# INTEGRATED CONTROL OF SCHISTOSOMIASIS AND INTESTINAL HELMINTHS IN SUB SAHARAN AFRICA (ICOSA)

## 2015 EXTERNAL REVIEW


**Schistosomiasis Control Initiative**

*In partnership with*

**Liverpool School of Tropical Medicine**

**Crown Agents**

# CONTENTS

## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **ADP** | Accenture Development Partnerships |
| **AFRO** | African Regional Office |
| **ALB** | Albendazole |
| **APOC** | African Programme for Onchocerciasis Control |
| **CDD** | Community Drug Distributor |
| **DALY** | Disability Adjusted Life Year |
| **DFID** | Department for International Development |
| **DRC** | Democratic Republic of Congo |
| **FPSU** | Filarial Programme Support Unit |
| **FTE** | Full time equivalent |
| **FY** | Financial year |
| **GSA** | Global Schistosomiasis Alliance |
| **ICOSA** | Integrated Control of Schistosomiasis and Intestinal Helminths |
| **ILMDP** | Imperial Leadership and Development Programme |
| **LF** | Lymphatic Filariasis |
| **LSTM** | Liverpool School of Tropical Medicine |
| **M&E** | Monitoring and Evaluation |
| **MDG** | Millennium Development Goal |
| **MEB** | Mebendazole |
| **MOH** | Ministry of Health |
| **MTR** | Mid-term review |
| **NNN** | NGDO NTD Network |
| **NTD** | Neglected tropical disease |
| **PBR** | Payment by results |
| **PCT** | Preventive chemotherapy |
| **PZQ** | Praziquantel |
| **RTI** | Research Triangle International |
| **SAC** | School-aged children |
| **SCH** | Schistosomiasis |
| **SCI** | Schistosomiasis Control Initiative |
| **SCORE** | Schistosomiasis Consortium for Operational Research |
| **STH** | Soil-transmitted helminth |
| **TIPAC** | Tool for Integrated Planning and Costing |
| **VFM** | Value for Money |
| **WASH** | Water, Sanitation and Hygiene |
| **WATSAN** | Water and Sanitation |
| **WG-CS** | Working Group for Capacity Strengthening |
| **WHO** | World Health Organization |
| **ZEST** | Zanzibar Elimination of Schistosomiasis Transmission |

## 1. PROJECT OVERVIEW

In October 2010, DFID provided £25 million to deliver treatments for schistosomiasis (SCH) and intestinal helminths (STH) in 8 countries in sub-Saharan Africa (Phase I). Of the £25 million, £14.5 million was allocated to Crown Agents largely for the procurement of praziquantel (PZQ), with £10.5 million provided to the Schistosomiasis Control Initiative (SCI) to provide technical support to the national control programmes within the countries for the delivery of treatment through preventive chemotherapy (PCT).

Recipient countries were grouped according to their history of implementing control for SCH; Group One countries are those initiating national programmes for SCH control for the first time, Group Two are those who had previously undertaken implementation of control activities on a small scale and required support to scale-up to national levels, and Group Three are those countries who have delivered multiple rounds of PCT and require support to move towards elimination of SCH as a public health problem (Table 1). Imperial College has subcontracted the technical and management support for the programmes in Liberia, Mozambique and Zambia to the Liverpool School of Tropical Medicine (LSTM) to implement in line with their DFID-supported activities for the elimination of lymphatic filariasis (LF).

**Table 1:** ICOSA recipient country classification according to SCH control progress

| | **Group One** *Initiation* | **Group Two** *Scale-up* | **Group Three** *Elimination* |
|---|---|---|---|
| **Phase I** | Cote d'Ivoire (CDI)<br>Liberia<br>Malawi | Mozambique<br>Tanzania (mainland)<br>Zambia | Niger<br>Uganda<br>Tanzania (Zanzibar) |
| **Phase II** | Ethiopia<br>Democratic Republic of Congo (DRC) | | |

A business case to expand the ICOSA project by an additional £25 million (Phase II) was proposed in January 2012 and signed by the Secretary of State for DFID in June 2014. Phase II has expanded the scope of the project within the currently supported countries and included Ethiopia and the Democratic Republic of Congo (DRC) as recipient countries. This expansion has allowed the initiation of PCT for SCH and STH in both countries, neither of which have previously embarked on national control. As such, both Ethiopia and DRC fall into Group One.

Of the £25 million, SCI received an award of £16.6 million with the remaining allocated to Crown Agents for any necessary procurement. The project additionally expects to leverage the increased donation of PZQ by Merck Serono, and the donation of Albendazole (ALB) and/or Mebendazole (MEB) by GSK and Johnson & Johnson respectively, all available to countries by application through the World Health Organization (WHO). Additional funding for country programmes has also been successfully leveraged

with donations from END Fund, CIFF and Comic Relief to support DFIDs investment. Advocacy with donors continues and is expected to increase further in outer project years.

ICOSA commenced in October 2010 and has now been extended with Phase II until December 2018. The project is in Financial Year 6 (FY6; 1st April 2015 – 31st March 2016) having completed 58 months of operation (out of 99). FY1 was only of 6 months duration (1st October 2010- 31st March 2011), after which each financial year has been of 12 full months duration aligned to the UK Government financial year beginning annually on 1st April.

All PCT programmes within countries are encouraged to follow guidelines for deworming developed and published by the WHO. WHO advocates countries to also develop an integrated PCT strategy within their Neglected Tropical Disease (NTD) National Strategic Plans whereby coordinated approaches are utilized when appropriate for all activities for the delivery of drugs against SCH, STH, LF, onchocerciasis and trachoma. ICOSA plays a pivotal role in supporting countries to carry out these activities by building knowledge and skills and working in coordination with other partners involved in the government programmes.

During all PCT campaigns, endemic country programmes are encouraged to provide treatment for STH alongside PZQ where feasible. Monitoring treatment numbers for STH is not a log frame indicator within the ICOSA project, however it is acknowledged that additional benefits will be gained where STH treatment has occurred. The challenge for country programmes is the disaggregation of treatment numbers attributable to multiple rounds of PCT where drugs are delivered in close succession, such as for LF which also utilises ALB. ICOSA is working to capture numbers of STH treatments delivered with project support to ensure the full value of DFIDs investment is measured.

Monitoring and evaluation (M&E) of PCT interventions is essential to ensure that programmes are reaching the target population and having a positive reductive impact on disease burden. M&E surveys are supported within ICOSA to ascertain treatment coverage and review how disease prevalence and infection intensities change after treatment. M&E results additionally serve to increase learning and ensure scale-up is effective and efficient.

A mid-term review (MTR) for Phase I of the project was completed in October 2013. In order to meet the recommendations of the MTR, the external input of Accenture Development Partnerships (ADP) to review and recommend best practice in finance and management systems and an optimal staffing structure to meet the needs of the project was sought. Delays in the final approval of Phase II until June 2014 necessarily delayed implementation against certain recommendations, particularly around recruitment, however significant progress has been made (*see Evidence matrices*).

## 2. PROGRESS AGAINST LOG FRAME

### 2.1 SUMMARY OF OVERALL PROGRESS

The project has currently supported the delivery of a confirmed 59.56 million treatments by the end of July 2015, across all 10 countries.

DFID have inserted a new clause into the contract extension for Phase II which includes performance based targets in relation to cumulative treatment numbers, measurable in June at the end of each contractual year. For June 2015, the Payment by Results (PBR) target was the delivery of 45.1 million treatments. The project reached this milestone in May 2015, with a further 14.4 million treatments delivered since the beginning of FY6. Given that an anticipated 1.3 million treatments scheduled for Liberia during FY5 could not take place for external reasons[1], the project remains on track.

Reported coverage rates have been above the WHO recommended threshold of reaching at least 75% in all countries, as have validated coverage rates in enrolled school-aged children (SAC) where data is available. The only exception has been in Uganda a mature SCH control programme, where infection is asymptomatic and perceived need for treatment is low. Further data collection is progressing. Children not in school remain a challenge to reach through PCT but ICOSA is developing strategies to expand treatment coverage, for example with increased social mobilization and outreach to communities as has occurred in Malawi.

All logframe indicators have been updated accordingly and data generated since the 2014 annual review inserted against milestones, see Annex 1.

### 2.2 IMPACT

The **impact** of the project will be to contribute to the achievement of the human-development-related Millennium Development Goals (MDG), in particular MDG6, through the control and treatment of schistosomiasis (SCH) and soil-transmitted helminths (STH). There are two indicators at impact level.

#### IMPACT INDICATOR 1: MEAN INTENSITY OF INFECTION

Impact indicator 1 relates to the health impact of the project by measuring the reduction of intensity of infection over time. Intensity of SCH infection is an accepted proxy for disease morbidity[2]; therefore regular collection of this data gives a direct measurement of the effects of treatment on the occurrence of infection and an indirect measurement of the effectiveness of treatment in improving health status[3]. Intensity is measured as the number of eggs per gram of faeces (epg) for *Schistosoma mansoni* and as the number of eggs per 10 ml of urine (eggs/10ml) for *S. haematobium*.

[1] As a result of an Ebola epidemic during 2014, the Liberian MOH took the decision in August 2014 to suspend all non-essential health services, including all NTD programme activities. A readiness assessment has taken place in Liberia in June 2015 to determine if SCH treatment distribution can resume.

[2] Van der Werf et al (2003) Quantification of clinical morbidity associated with schistosome infection in sub-Saharan Africa. Acta Tropica 86:125-139

[3] Helminth Control in School-Aged Children, 2nd Edition, World Health Organization ISBN9789241548267.

Intensity data are collected through longitudinal parasitological surveys from a sample of SAC in sentinel schools which are successively followed-up pre-(at baseline) and post treatment. The establishment of sentinel schools and subsequent baseline data collection has been completed in all Phase I ICOSA-supported countries.

