inclusion activities | <ul style="list-style-type: none"> • Financial cost related to the development of a SBCC strategy; • Community level interventions to address stigma and discrimination • All expenditures related to training project development; • Training project implementations • Advocacy training of OPDs |
| Health facilities accessibility | <ul style="list-style-type: none"> • Expenditure related to training activities (on accessibility auditing); • Accessibility audit and work (including renovations) • Training to health facility staff specifically (Sign language) |
| Evidence, Monitoring and evaluation | <p>Transportation, personnel, and all other expenditures covering:</p> <ul style="list-style-type: none"> • Monitoring, • Review meetings, • Disability data disaggregation, • RAAB, • QSAT, • Audits and all other shared activities |

Based on project outputs, activity unit costs were estimated.

Budget impact analysis

Using estimated unit costs and project experience, cost projections were carried out to estimate funding requirements for sustaining or expanding health systems change activities as part of existing eye health programmes in all public health facilities for four different scenarios (Table 3).

Table 3: Cost projection scenarios

| Scenarios | Local government areas | Local government areas still to cover |
|-------------------------|--|--|
| Kogi West | Kabba/Bunu , Ijumu, Mopa-Amuro, Yagba East, Yagba West, Lokoja, and Kotonkarfi (7) | Ijumu, Mopa-Amuro, Yagba East, Yagba West, Lokoja, and Kotonkarfi (6) |
| Kogi Central | Okene, Adavi, Okehi, Ajaokuta, and Ogori-Magongo (5) | Adavi, Okehi, Ajaokuta, and Ogori-Magongo (5) |
| Kogi East | Ankpa , Omala, Dekina, Idah, Ofu, Olamoboro, Ibaji, Igalamela-Odolu and Bassa (9) | Omala, Dekina, Ofu, Olamoboro, Ibaji, Igalamela-Odolu and Bassa (8) |
| Kogi state – all | Kabba/Bunu , Ijumu, Mopa-Amuro, YagbaEast, Yagba West, Lokoja, Kotonkarfi, Okene, Adavi, Okehi, Ajaokuta, Ogori-Magongo inthe Central, Ankpa , Omala, Dekina, Idah, Ofu, Olamoboro, Ibaji, Igalamela-Odolu and Bassa | Ijumu, Mopa-Amuro, Yagba East, Yagba West, Lokoja, Kotonkarfi, Adavi, Okehi, Ajaokuta, Ogori-Magongo inthe Central, Omala, Dekina, Ofu, Olamoboro, Ibaji, Igalamela-Odolu and Bassa (19) |

*In bold, local government areas (LGAs) already covered during TO11.

These cost projections are based on specific intervention scenarios and administrative separations of Kogi LGAs (Figure 1).