As the project scales into Phase II, the survey methodology has been reviewed to ensure that quality data is collected from SAC by optimizing the parasitological surveys within schools and maintaining statistical power for analysis. The decision has been made to move from a longitudinal cohort to a cross-sectional design thus, rather than the same children being surveyed at each assessment, a cross-section of SAC of the same age group and from the same sentinel schools will now be recruited. Contributing factors to this decision include difficulty in re-recruiting the same children each year e.g. as a result of school drop-out[4] and also that individual data is not required to demonstrate impact on prevalence and intensity at community level.

The log frame milestone by end 2014 expected that for Group One and Two countries, infection intensity should have reduced by 50-65% for *S. mansoni* and by 65-80% for *S. haematobium* where 1 round of PCT has taken place. Group Three countries have also been included in this table to give a full picture, however due to the lower levels of infection, the same decreases in infection are not expected (nor in the log-frame).

<table>
<tr><th>IMPACT Indicator</th><th>Milestone by end 2014</th><th>Baseline data</th><th>Achieved by July 2015</th></tr>
<tr><td rowspan="6">1. Mean intensity of infection in treated areas</td><td rowspan="6"><u>Baseline</u> conducted in all Phase I countries ready to commence PCT<br><br><u>Post 1 round of PCT</u><br>S. mansoni (Sm):<br>50-65% reduction from baseline<br>S. haematobium (Sh):<br>65-80% reduction from baseline (rfb)</td><td>Cote d'Ivoire (2013):<br>Sm = 46.01 epg<br>Sh = 5.98 e/10ml</td><td><u>Post 1 round of PCT (2015)</u>:<br>Planned for Nov 2015</td></tr>
<tr><td>DRC (2014):<br>Data being analysed</td><td><u>Post 1 round of PCT (2015)</u>:<br>Planned for Dec 2015</td></tr>
<tr><td>Ethiopia (2015):<br>Data being analysed</td><td><u>Post 1 round of PCT (2016)</u>:<br>Planned for April 2016</td></tr>
<tr><td>Liberia (2012):<br>Sm = 16.32 epg<br>Sh = 42.36 eggs/10ml</td><td><u>Post 1 round of PCT (2014):</u><br>Sm = 16.78 epg (-2.8% rfb)<br>Sh = 6.97e/10ml (83.6% rfb)</td></tr>
<tr><td rowspan="2">Malawi (2012):<br>Sm = 1.89 epg<br>Sh = 4.30 eggs/10ml</td><td><u>Post 1 round of PCT (2014):</u><br>Sm = 0.10 epg (94.7% rfb)<br>Sh = 1.55 e/10ml (64.0% rfb)</td></tr>
<tr><td><u>Post 2 rounds PCT (2015):</u><br>Sm = 0.72 epg (61.8% rfb)<br>Sh = 1.07 e/10ml (75.0% rfb)</td></tr>
</table>

[4] High endemic areas of schistosomiasis are often associated with large bodies of water. Fishing is often the primary source of income and families are known to move along lake shores in accordance with fish supply. The areas are often similarly prone to flooding, resulting in temporary community displacement.

| | | | |
|---|---|---|---|
| | | **Mozambique** (2013/4)[5]<br>Sm = 0.53 epg<br>Sh = 28.59 eggs/10ml | *Post 1 round of PCT:*<br>Planned for Sept 2015 |
| | | **Niger** (2011):<br>Sm = n/a<br>Sh = 3.4 eggs/10ml | *Post 1 round of PCT (2012):*<br>58.8% reduction Sh from baseline (1.4 eggs/10ml) |
| | | | *Post 2 rounds PCT (2013):*<br>Data being analysed |
| | | **Tanzania** (2012):<br>Sm = 109 epg<br>Sh = 18 eggs/10ml | *Post 1 round of PCT (2013):*<br>Data to be analysed in-country |
| | | **Uganda** (2013):<br>Sm = 2.96 epg<br>Sh = n/a | *Post 1 round of PCT (2015):*<br>Planned for Sept 2015 |
| | | **Zambia** (2013):<br>Sm = 2.36 epg<br>Sh = 9.20 eggs/10ml | *Post 1 round of PCT (2015):*<br>Planned for Sept 2015 |

**Key Points**

- To ensure the data needs are met within the M&E indicators of the log frame, SCI has increased capacity in the Monitoring & Evaluation team by appointing an M&E Senior Manager and tripling biostatistical support (of which 1.75 FTE is supported by ICOSA). This has resulted in a significant increase in the number of surveys conducted and data turnaround in terms of entry, cleaning and analysis. It has also broadened the scope of the project in the provision of data training to in-country teams.
- Health impact surveys are dependent on treatment schedules and thus any delays in PCT implementation have an effect on the frequency and timing of surveys. Delays are common and can result from a number of causes both internal and external to the project. Mitigation strategies are implemented to reduce the impact of delays on achieving project objectives where feasible.
- The majority of partner countries openly share data with ICOSA and give permission for it to be analysed in the UK, with any opportunities for capacity building identified within endemic country programmes. All results are communicated back and the countries always maintain the right to use the data for their own purposes. In Mozambique and Tanzania there are restrictions on data leaving the country and thus it must be analysed *in situ*. This has proved challenging in the past, but with increased biostatistics capacity and the use of Short Term Technical Assistance, progress has been achieved.
- There has been an expansion of technical capacity on conducting surveys and diagnostic techniques within countries led by ICOSA's African Capacity Building Advisor Dr Narcis Kabatereine. He has

[5] There were 3 issues with 2012 baseline data (i) the Mozambique MoH (MISAU) has misplaced the individual level data, (ii) there is school level data but with no school names, (iii) the Ritchie technique was used for diagnosis of *S. mansoni* by the survey team which is not a WHO recommended diagnostic tool. Data collected pre-treatment in 2013 and 2014 has been used as baseline data.

initiated training workshops and provided survey support with the assistance of Ugandan technicians in Malawi, Ethiopia, DRC, Mozambique and Zambia (*see 3.4 Capacity Building)*.

- Currently, in alignment with WHO recommendations, the ICOSA programme supports health impact surveys according to the frequency of treatment. In many geographical areas across all countries, biennial treatment is appropriate leading to multi-year gaps between data collection. In addition, PCT is often phased across countries, therefore statistical analysis is not completed until all data has been generated to maintain the statistical power to detect and verify impact.

### IMPACT INDICATOR 2: VALIDATED TREATMENT COVERAGE

The project is making an impact by reducing prevalence and intensity of infection and preventing progression of morbidity in infected individuals who are treated. Impact of the project is, therefore, also determined by the number of individuals receiving the tablets for SCH and STH out of the eligible population, i.e. the treatment coverage. In line with WHO Guidelines, the target coverage for deworming programmes is 75% in SAC for both PZQ and ALB (WHO, 2011). If high drug coverage is not attained, untreated individuals could potentially act as reservoirs of transmission, hindering control and elimination efforts. Each country collects and submits reported drug coverage, calculated using the number of doses distributed during a round of PCT recorded in treatment registers for the numerator, and population figures (often obtained from census population figures) as the denominator. This routine reported coverage can be unreliable due to the overestimation and at times underestimation, of the numbers of individuals treated and also because of out of date and inconsistent projections of eligible populations.

To validate the accuracy of reported PCT coverage rates, ICOSA oversees independent drug coverage surveys, particularly at the beginning of a programme, to ensure that prompt corrective action is taken where sub-optimal coverage is found. ICOSA has a template protocol for validating coverage which is reviewed and updated on an ongoing basis as experience in the area grows and with the increasing publications on optimum methodologies for capturing validated PCT coverage data. Current methodology is a household-based survey, which uses a stratified 2-stage cluster sampling design. In addition to validation, these coverage surveys also provide a unique opportunity to assess other issues, including awareness of NTDs and PCT, PCT delivery strategies, biases in treatment coverage (for example by age and gender) and examination of possible reasons for poor coverage or adherence. In areas where reported coverage is low, additional methods i.e. Key Informant Interviews and Focus Group Discussion are recommended to assess the causes of low coverage (WHO, 2005; WHO, 2010).

| IMPACT Indicator | Milestone by end 2014 | Achieved By July 2015 |
|---|---|---|
| **2. Validated treatment** | Post 2 rounds PCT: at least 70% coverage | **Cote d'Ivoire:** *Post 1 round PCT* - Feb 2014: 80.6% female; 79.0% male |

| | | |
|---|---|---|
| **coverage in school-aged children (5-14 years) (disaggregated by gender) by country** | | **Malawi:**<br>*Post 1 round PCT* - Oct 2012: 75.9% female; 79.9% male<br>*Post 2 rounds PCT* – Sept 2014: 78.3% female; 78.7% male |
| | | **Mozambique:**<br>*Post 1 round PCT* - July 2015: 82.0%[ŧ] |
| | | **Uganda:**<br>*Post 1 round PCT* - Feb 2014: 35.7% female; 36.2% male |
| | | **Zambia**:<br>*Post 1 round PCT* –June 2015: 91.8% female; 91.2% male |
| | | **Zanzibar:**<br>*Post 1 round PCT* - Nov 2012: 75.0%*****<br>*Post 2 rounds PCT* - June 2013: 85.1%*****<br>*Post 3 rounds PCT* - Nov 2013: 87.3%*****<br>*Post 5 rounds PCT* - Aug 2014: 72.0%*****<br>*Post 6 rounds PCT* - March 2015: 80.8% female, 77.9% male |

[ŧ]Preliminary results from coverage verification survey using Lot Quality Assurance Sampling have not been disaggregated by gender at this time

*Government of Zanzibar's own post-MDA coverage survey which does not disaggregate by gender. N.B. Zanzibar conduct biannual treatment for schistosomiasis according to their national strategic plan for elimination. In 2015 ICOSA supported an independent coverage validation survey.

**Key Points**

- Conducting coverage surveys has enabled ICOSA supported countries to identify where their strengths and potential weaknesses are in reaching target populations. This has informed programme adaptation and improvements including strengthening sensitisation and community mobilization campaigns; using multiple treatment delivery platforms, for example in Malawi and Mozambique where school-based treatment is now supplemented with community-based treatment, and also triple drug administration with PZQ, ALB and Ivermectin for the treatment of LF[6].
- Where they are occurring the incorporation of alternative delivery platforms, to reach higher treatment coverage, is an opportunity to provide first-hand evidence within an implementation setting and provides another dimension to data which is generated in research study locations through e.g. the Schistosomiasis Consortium for Operational Research on Elimination project.
- Current ICOSA programme results indicate that gender is not a barrier to equitable access to treatment.
- Low coverage in Uganda is perceived by the MoH and SCI to be a consequence of (1) being a mature programme, thus there is potential treatment fatigue in areas which have been receiving treatment for more than 5 years and (2) due to a lack of symptomatic morbidity seen in low endemic

[6] WHO recognise that co-administration of these three drugs can provide operational advantages. However, WHO recommend that triple therapy should only be implemented at the decision of the MOH where previous PCT for SCH and LF have been undertaken independently for at least 1-2 rounds.

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communities, thus there is no perceived need for treatment. Monitoring strategies by the national programme, supported by ICOSA, to increase treatment coverage in these areas will provide valuable lessons for progress towards elimination.

- ICOSA has introduced the use of mobile technology to improve data analysis lead times. All coverage surveys now use a mobile phone-based platform for data collection which removes the need for time-consuming and costly double data entry of paper forms and reduces the need for data cleaning prior to analysis.

## 2.3 OUTCOME

The **outcome** of the project will be to contribute to the WHO global strategic plan for SCH (2012-2020) by supporting a total of 203.5 million treatments by end 2018. The anticipated schedule for delivering these treatments through PCT is outlined in Annex 2.

| OUTCOME Indicator | Milestone by end 2014 | Achieved by July 2015 |
|---|---|---|
| **Number of treatments delivered, in millions (cumulative)** | 43.98 million | 59.56 million |

By end July 2015, the project has delivered a total of 59.56 million treatments, in excess of the end 2014 log frame target and meeting the contractual target for June 2015 (45.1 million). Treatment had been delivered in all existing ICOSA-supported countries prior to the expansion of Phase II of the project. Although both DRC and Ethiopia were only officially included in the project in the second quarter of FY5, significant preparatory activities were already underway supported through separate funding sources by SCI. This allowed DRC to embark on PCT within the same financial year, with Ethiopia undertaking treatment in April 2015 at the start of FY6. Total treatments by country are outlined in Table 2.

**Table 2**: Total number of treatments delivered by country. Note: Treatment was not supported during FY1 (Oct 2010 – Mar 2011) during which time Crown Agents prepared the tender for supply of PZQ to ICOSA.

| COUNTRY | FINANCIAL YEAR | | | | | TOTAL PROJECT |
|---|---|---|---|---|---|---|
| | FY2 | FY3 | FY4 | FY5 | FY6 | |
| | *Apr 11- Mar 12* | *Apr 12 – Mar 13* | *Apr 13 – Mar 14* | *Apr 14 – Mar 15* | *Apr 15 – Mar 16* | *Oct 10 – Jul 15* |
| **Cote d'Ivoire** | 0 | 649,859 | 853,708 | 3,072,078 | 0* | 4,575,645 |
| **Liberia** | 17,400 | 344,248 | 308,742 | 0 | 0† | 670,390 |
| **Malawi** | 2,071,817 | 2,037,487 | 0 | 4,305,956 | 6,188,939 | 14,604,199 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Tanzania** | 0 | 122,996 | 2,062,685 | 2,100,000 | 654,744‡ | 4,940,455 |
| **Mozambique** | 2,391,871 | 1,819,000 | 5,816,716 | 4,257,365 | 4,436,484‡ | 18,721,436 |
| **Zambia** | 19,800 | 0 | 36,929 | 988,023 | 0* | 1,044,752 |
| **Niger** | 482,028 | 272,994 | 1,338,453 | 1,469,666 | 0* | 3,563,141 |
| **Uganda** | 308,305 | 0 | 646,246 | 23,017 | 0* | 977,568 |
| **Zanzibar** | 945,282 | 1,059,318 | 1,694,264 | 1,610,281 | 0‡ | 5,309,145 |
| **DRC** | | | | 2,269,788 | 0* | 2,269,788 |
| **Ethiopia** | | | | 0 | 2,882,169‡ | 2,882,169 |
| ***Total*** | *6,236,503* | *6,305,902* | *12,757,743* | *20,096,174* | *14,162,366* | ***59,558,688*** |
| **Cumulative Total** | **6,236,503** | **12,542,405** | **25,300,148** | **45,396,322** | **59,558,688** | |

*PCT Pending; †PCT not scheduled; ‡Further PCT scheduled during FY6

**Key points**

- Due to the necessary EU procurement procedures required to source quality PZQ, drugs did not start to arrive in country until January 2012. Delivery of existing stocks within countries was supported, alongside the development of National Strategic Plans for the integrated control of NTDs supported by the WHO African Regional Office (WHO AFRO). The NSPs include credible plans for scale-up of SCH control and coordination with PCT interventions for other NTDs. Rapid scale-up by ICOSA has commenced during FY6 and is expected during FY7-9 with the increased funding support available through Phase II, the increased availability of PZQ through WHO/Merck Serono and the inclusion in the project of 2 further high priority countries (out of 4) identified by WHO as those with among the highest burden of unmet needs for NTD control and elimination.
- PCT implementation (as a health intervention) remains susceptible to influences on endemic countries already under-sourced health systems. This has been particularly highlighted in the last FY by the additional burden placed on the MoH in Liberia during their response to the Ebola epidemic, and the MoH in Niger during their response to a meningitis epidemic. Mitigation of risk in these circumstances remains ongoing, however, inevitably negative outcomes on the project will occur. Despite the enthusiasm of the NTD programme in Liberia to restart treatment during the first quarter FY6, the Ebola situation has not sufficiently resolved and the PZQ stock held in country will now expire in September 2015. On discussion with DFID, this was deemed acceptable in this instance versus undertaking treatment in the post-Ebola environment without due assessment of the situation within the counties.
- ICOSA continues to work closely with WHO and their newly appointed focal point for SCH, Dr Amadou Garba. Dr Garba previously managed the Nigerien SCH and NTD programme with SCI support since 2003. With strong collaborative links already in place, ICOSA is working with WHO,

Merck Serono and latterly the newly created Global Schistosomiasis Alliance (GSA) to ensure that PZQ supplies to countries benefiting from DFID funding for delivery support are maintained and appropriately scaled up.

- When delays/suspensions of treatment programmes do occur within countries, it is not always feasible to absorb the unmet treatment targets into other countries whose plans have often been fixed many months in advance. This poses a challenge to the project to ensure that performance based targets remain on track for the project overall. As countries scale-up to undertake increased treatments on an annual basis, variance in treatment delivery will be more acutely observed. Risk mitigation in these instances will be critical (see Section 6. Risk)

## 2.4 OUTPUTS

In light of the expansion of Phase II, the log frame was revised to include 5 project outputs:

1. Priority areas identified through mapping of infected populations
2. Over 500 million tablets delivered to treat infections
3. National programmes implementing mass drug administration (MDA) in the most effective ways as a result of monitoring and evaluation activities
4. Strategies identified to promote elimination of SCH in low endemic settings
5. Reduced costs of treatment as a result of efficient implementation

Within each output, the indicators have similarly been reviewed and adjusted accordingly to reflect the Phase II business case.

### OUTPUT 1: PRIORITY AREAS IDENTIFIED THROUGH MAPPING OF INFECTED POPULATIONS (GROUP 1&2 COUNTRIES)

Mapping is essential to identify those areas where disease is endemic and to define the treatment strategy (frequency and target population) within each implementation unit. Frequency of treatment is based on the level of prevalence of infection in an area (which signals the level of risk in a community). Treatment is administered once a year in areas of high prevalence, and once every two years (sometimes less frequently[7]) in moderate or low prevalence areas. Treatment is repeated until prevalence is reduced below a defined threshold (see *Helminth Control in School-Aged Children, 2nd Edition, WHO*).

| OUTPUT 1<br>Indicators | Milestone<br>by end 2014 | Achieved<br>by July 2015 |
|---|---|---|
| **1.1 Number of country specific mapping protocols available** | 8 available (including Phase II countries) | 8 available (Phase II country protocols not developed through ICOSA) |
| **1.2 Target areas mapped for disease by country** | 100% all countries | 100% Malawi |
| | | 100% Liberia* |

[7] Twice during the period of primary schooling age, in areas of low risk.

| | | |
|---|---|---|
| | | 100% Cote d'Ivoire |
| | | 100% Zambia |
| | | 100% Tanzania |
| | | 100% Mozambique |
| | | 100% Ethiopia |
| | | 100% DRC† |
| **1.3 Studies commissioned on impacts of climate change** | *Phase II indicator added* | 1st milestone by end FY6 |

*10 counties (out of 15) were mapped with ICOSA support. The remaining 5 have been completed during 2015 by WHO AFRO.
†All provinces mapped prior to commencement of ICOSA support but a number of health zones within were not included due to security issues at the time of surveys

**Key points**

- At the start of the project, mapping had been completed for Tanzania and Mozambique. Mapping surveys were initiated and implemented across remaining countries to identify priority areas for PCT targeting. By the onset of Phase II, only 5 counties in Liberia remained to be mapped, with mapping completed in all other Phase I ICOSA supported countries.
- In late 2013, the Bill and Melinda Gates Foundation announced a $15 million grant for integrated mapping for NTDs in the African region. Countries applied to WHO AFRO for support to complete mapping for SCH and was accessed by Liberia to complete mapping activities during 2015. For Phase II countries, Ethiopia had completed mapping with SCI support (through non-DFID sources) and DRC with support from LSTM and WHO AFRO.
- SCI has started a data release project during 2015 with the main purpose to prepare mapping data into a format suitable for publication through the open access website 'Global Atlas for Helminth Infections' (GAHI; www.thiswormyworld.org). Formalised data sharing agreements will be sought from countries to agree to release their data into the public domain, as a resource for future planning and inclusion in analyses by other organisations to further optimise mapping processes.
- The inclusion of an indicator on climate change impact was added for Phase II and has not yet been addressed by the project given the focus has been primarily on increasing effective PCT delivery. During FY6, the project will explore links with the Grantham Institute - Climate Change and Environment, a global institute within Imperial College to define a scope of work to explore the implications of climate change on project success. It is acknowledged that no immediate impact of climate change will be observed during the lifespan of ICOSA but may help inform future strategies for the sustainability of the positive results the project produces.