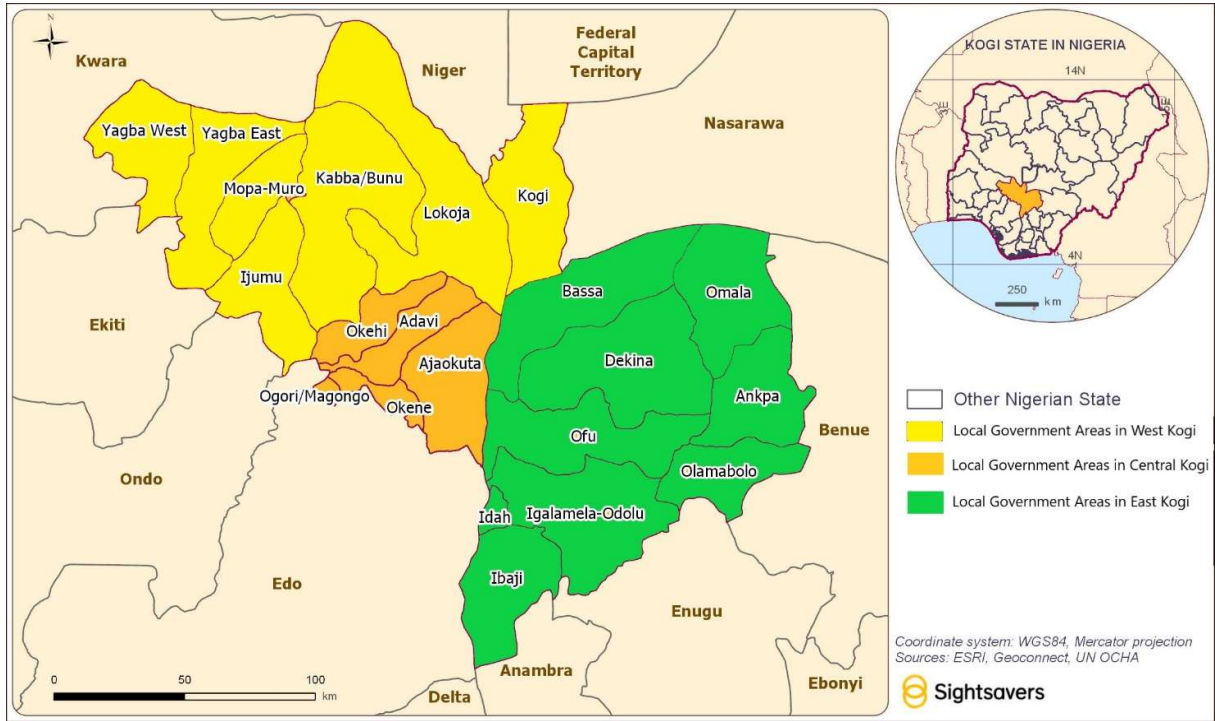


Figure 1: Map of Kogi Local Government Areas

Each scenario considers key variables specific to the region for the cost projection (Table 4). It is important to note that in the Kabba/Bunu, Idah and Ankpa LGAs a facility was audited, and infrastructures made accessible. Also, Ankpa and Kabba/Bunu LGAs were covered by the SBCC implementation activities during TO11 and are thus not included in the scale-up scenarios.

Table 4: Cost projection model: inputs, assumption

| Variable | Kogi West | Kogi Central | Kogi East | Kogi State | Source |
|--|-----------|--------------|-----------|------------|---|
| Health data | | | | | |
| Distribution of health care facilities in Kogi | 14% | 66% | 20% | 100% | Babatimehin, O., et al. |
| Health facilities | 8* | 42 | 10* | 61* | From discussion with experts |
| Number of health workers to train | 594 | 2795 | 826 | 4216 | Total from College of health sciences, University of Anyigba and assuming distribution from Babatimehin et, al. |
| Number of government officials to train | 80 | 420 | 100 | 640 | Assuming 10 per LGA |
| Number of facility staff to train | 396 | 1863 | 550 | 2810 | From discussion with experts |
| Trainees | 1070 | 5078 | 1476 | 7666 | |
| Administrative units: | | | | | |
| Number of local government areas (LGAs) | 6* | 5 | 7* | 18* | Babatimehin, O., et al. |
| Implementation recommendation: | | | | | |
| Trainer per LGA | 2 | 2 | 2 | 2 | From TO11 experience |
| Total number of trainers to train | 12 | 10 | 14 | 42 | “ |
| Number of facility staff to train per facility (sign language) | 5 | 5 | 5 | 5 | “ |
| Total number of facility staff to train (sign language) | 40 | 210 | 50 | 320 | “ |
| Number of outreach campaigns per LGA | 2 | 2 | 2 | 2 | “ |
| Total number outreach screening campaigns | 16 | 84 | 20 | 128 | “ |

*Adjusted to number of LGAs and facilities already covered during TO11

Results

Cost structure and cost drivers

In-country project costs represent the highest share of expenditure, amounting to 45% of expenditure (Table 5). This is followed by: health facilities accessibility works, with 29% of all financial cost; evidence, monitoring and evaluation with 15%; and Inclusion activities with 15%.

Personnel is the highest share of expenditure (62%) in terms of cost categories, followed by building categories (27%), transportation (6%), venue and meeting expenses (4%), equipment and supplies (1.6%) and finally other expenses (1%).

Cross-analysing activities and inputs helped identify the main cost drivers (highlighted in orange and red in table 5), such as: personnel cost of the management team, with 38% of total expenses; the building expenditures for health facilities accessibility work, 26% of total expenses; and personnel expenditure of Evidence, monitoring and evaluation amounting to 13% of total expenditure.

Table 5: Heat table of total incremental cost, by cost category and activity, in GBP 2022

| Activity/Category | Personnel (%) | Building (%) | Transportation (%) | Meeting expenses (%) | Equipment and supplies (%) | Other (%) | Total (%) |
|--|----------------|---------------|--------------------|----------------------|----------------------------|-------------|----------------|
| Project cost (%) | 129,469(38.4%) | 3,150(0.9%) | 10,726(3.2%) | 4,532(1.3%) | 4,451(1.3%) | 524(0.2%) | 152,851(45.3%) |
| Health facilities accessibility (%) | 8,879(2.6%) | 86,395(25.6%) | 790(0.2%) | - | 407(0.1%) | - | 96,471(28.6%) |
| Evidence, Monitoring, and evaluation (%) | 42,929(12.7%) | - | 3,019(0.9%) | 3,727(1.1%) | 635(0.2%) | 195(0.1%) | 50,666(15%) |
| Inclusion activities (%) | 26,175(7.8%) | - | 3,970(1.2%) | 5,560(1.6%) | 11(0%) | 1,377(0.4%) | 37,094(11%) |
| Total (%) | 207,452(61.5%) | 89,707(26.6%) | 18,504(5.5%) | 13,819(4.1%) | 5,504(1.6%) | 2,096(0.6%) | 337,082(100%) |



Table 6 shows unit costs of the key outputs. The average unit cost of training one person in gender equity and disability inclusion was £18, whereas training a trainer, usually a DPO staff member, amounted to £100 per person trained. Outreach screening activities costed on average £1,397 per campaign.

Three eye health facilities were audited for their accessibility and then accordingly renovated or adapted (e.g. construction of ramps, etc.), at an average cost of £29,413 per facility. Some facility staff members, 10 in total, received basic sign language at a unit cost of £811 per person - training lasted for two days a week for five weeks, and was conducted in smaller groups which impacted on costs.

Table 6: Cost per output unit (in GBP 2022)

| Activities | Total cost | Unit | Count of units | Unit cost |
|---|------------|--|----------------|-----------|
| Individuals and communities | | | | |
| Training of trainers | £997 | DPO selected trainees | 10 | £100 |
| Gender equity and disability inclusive training | £11,067 | Health facility staff, CHEW and governmental officials | 688 | £16 |
| Outreach screening campaigns | £11,177 | Screening campaigns | 8 | £1,397 |
| Health facilities change | | | | |
| Training hospital staff on basic sign language | £8,112 | Health facility staff | 10 | £811 |
| Number of health facilities audited for accessibility | £88,238 | Health facility | 3 | £29,413 |

Looking at the project's total cost and beneficiaries, the unit cost per beneficiary reaches £23 (Table 7) -one beneficiary being a person with disabilities reached directly and indirectly through project's eye examination, SBCC and other activities, at any level or a person who received an inclusion training. The total cost includes every expenditure collected and attributable to the TO11 project since its start and in country.