## OUTPUT 2: DRUGS PROCURED AND DELIVERED

Crown Agents have a contract directly with DFID for the supply of procured commodities essential for the successful delivery of the ICOSA project. By the end of July 2015, the total spend on procurement was £12.697 million of which over 95% (£12.12 million) was for the purchase of PZQ tablets. By the end of July 2015, over 188 million tablets have been delivered to supported countries, of which 155 million have been supplied directly by the project (Table 3). A further 28.90 million tablets are currently on order to support FY6 PCT rounds.

| OUTPUT 2<br>Indicators | Milestone<br>by end 2014 | Achieved by<br>July 2015 |
|---|---|---|
| **2.1 No of tablets delivered to countries** | 143 million (including Phase I and II) | 181.2 million<br>*of which:*<br>155.1 million Crown Agents procured<br>33.7 million donated by WHO |
| **2.2 No of countries implementing MDA according to their National Strategic Plans** | 8 countries | 10 countries |
| ***2.3 DFID will monitor, and contribute to the effective management of the market for PZQ** | Develop scope of work for report | Report conducted and submitted to DFID |

*The scope of work for Indicator 2.3 was developed and contracted directly by DFID to the Clinton Health Access Initiative (CHAI). The resulting report has been submitted to DFID and initial findings presented in June 2015 at a Drug Coordination forum in WHO HQ, Geneva.

**Table 3:** Total number of tablets procured/donated and delivered by March 2015 by country.

| Country | Total number of PZQ tablets PROCURED and delivered by July 2015 | Total number of PZQ tablets DONATED* and delivered by March 2015 |
|---|---|---|
| **Cote d'Ivoire** | 19,211,454 | 0 |
| **Liberia** | 4,875,500 | 0 |
| **Malawi** | 35,975,000 | 2,502,000 |
| **Mozambique** | 48,200,000 | 0 |
| **Niger** | 7,926,500 | 0 |
| **Uganda** | 11,419,500 | 0 |
| **Zambia** | 11,726,000 | 0 |
| **Tanzania** | 15,750,000 | 0 |
| **Zanzibar** | 0 | 14,292,000 |
| **DRC** | 0 | 4,005,000 |

| | | |
|---|---|---|
| **Ethiopia** | 0 | 12,906,000 |
| **TOTAL** | **155,083,954** | **33,705,000** |

*Merck PZQ donated through WHO only

**Key points**

- Security of PZQ supply is essential to project success. To date under Phase I, manufacturers have met all timelines. However, during FY5 and for the first time Microlabs, the lead supplier for ICOSA, did not fulfil their contractual obligations and Crown Agents sought liquidated damages for a delayed delivery to Cote d'Ivoire. FY6 contracts have been awarded to Microlabs as the most competitive tenderer for the project and Crown Agents are monitoring closely their performance. With a lack of alternative approved suppliers, the ability of Microlabs to meet contractual delivery dates is imperative to maintaining country treatment schedules.
- For Phase II, destination clearance (of non-PZQ items) has been raised as an issue for Ethiopia and DRC. Crown Agents are investigating alternative clearance routes, including that for diplomatic cargo via the British Embassy/DFID for DRC as has been used for Ethiopia. However significant delays are occurring through this channel and CA are closely monitoring the progress of clearance activities.
- PZQ shelf-life is a maximum of 3 years and for donated PZQ by Merck Serono is still limited to 2 years. To mitigate the potential for drug expiry in country, as a result of delayed PCT implementation which can often result in delays of 6 months or more combined with a long lead time from drug arrival in country to use in treatment distribution round, PZQ orders are placed on an annual basis. ICOSA is still working to identify the optimal timing to ensure that drugs arrive in country with a lead time for PCT delivery balanced with risk of expiry if oversupplied.

## OUTPUT 3: NATIONAL PROGRAMME USING MONITORING AND EVALUATION RESULTS TO REFINE STRATEGIES

The WHO considers monitoring and evaluation as an integral component of any control programme. Suggested indicators for SCH and STH control programmes in SAC are grouped into 3 main categories; process, performance and impact. The process indicator for ICOSA measures the timely reporting of treatment numbers back to the central level after a treatment round. Performance indicators assess the success of the programme in reaching the target population, i.e. coverage. Within this output, ICOSA evaluates equitable access to treatment by gender and also by those children who do not attend school. Impact is measured according to improvement in health by the proxy indicator of reduction in heavy infections.

| OUTPUT 3<br>Indicators | Milestone<br>by end 2014 | Achieved by<br>July 2015 | |
|---|---|---|---|
| **3.1 Percentage of targeted districts submitting reports 90 days after MDA *(Phase II Indicator)*** | 50% | **Cote d'Ivoire** (2014): 100%<br>**DRC** (2014): 30%<br>**Ethiopia** (2015): pending<br>**Liberia** (2014): 100%<br>**Malawi** (2014): 50%; (2015): 100%<br>**Mozambique** (2014): 100%; (2015): 100%<br>**Niger** (2012) 16%; (2014/5):43%<br>**Tanzania** (2014): 70%<br>**Uganda** (2014): 80%<br>**Zambia** (2014): tbc; (2015): 100%<br>**Zanzibar** (2014): 100% | |
| **3.2 Validated coverage of children not at school by gender** | At least 50% in 4 countries | **Malawi:**<br>*Post 1 round PCT* (2012): Females 14.8%; Males 15.5%<br>*Post 2 rounds PCT* (2014): Females 42.1%, Males 44.3% | |
| | | **Mozambique:**<br>*Post 2 rounds PCT* (2014): 67%[ǂ] | |
| | | **Uganda:**<br>*Post 1 round PCT* (2014): Females 5.5%, Males 1.0% | |
| | | **Zambia:**<br>*Post 1 round PCT* (2015): Females 68.4%, Males 64.3% | |
| | | **Zanzibar**:<br>*Post 1 round PCT* (2015): Female 66.7%, Male 67.0% | |
| **3.3 Percentage of people with heavy infections in treated areas by country**<br>(Group 1 and 2 countries only) | *Baseline:*<br>Conducted in all countries<br><br>*Post 1 round PCT:*<br>Decline in percentage:<br>60% Sh (rfb)<br>40% Sm (rfb) | **Cote d'Ivoire** (2013):<br>*Baseline:*<br>Sm = 2.9%, Sh = 1.9% | *Post 1 round of PCT*<br>Planned for Nov 2015 |
| | | **DRC** (2014):<br>*Baseline:*<br>Data being analysed | *Post 1 round of PCT* (2015):<br>Planned for Dec 2015 |
| | | **Ethiopia** (2015):<br>*Baseline:*<br>Data being analysed | *Post 1 round of PCT* (2016):<br>Planned for April 2016 |
| | | **Liberia** (2012):<br>*Baseline:*<br>Sm = 0.2%, Sh = 9.3% | *Post 1 round of PCT* (2014):<br>Sm = 1.0% (-400% rfb)<br>Sh = 0.1% (98.9% rfb) |
| | | **Malawi** (2012):<br>*Baseline:*<br>Sm = 0.1%, Sh = 1.9% | *Post 1 round of PCT* (2014):<br>Sm = 0.1% (0% rfb)<br>Sh = 1.6% (15.8% rfb) |

| | | | |
|---|---|---|---|
| | | **Mozambique** (2013/14)* | *Post 1 round of PCT:*<br>Planned for Sept 2015 |
| | | **Tanzania** (2012)* | *Post 1 round of PCT* (2013):<br>Data to be analysed in-country |
| | | **Zambia** (2013):<br>*Baseline:*<br>Sh = 2.0%, Sm = 0.1% | *Post 1 round of PCT*<br>Planned for Sept 2015 |

[ł]Preliminary results from coverage verification survey using Lot Quality Assurance Sampling have not been disaggregated by gender at this time

*The 2013/14 Mozambique and 2013 Tanzania baseline data have not been disaggregated by heavy intensity of infection