Table 7: Unit cost per beneficiary (in 2022 GBP)

| Costs, output | Project total |
|--|-----------------|
| Total cost (incl. Global cost) | £337,082 |
| Total number of beneficiaries (direct and indirect) | 14,813 |
| Unit cost per beneficiary | £23 |

Rapid budget impact analysis

Table 8 shows cost of scaling-up in four different scenarios. We estimate that if similar activities implemented during TO11 were conducted in all Kogi LGAs, the total incremental cost would approximately reach £3,391,099. However, at the sub-regional level, the cost of inclusive eye health activities in public facilities of Kogi west would amount to £465,848, and in Kogi Central and Kogi Eastern the total would be £2,220,682 and £578,988 respectively.

Table 8: Annual costs of implementing inclusive eye health activities, projection by activity (in GBP 2022)

| Inclusive eye health | | | | |
|--|-----------|--------------|-----------|------------------|
| Activities | Kogi West | Kogi Central | Kogi East | Kogi State - All |
| Project costs | | | | |
| Project management | | | | |
| Number of projects | 1 | 1 | 1 | 1 |
| Cost per project | 65,960 | 65,960 | 65,960 | 65,960 |
| Total sub-activity | 65,960 | 65,960 | 65,960 | 65,960 |
| Planning and coordination | | | | |
| Number of LGAs | 7 | 40 | 9 | 61 |
| Cost per LGA | 1,954 | 1,954 | 1,954 | 1,954 |
| Total sub-activity | 13,681 | 78,174 | 17,589 | 119,216 |
| Start-up costs | | | | |
| Capacity building | | | | |
| Number of LGAs | 7 | 40 | 9 | 61 |
| Cost per LGA | 1,614 | 1,614 | 1,614 | 1,614 |
| Total sub-activity | 11,298 | 64,559 | 14,526 | 98,453 |
| Start-up workshops | | | | |
| Number of LGAs to cover | 7 | 40 | 9 | 61 |
| Cost per LGA | 11,440 | 11,440 | 11,440 | 11,440 |
| Total sub-activity | 80,083 | 457,620 | 102,964 | 697,870 |
| Individuals and communities | | | | |
| Social Behaviour Change implementation | | | | |
| Number of LGA to reach | 6 | 5 | 7 | 18 |
| Cost of SBCC implementation per LGA | 3,699 | 3,699 | 3,699 | 3,699 |
| Total sub-activity | 22,193 | 18,494 | 25,892 | 66,579 |
| Targeted screening for person with disability | | | | |
| Number of campaigns to launch | 14 | 80 | 18 | 122 |
| Cost of target screening campaign per LGA | 1,397 | 1,397 | 1,397 | 1,397 |
| Total sub-activity | 19,559 | 111,768 | 25,148 | 170,447 |
| Training of trainers | | | | |
| Number of trainers to train | 12 | 10 | 14 | 36 |
| Cost per trainer to train | 100 | 100 | 100 | 100 |
| Total sub-activity | 1196 | 997 | 1396 | 3589 |

| Training of health workers, health facility staff and government officials | | | | |
|--|----------------|------------------|----------------|------------------|
| Number of health workers to train | 594 | 2795 | 826 | 4216 |
| Number of government officials to train | 70 | 400 | 90 | 610 |
| Number of facility staff to train | 396 | 1863 | 550 | 2810 |
| Cost per person trained | 16 | 16 | 16 | 16 |
| Total sub-activity | 17,175 | 81,954 | 23,753 | 123,725 |
| Health systems changes | | | | |
| Training of hospital staff | | | | |
| Number of hospital staff | 35 | 200 | 45 | 305 |
| Cost per person trained | 823 | 823 | 823 | 823 |
| Total sub-activity | 28,812 | 164,642 | 37,045 | 251,080 |
| Accessibility audit and renovations | | | | |
| Number of facilities to audit and renovate | 7 | 40 | 9 | 61 |
| Cost per facility | 29,413 | 29,413 | 29,413 | 29,413 |
| Total sub-activity | 205,890 | 1,176,512 | 264,715 | 1,794,181 |
| Total | 465,848 | 2,220,682 | 578,988 | 3,391,099 |

Discussion

The report presents results of the costing analysis for the TO11, Inclusive Eye Health project in Kogi state, Nigeria. Project expenditures were consolidated to compute the total financial cost, a summary of the cost distribution and identify cost drivers. The total incremental cost of the project amounted to £337,082, with a cost per beneficiary of £23.