**Key points**

- There has been a strong increase in the percentage of implementation units reporting within a 90 day time-frame in several countries. Data Quality Assessment surveys are now scheduled to take place over the next financial year within ICOSA countries which will facilitate the country teams to identify where bottlenecks occur and how the quality of data feeding through to the central level can be improved.
- It is a priority of both WHO and SCI to support the scale-up to national coverage of treatment in SAC and high-risk populations. In addition, SCI strives to ensure equity of treatment. The coverage surveys have been pivotal in highlighting that we have high coverage and gender equity in enrolled SAC, however, reaching non-attending SAC has been more of a challenge. As previously mentioned in this report, ICOSA programmes in Malawi and Mozambique have successfully been using multiple platforms and strategies to increase treatment coverage. This has led to a seven-fold increase in reported numbers of non-attending SAC treated and a 25% increase in the coverage validation surveys. See Annex 3 for the case study of increasing coverage in the non-attending in Malawi.
- The project is developing a sharing document to highlight learnings from the multi-country coverage surveys and experiences in increasing the reach to non-attending SAC. This will be provided to all endemic country programmes within ICOSA and be made available for non-ICOSA countries undertaking deworming programmes for SCH and STH to assist in the design of strategies for improving access to treatment.
- In Malawi, Cote d'Ivoire and Uganda additional qualitative surveys have been conducted to understand barriers to knowledge, delivery and treatment uptake in both community health workers and beneficiaries. Social science expertise is currently being sought to analyse this data, *see 4.2 Meeting the needs of countries.*
- The reduction in the percentage of people with heavy infections has been suggested as an indicator to monitor progress from control to elimination of SCH as a public health problem by WHO. Surveys conducted with ICOSA support have identified that the percentage of heavy infections detected has been lower than expected. The benefit of this finding is that the schools and communities where treatment is delivered have less morbidity and less potential for long-term sequelae to develop. In terms of M&E, the ICOSA targets were formulated using historical SCI data with higher baseline levels of heavy intensity of infection. As a consequence, in some cases it will be more of a challenge

to detect a change in low intensities within the sentinel sites. In some instances e.g. *S. mansoni* in Liberia, we may even witness an increase in heavy intensity of infection, because at such low prevalence, only one or two children can have an effect on the results.

## OUTPUT 4: ELIMINATION OF SCH AS A PUBLIC HEALTH PROBLEM

Following the recognition of the long term health impact of disease elimination outlined in the World Health Assembly Resolution 66.12 in May 2013, ICOSA is supporting the development of elimination strategies in Zanzibar, Uganda and Niger which have been undertaking MDA for a number of years.

<table>
<tr><th>OUTPUT 4<br>Indicators</th><th>Milestone<br>by end 2014</th><th colspan="2">Achieved by<br>July 2015</th></tr>
<tr><td rowspan="3">4.1 Transmission hotspots (areas with persistent transmission) treated with adjusted preventive chemotherapy (PCT)</td><td rowspan="3">70% hotspots treated by adjusted PCT</td><td colspan="2">Niger: 100% hotspots treated by adjusted PCT</td></tr>
<tr><td colspan="2">Zanzibar: 100% hotspots treated by adjusted PCT</td></tr>
<tr><td colspan="2">Uganda: 68% hotspots treated by adjusted PCT (38 out of 56 districts)</td></tr>
<tr><td rowspan="3">4.2 Percentage of heavily infected individuals in hotspots</td><td rowspan="3"><u>Post 1 round of PCT</u>:<br>Reduction from baseline<br>25% Sh<br>25% Sm</td><td>Niger (2011):<br><u>Baseline</u><br>Sh = 1.45%, Sm = n/a</td><td><u>Post 1 round of PCT</u> (2012)<br>Sh=0.48% (67.0% rfb)</td></tr>
<tr><td>Uganda (2013):<br>Sh = n/a, Sm = 0.8%</td><td><u>Post 1 round of PCT</u> (2015)<br>Planned for Sept 2015</td></tr>
<tr><td>Zanzibar (2012):<br>Sh = 1.60%, Sm = n/a</td><td>(2013) Sh = 1.25% (21.9% rfb)<br>(2014) Sh = 1.15% (28.1% rfb)<br>(2015) Sh = 1.50% (6.25% rfb)</td></tr>
</table>

**Key points:**

- Similar sample size issues to that previously explained hold true for the Group 3 countries in terms of measuring accurately the percentage of heavily infected individuals in hotspots. In such settings it would be prohibitively expensive to power health impact surveys to have enough sentinel schools to detect significant changes over time.
- In line with WHO, reducing to less than 1% heavy infection to achieve elimination of SCH as a public health problem is the goal. The health impact surveys will help to monitor achievement in Group 1 and 2, and Group 3 ICOSA countries. When this data is viewed with coverage survey, process and

qualitative data, it will give a holistic picture and add to SCI's, and a global, understanding in how the WHO goal is achieved.

- The Group 3 countries ICOSA countries are providing the opportunity to explore adjusted PCT in terms of frequency and target populations, and what the effects of added interventions are e.g. snail control and behaviour change. Evidence on what happens in SAC following 5 to 10 years of PCT when these different and additional strategies are implemented is providing the first evidence in global understanding for sub-Saharan Africa.
- The ZEST partnership in Zanzibar, of which ICOSA is part of, have identified the following:
  - Biannual MDA alone is not able to reduce *S. haematobium* prevalence to zero, but rather helps to keep the prevalence stable
  - To be effective, snail control needs to be conducted regularly at all waterbodies, with multiple visits per year and timed with MDA
  - Behaviour change needs constant exchange, input, feedback, ideas, creativity, multi-tasking and time.

## OUTPUT 5: LOWER COST PER TREATMENT ACHIEVED

| OUTPUT 5<br>Indicators | Milestone<br>by end 2014 | Achieved by<br>July 2015 | |
|---|---|---|---|
| 5.1 Number of countries with financial cost per treatment determined | Costs determined in 6 countries | | |
| 5.2 Direct financial cost per treatment by country | 4 countries achieving cost per treatment reduced from baseline (Post 1 round of PCT) | *Post 1 round PCT*<br>**Cote d'Ivoire**: £0.28<br>**Liberia**: £0.31<br>**Malawi**: £0.12<br>**Mozambique**: £0.04<br>**Niger**: £0.17<br>**Uganda**: £0.27<br>**Tanzania**: £0.45<br>**Zambia**: £0.27<br>**Zanzibar**: £0.08 | *Post 2 rounds PCT*<br>**Cote d'Ivoire**†: £0.15<br>Tanzania: £0.13<br><br>Post 3 rounds PCT<br>**Cote d'Ivoire**†: £0.17<br>**Malawi**: £0.15<br>**Niger**: £0.15 |

† 1st round of PCT in Cote d'Ivoire has been carried out in 3 phases over time (1.5yrs)

**Key points:**

- Recruitment to Imperial College is guided under strict legal requirements and best practise principles, therefore is often a time-intensive process. The ICOSA Value for Money (VFM) Officer was recruited to post and joined SCI in December 2014. In the subsequent six months,

discussion with the strengthened finance team served to clarify the measurement of the cost component of the VFM metrics and analysis was initiated.

- Prior to the development of new financial management processes, there had been a less robust system to routinely capture programme expenditure by inputs and activities across the ICOSA countries. The new processes and cashbook were designed to record all financial transactions at country level (*see Section 6.2).*
- With the upcoming recruitment of a new VFM Officer, reconciled country cashbooks, VFM templates and excel macros developed, the project expects a quick turnaround in analysis of outstanding FY4 and FY5 country data.

## 3. CONTRIBUTION TO COUNTRY NEEDS

ICOSA is focused on the delivery of treatments against SCH and STH and the monitoring of the impact of these interventions. The business case, log frame and performance based targets are built on reaching treatment milestones. However, the project also recognizes that capacity building across a range of areas is a key factor in NTD programme sustainability. To ensure the programmes deliver in the most effective manner, all aspects of management and monitoring need to be supported. Although there is not a specific budget line for capacity development, ICOSA has worked with country Ministries of Health to identify both the financial and non-financial inputs and opportunities for the provision of the support needed for ongoing programme delivery.

### 3.1 COUNTRY NEEDS ASSESSMENT

In response to the MTR 2013, a needs assessment was carried out in seven[8] of the eight Phase I countries to review how the ICOSA support to date had aligned with the countries own assessment of their requirements. This took the form of a standardized interview (Annex 4) conducted over the phone by a senior member of the SCI staff not directly involved with the ICOSA country programmes. Table 4 shows the summary of responses according to the key themes on interview.

[8] The Programme Manager of Tanzania was unavailable to participate in the phone interview during the 4 weeks that the interviews were taking place. Tanzania had also been reviewed in the MTR and the Tanzanian programme manager had had an opportunity to feed back during this process.

**Table 4:** Summary of endemic country programme managers assessment of their programmes non-financial requirements

| | Cote D'Ivoire | Liberia | Malawi | Mozambique | Niger | Uganda | Zambia |
|---|---|---|---|---|---|---|---|
| **Most beneficial support to date** | Financial support<br><br>Procurement of office supplies | Financial support<br><br>Procurement | Situational analysis<br><br>Implementation support | Financial support<br><br>Procurement of drugs | Impact assessment | Situational analysis | Technical support |
| **Support for scaling up** | Social mobilisation<br><br>Laboratory equipment needed | Social mobilisation<br><br>Reaching non enrolled children<br><br>Food at time of treatment<br><br>Teachers incentive<br><br>NTD secretariat incentives | Social mobilisation<br><br>More M&E support<br><br>Expand staffing levels<br><br>Capacity in diagnostics | Social mobilisation<br><br>Training of lab technicians<br><br>Material in local language | Social mobilisation<br><br>Health facility based treatment | Social mobilisation | Recruit assistant to NTD coordinator |
| **Support for enhanced reporting** | Reporting templates | Reporting templates<br><br>Training of staff | More supervisory staff<br><br>Training of staff | More staff trained in finance | More staff trained in finance | Training on data reporting<br><br>Training of senior staff on financial reporting | Recruit assistant to NTD coordinator |
| **Delivery of support** | Greater lead times in visits from ICOSA staff | More frequent country visits by ICOSA staff<br><br>Training in data analysis and M&E<br><br>More South to South | More frequent country visits by ICOSA staff<br><br>More South to South collaboration | Better planned visits from ICOSA staff | More frequent contact with ICOSA staff - outside Niger | More frequent country visits by ICOSA staff<br><br>Input into IT equipment ordered | More frequent country visits by ICOSA staff x3 per year |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | collaboration | | | | | |
| **Planning** | Templates made available | | Timely release of funds | Further guidance on planning cycle | More support from ICOSA staff | More staff training | Templates |
| **Financial management** | Templates made available | Training of financial staff | Provision of in country assistant to NTD coordinator<br><br>Transport to district to collect receipts - motorbikes<br><br>Laptops to districts for data entry | Templates made available | Training of financial staff | Templates made available<br><br>Training of financial staff | Templates made available<br><br>Training of financial staff |
| **Integration in health sector** | No external support requested | | Coordinate diagnostic training | Integration of forms<br><br>Translation of material into local language to be integrated | Increased frequency of NTD stakeholder meetings<br><br>Publication of data in Journal of MOH | More transport - motorcycles<br><br>Resources for joint social mobilisation | Templates<br><br>Technical support on integrated implementation |
| **Integration with WATSAN** | No external support requested | Resources for stakeholders meeting | Resources for stakeholders meeting | Resources for stakeholders meeting | Advocacy for funding of CLTS | Resources for stakeholders meeting | Resources for stakeholders meeting |
| **Collaboration with MoE** | No external support requested | Incentives for teachers | Teacher training | Prefer not to collaborate further | Teacher training at national and regional level | No further support required | Resources for stakeholders meeting |

As expected there was significant variation between countries, reflective of the stage of their programmes, however a number of commonalities were identified:

- **Most beneficial support to date:** All countries identified financial contributions as a key support
- **Support for scaling up**: All countries requested assistance with social mobilization
- **Support for enhanced reporting, planning and financial management:** The majority of countries requested more standardization and further development of templates for reporting planning and financial management activities. In addition the need for training in financial processes were highlighted.
- **Integration in health sector with WATSAN and Collaboration with MoE*:*** A number of countries requested further assistance with convening stakeholder meetings

Based on the finding from this exercise, the ICOSA team have recently developed an 'Additional Support Request' form to be completed for each country programme during the planning and budgeting cycle on an annual basis. This allows requests from endemic country managers to be captured alongside needs identified by ICOSA staff, the delivery of which can be reviewed on a monthly basis.

## 3.2 MEETING THE NEEDS OF COUNTRIES

Since the MTR, ICOSA has worked to deliver on requests by countries through a number of formal and informal delivery methods. Under each key theme identified during the country needs assessment, support has been provided via the following illustrative examples:

| | | |
|---|---|---|
| **Beneficial Support** | Increased financial contributions | Leveraging additional donor funding through advocacy and fundraising to complement DFID investment:<br>- END fund (Liberia, Ethiopia),<br>- CIFF (Ethiopia),<br>- Comic Relief (Malawi) |
| **Support for scale-up** | Social Mobilization | SCI has secured (non-DFID) funding for a Social Scientist position to:<br>- carry out the immediate tasks required to support programme delivery<br>- conduct a scoping exercise in terms of SCI's operational research strategy<br>- create networks to existing social science expertise both internal and external to Imperial College |
| | Increased M&E capacity | Capacity building through provision of training in diagnostic and surveillance techniques. |
| | | Capacity building through the provision of training in statistical methods and analysis. |
| | | Streamlining of M&E processes through the provision of standardized protocols and report templates for M&E activities |
| **Support for** | Standardized tools | Aligning ICOSA project templates with: |

| | | |
|---|---|---|
| **enhanced reporting, planning and financial management** | | - other NTD donor budget templates (eg RTI)<br>- WHO NTD database, currently being rolled out in endemic countries<br>- WHO-endorsed Tool for Integrated Planning and Costing (TIPAC) for integrated NTD programmes |
| | Training Workshops | Capacity building through provision of training in finance, reporting and planning. |
| **Integration** | Stakeholder meeting support | Provision within the budget to support annual stakeholder meetings. NB. DFID funding contributes to meetings on a cost-share basis with other participating country implementing partners e.g. FPSU, RTI, APOC. |

### 3.3 STAFFING

In order to ensure that the skills sets within the ICOSA team are appropriate to support programme needs, ICOSA carried out a resource planning exercise facilitated by Accenture Development Partners (ADP) the not-for-profit arm of Accenture Consulting. The skill sets across the whole ICOSA team were reviewed and recommendations made on what additional skills and resources were required to more effectively fulfil the needs of endemic country programmes and reporting requirements of DFID going forward.

The outputs from the exercise were:

1. Detailed assessment of the activities carried out by different ICOSA roles and the percentage of time spent on each activity.
2. A model for estimating the amount of resource required for the targeted number of treatments across 10 countries aiming to take into account a number of influencing criteria.
3. A recommended human resource plan for SCI (inclusive of the ICOSA team) which would fulfil the resource needs of SCI and the ICOSA programme going forward.

The review inputs were:

- ICOSA team member interviews
- Assessment of programme data and budgets
- Review of country needs assessments
- Auditors reports, DFID Annual Reviews and 2013 MTR

#### ASSESSMENT OF ACTIVITIES CARRIED OUT BY STAFF

At the time of the review (December 2013), SCI employed a total of 16 full time equivalent (FTE) staff of whom 7 had a primary responsibility to provide technical support to Ministries of Health of endemic

countries[9]. Staff were asked to allocate the percentage of time they spent on an annual basis on a series of task categories, Figure 1. (See Annex 5 for definitions of categories).

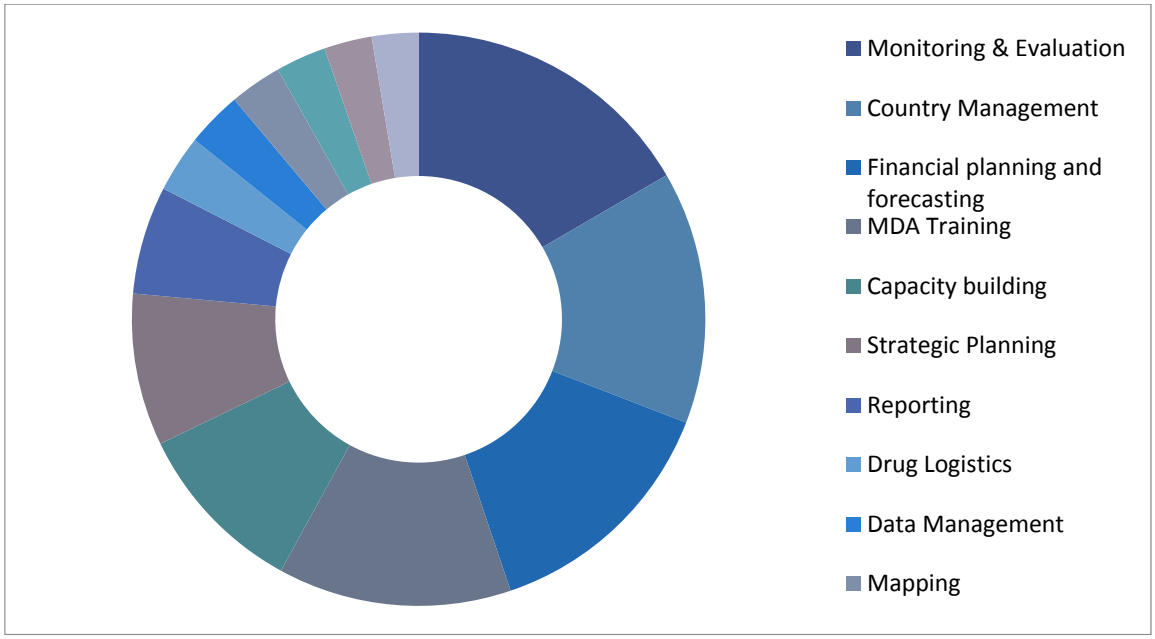



**FIGURE 1:** Proportion of time allocated to different programmatic activities

As expected, a high effort (51%) of staff time was allocated to 3 major tasks:

1. Country Management
2. Financial planning, reporting & forecasting
3. Monitoring and evaluation

Figure 2 illustrates the percentage time allocated to non-country specific activities carried out by the SCI team.

[9] SCI supported 18 countries in total, 8 funded by DFID. However it was felt important to look at the organisational level. There was also some consideration in the recommendations of the resources available from FPSU (formerly CNTD).