The project aimed at providing two main outcomes: Health facilities accessibility (including training of human resources and removing physical barriers); and Inclusion activities (including, SBCC, Outreach campaigns etc.).

On average, project costs represented the largest share of expenditures (45%) as expected, as considerable SBCC and training materials had to be developed and start-up workshops to meet stakeholders were required - both sub-activities amount to 51% of project costs (Table 5 and Annex 1). Health facilities accessibility amounted to 29% of total expenditure and was the implementation activity that required the most expenditure – this was expected given the high cost of renovation and building of inclusive infrastructure in the three facilities. Inclusion activities amounted to 21% of total expenditure - it comprised of several sub-activities starting with Outreach campaigns (30% of inclusion activities' cost), Training of government staff, health facility staff and CHEWs (30%), implementation of SBCC in two LGAs (20%), Capacity building of DPOs (17%) and Training of trainers.

The reported cost per beneficiary of £23 is overestimated as it only includes programme beneficiary for the duration of the programme (three years). However, the benefits will last beyond the programme duration as facilities' accessibility renovations will have longer term effects, as will the training to a lesser extent.

Given the scarcity of cost data on inclusive health delivery, we cannot compare our results with other external studies in low- and middle-income countries. We can however observe a consensus in the literature stating that the costs of inclusion are outweighed by the benefits of inclusion (2-4).

It is important to note that most activities developed and implemented to improve access to health delivery for persons with disabilities are not recurrent. Indeed, in the short term health facilities will not be expected to develop new SBCC strategies, retrain staff every year (expect for punctual refreshers which would be implemented at a lower cost) or conduct

accessibility audits and renovation of facilities. Providing, on top of potential economies of scale, more arguments for the integration of inclusive activities in regular delivery of health services at scale.

As shown in Table 8, we estimated that to replicate similar inclusion activities in four different scenarios: in Kogi West only which would cover 7 facilities for £465,848; in Kogi Central for £2,220,682 covering 40 facilities; in Kogi East for £578,988 covering 9 facilities; and all facilities of Kogi state with the cost reaching £3,391,099.

It should be noted that the social and economic benefit from the increased inclusion of persons with disabilities in health services delivery have not been captured. However, the effect of the infrastructure changes and training of staff, CHWs and government officials will have wider effects exceeding the project scope and it's the benefits for Kogi state are therefore underestimated.

The data and results from this study contribute to a better understanding of how costs are distributed for inclusive health projects and will help identify ways to improve efficiency for future project implementation. Moreover, knowing the resources required for scaling will help advocate for the integration of inclusive eye health services in regular health service delivery.

Annexes

| Activities and sub-activities | Expenditures (%) |
|---|------------------------|
| Project cost | 152,851 (45.3%) |
| Project management | 65,960 (43.2%) |
| Start-up workshops | 45,762 (29.9%) |
| SBCC development | 33,312 (21.8%) |
| Coordination and administration | 7,817 (5.1%) |
| Health facilities accessibility | 96,471 (28.6%) |
| Accessibility audit and work | 88,238 (91.5%) |
| Training eye health facilities | 8,232 (8.5%) |
| Evidence, Monitoring, and evaluation | 50,666 (15%) |
| M&E | 31,498 (62.2%) |
| RAAB | 19,169 (37.8%) |
| Inclusion activities | 37,094 (11%) |
| Outreach screening | 11,177 (30.1%) |
| Training of government staff, health facility staff and CHEWs | 11,067 (29.8%) |
| SBCC implementation | 7,398 (19.9%) |
| Capacity building | 6,456 (17.4%) |
| Training of trainers | 997 (2.7%) |
| Total | 337,082 (100%) |

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