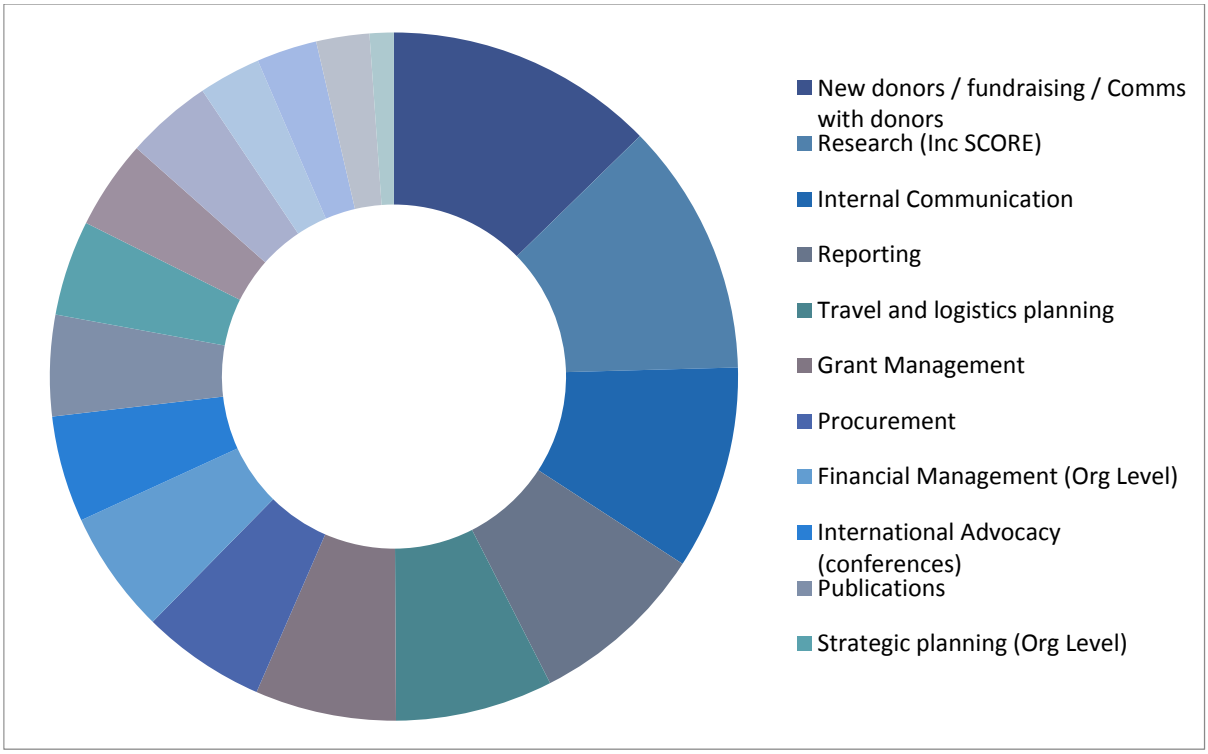



**FIGURE 2**: Proportion of time allocated to central non-country specific activities.

Three key areas accounted for 49% of staff time on non-country specific activities

1. Financial Management/ Grant management / Donor and Internal communications (38%)
2. Procurement / Crown Agent liaison (6%)
3. Travel & logistics planning (7%)

A number of areas were therefore identified to improve the effectiveness of the current resource within the team:

- Development of more standardized and streamlined financial processes and increased resources and additional skill sets required in finance
- Increased resources required for data management and analysis
- Support with administrative tasks to allow programme staff to focus on technical activities
- Improvement of processes for routine administrative tasks (insurance, travel) to reduce time spent on these activities
- Further resources to be allocated to social mobilization & advocacy

## A MODEL FOR ESTIMATING THE AMOUNT OF RESOURCE REQUIRED

An excel-based tool for analysing country-complexity was developed. This tool had nine influencing criteria which were considered to be key factors affecting the complexity of the PCT programme in each country. Each of these criteria was ascribed a weighting based on the level of impact. The countries were then ranked in terms of complexity of the programme. The inclusion of workload allocation provided data to input into planning the resources required to support the Phase II ICOSA targets.

## FULFILLING THE RESOURCE NEEDS OF ICOSA GOING FORWARD

Using all the identified input data and complexity model, it was proposed that SCI introduce new roles under 3 key functions to adjust capacity to meet existing gaps and to scale up to meet the ICOSA requirements:

**Finance and programme support:** It was suggested that investment should be made in a higher level finance and operations post to lead the significant changes required in this area. It was hypothesized that if the finance and process capacity gaps were filled this would increase efficiency in financial management, and free up project-focused resources for greater programme support and value-add activities.

**Social Scientist:** A need for further resource to assist with the design and implementation of social mobilization strategies has been identified at all levels within the ICOSA programme and across SCI. However to date, robust monitoring of the effectiveness of social mobilization strategies currently employed has not been evaluated. Initially this role would have an operational research focus. SCI has secured funds from a private donor to support this role for a 2 year period. The findings from the work carried out will be of benefit to all ICOSA and SCI programmes.

**Capacity development**: Although capacity building is not a specific output of the ICOSA log frame it is seen as an essential component contributing to the effectiveness and sustainability of the programme. Through this and other review exercises carried out it has become clear that SCI would benefit from a much more proactive approach to capacity building, see 4.4 Capacity Building.

A total of nine roles were recommended, providing the resources and skill mix to support SCIs organisational goals, with appropriate percentage FTE assigned to support the ICOSA programme (Table 5).

**Table 5:** Proposed additional roles to support the delivery of ICOSA Phase II

| New Roles | % FTE | % allocated to DFID | Status |
|---|---|---|---|
| Finance and Operations Lead (Director Level) | 100 | 80 | In post Jan 2015 – Aug 2015<br>Interim in post until Dec 2015 |
| Finance Assistant | 100 | 0 | In post from Feb 2015 |
| Value for Money Officer | 100 | 100 | In post Jan 2015 – May 2015<br>Recruiting replacement |
| Programme Management Officer | 100 | 100 | In post from Mar 2015 |
| Data management / Analysts | 200 | 100 | In post from Jan 2015 |
| Social Scientist | 100 | 0 | Secured funding to be recruited by Dec 2015 |

| | | | |
|---|---|---|---|
| Capacity Building Lead (Director Level) | 50 | 0 | To be recruited by Dec 2015 |

## 3.4 CAPACITY BUILDING

The ICOSA team has taken a more strategic demand-led approach to building capacity both in endemic countries and within the UK team. ICOSA has aimed to identify capacity needs and the best ways to meet them on a country by country and case by case basis. For example with the scale and complexity of the Ethiopian programme, ICOSA has elected to base a UK programme manager Dr Mike French in Addis Ababa for 2 years. Dr French has been able to assess capacity within country partner organizations and, using external resources where required, ensure that the appropriate skill sets and amount of human resource are available in country to continue the programme.

### STRATEGIC APPROACH

SCI is aiming to develop a detailed capacity building strategy which will allow SCI and the ICOSA programme to develop a more systematic approach to capacity building going forward. To support this, SCI has identified the need for a Capacity Building lead at the Director level who will have responsibility for developing a strategy and overseeing its implementation in collaboration with the existing Uganda-based ICOSA African Capacity Building Advisor, Dr Narcis Kabatereine. Dr Kabatereine currently sits on the Working Group on Capacity Strengthening (WG-CS) for NTDs, reporting to the WHO Scientific Technical Advisory Group. The remit of the WG-CS is to provide a conceptual framework of thematic areas for capacity strengthening in preventive chemotherapy to meet the WHO NTD targets for control and elimination, thus the project is well placed to ensure delivery against identified priorities for capacity building in NTD programmes.

### UK AND ENDEMIC COUNTRY CAPACITY DEVELOPMENT

ICOSA has convened and participated in a number of training events that ensure that UK and country-based staff have the appropriate level of skill to effectively deliver the project outputs. These include:

**Project management skills:** ICOSA is focusing on further development of existing staff to improve the ICOSA management structure; Dr Blair has successfully completed PRINCE2 qualification and the Chartered Management Institute accredited Imperial Leadership and Development Programme (ILMDP). Programme managers have also enrolled and participated in ILMDP training on project management.

**Financial management training**: ICOSA has engaged Mango (http://www.mango.org.uk/ an NGO that specializes in the provision of financial management training and services to agencies working in development projects in developing countries) to provide training for UK based programme managers and endemic country accountants. With the strengthening of the SCI finance team it is planned to focus on the development of the appropriate financial management skills for both UK and country based staff to ensure that the new financial processes are embedded and used to maximum efficiency.

**Statistical and data management training**: ICOSA has worked closely with countries to develop capacity in data management and basic statistical analysis. Short term technical assistance was provided to Mozambique to deliver training on data entry and cleaning and generation of summary tables and descriptive statistics. SCIs Senior Biostatistician will visit Ethiopia in October 2015 to deliver data management and statistics training in line with their request. In addition a trip is planned to work with the Tanzanian data management team.

**Training on diagnostic techniques**: ICOSA's Dr Kabatereine and technicians have delivered a series of trainings on diagnostic techniques to a number of other programme teams in Ethiopia, Malawi, DRC, Mozambique and Zanzibar.

**WHO database and Data Quality**: SCI in conjunction with other NTD partners (LSTM, RTI, End Fund, Sightsavers, APOC) have organized and participated in a number of training events facilitated by RTI and WHO on the WHO NTD database, Tool for Integrated Planning and Costing (TIPAC) and the Data Quality Assessment tool. Teams from Malawi, Zambia and Liberia were also supported to attend TIPAC training.

## 4. VALUE FOR MONEY (VFM) AND SUSTAINABILITY

New financial management processes and tools (*see Section 6)* have enabled the analysis of VFM to become standardised across the organisation. The country cashbook and coding system, which has been developed as part of this process, collects detailed data on both programmatic activity and financial inputs which illustrate the cost drivers of programme implementation.

In December 2014, SCI appointed a VFM Officer who was in post for 6 months. During this time there were two significant areas of progress for measuring VFM for the ICOSA programme:

(1) The development of macros in Excel which transfers the cashbook data into a **standardised country level VFM template**. The template then enables the analysis of the country level data to provide cost per activity, cost per input and cost per treatment as primary outcomes. Secondary outcomes are those not included in the ICOSA logframe which are linked to the VFM Metrics and cost per treatment including non-DFID costs (domestic and other donors).

(2) **VFM Metrics**. As discussed further in section *8. Partnerships*, the VFM metrics went through several revisions with SCI and various external partners, including DFID NTD Partner organisations.

| VFM Criteria | VFM Metric |
|---|---|
| **Equity** | Non-attending children being reached |
| **Effectiveness (Cost-effectiveness)** | Cost per treatment delivered |
| | Cost per DALY averted |
| **Efficiency** | Cost per person trained |
| | Treatments delivered per drug distributor |

| | |
|---|---|
| | Workplan and budget implemented on time |
| **Economy** | Cost of inputs by country |
| | Costs of activity by country |
| | Costs of procurement |

## 4.1 PROGRAMMATIC VALUE FOR MONEY

The data provided below are in line with DFID's VFM Framework and are correct at the time of the August External Review. Historical financial data for FY1 to 3 is available, however, it is in supporting documents such as receipts. It is unlikely that ICOSA will have the resources to retrospectively examine the cost data for these years. However, for most countries the data is being retrospectively reconciled from FY4 (2013/4) onwards.

The priority for SCI is to have costs which are comparable year by year, thus current data shown is for DFID/ICOSA expenditure only i.e. does not include other donor costs and a valuation of government contributions (or, opportunity costs). Nevertheless the SCI M&E team are developing templates for how this economic data will be recorded and models for its analysis.

### EQUITY

Equity for the ICOSA programme focuses on gender, with treatment reaching an equitable number of girls who attend and do not attend school, and in high-risk areas where adults are treated, that women also receive treatment. Although there is variation across the countries, validated treatment coverage of boys and girls who attend school is above the minimum WHO threshold. However, in the majority of countries validated treatment coverage in the non-attending SAC is low, with girls and boys still being equitable. The results from the validated coverage surveys, the learnings and the way forward are discussed in more detail in the Progress Section and the Non-Attending SAC Case Study (Annex 3).

### EFFECTIVENESS

SCI is determining how well the outputs produced by ICOSA are having the intended effect i.e. '*spending wisely'* by measuring:

The ICOSA programme reports back on effectiveness measures in the Log-Frame, these indicators of effectiveness are covered in the Progress Section of this report. They are:

- **Health impact**
- **Validated treatment coverage**
- **Cost per treatment**

In addition to the logframe effectiveness measures, ICOSA is also calculating:

**Cost per DALY averted**: As highlighted in the ICOSA Phase II Business Case the economic benefits of the ICOSA programme can be measured as cost per DALY averted. The estimates were cost per DALY averted at £67 in economic terms and £35 in financial terms[10]. The table below shows DALYs averted estimates in ICOSA FY2 to FY5, in comparison to the Business Case and estimates for cost per DALY for all countries where there is a value for cost per person treated.

| Country | Total ICOSA DALYs averted | Business Case DALYs averted | ICOSA cost per DALY averted (£) |
|---|---|---|---|
| CDI | 0.03 | 0.07 | 25.00 |
| DRC | 0.01 | 0.01 | no cost data |
| Ethiopia | - | - | - |
| Liberia | 0.01 | 0.05 | 37.58 |
| Malawi | 0.06 | 0.13 | 21.28 |
| Mozambique | 0.12 | 0.17 | 4.85 |
| Niger | 0.01 | 0.01 | 17.78 |
| Tanzania | 0.02 | 0.07 | 24.07 |
| Uganda | 0.00 | 0.02 | 72.00 |
| Zambia | 0.01 | 0.01 | 56.25 |
| Zanzibar | 0.02 | 0.05 | 26.67 |
| **TOTAL** | **0.27** | **0.62** | **28.55** |

The DALYs averted are currently below that projected in the Business Case, but as the numbers of treatment across ICOSA increase it is fully expected that the DALYs averted will match those projected. The cost per DALY is, however, below that estimated in the Business Case meaning that through the first 5 programme years, ICOSA has been very cost-effective.

### EFFICIENCY

SCI is achieving efficiency through good project management, planning and implementation. The ICOSA programme determines how well it is converting inputs into outputs i.e. *'spending well'* by measuring:

**Cost per person trained**: The data on the number and cost per persons trained by country will allow ICOSA to compare between annual workplans and budgets with what has actually been delivered. Where training has been co-ordinated with other programmes it will enable ICOSA to determine the cost-share and how targets are being achieved using less resources by avoiding duplication of efforts.

[10] Financial costs include those costs funded by DFID, channelled through SCI and Crown Agents to cover programme delivery and management costs and procured goods and drugs respectively. For economic costs, the estimated government contribution of 18% is added as well as the cost of donated drugs

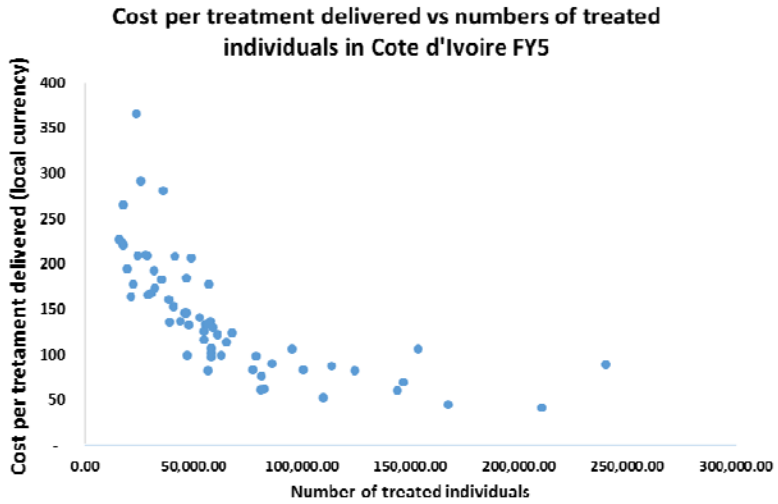
The below table shows how the costs of training of CDDs on the two islands of Zanzibar were shared by SCI and LSTM in FY5 and the average cost per person trained. In FY5 analysis has shown the cost per CDD trained averages £14.31 and £13.91. Such data will allow SCI to create benchmarks for ensuring programmes are spending on track.

| Island | CDDs trained | SCI contribution | LSTM contribution | Cost/CDD trained |
|---|---|---|---|---|
| Unguja | 2634 | 27596 | 9199 | £13.97 |
| Pemba | 1576 | 16139 | 5380 | £13.65 |

**Treatments delivered per drug distributor**: It is projected that as a country increases its experience in implementing PCT programmes it will gain efficiency by increased productivity, for instance, increasing the numbers of treatments delivered by the numbers of people trained to distribute the drugs. For the calculation of this VFM metric, performance data (reported and validated treatment coverage) and process data (training reports) will be used. Preliminary results from Cote d'Ivoire and Malawi indicate that it can range from 131 to 221 treatments per distributor. next we determine the relationship between treatments delivered per distributor and treatment coverage.

**Timely delivery**: Efficiency will now also be measured by the timeliness of implementing activities. In each ICOSA country the dates for planned activities will be compared with the actual delivery dates of those activities, this data is captured in the programme management workbooks, and analysis is forthcoming.

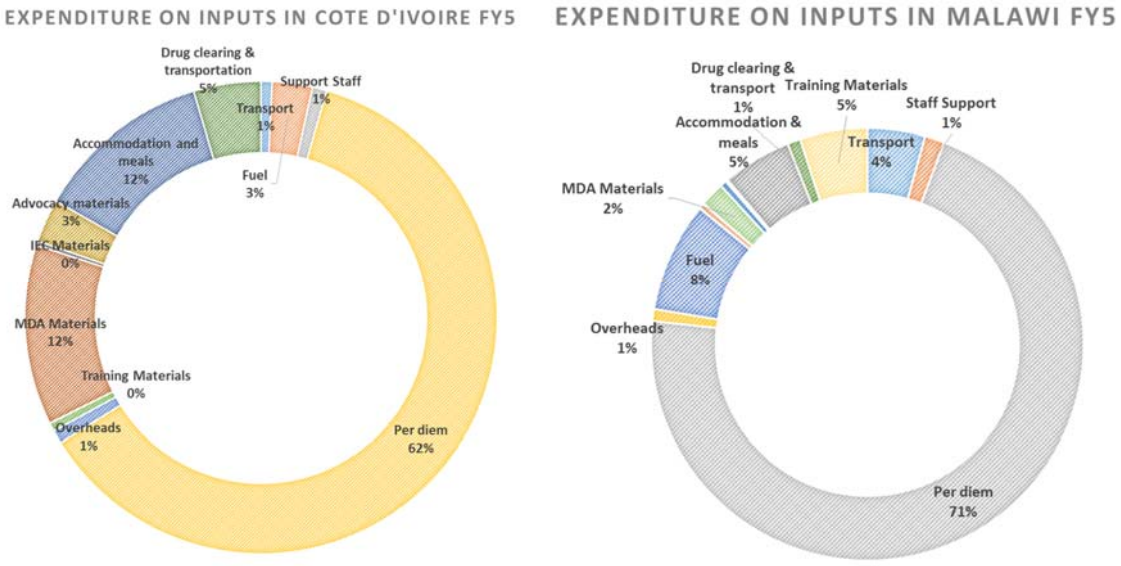
**Economies of scale:** As programmes mature the expectation is, according to published literature on MDA programmes for NTDs, that economies of scale will be reached. This means that more treatments can be delivered at a lower cost per treatment. The figure below shows economies of scale being realised in Cote d'Ivoire. Nevertheless, achieving economies of scale cannot be taken as a stand-alone target at the cost of the quality of programme delivery and ICOSA will continue to use country visits and in-country feedback to ensure one can happen simultaneously with the other.

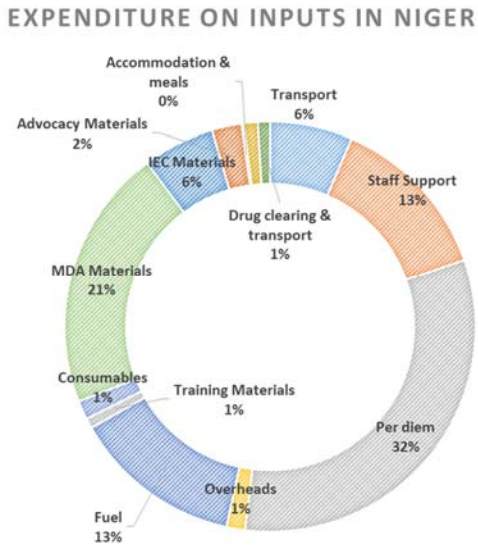


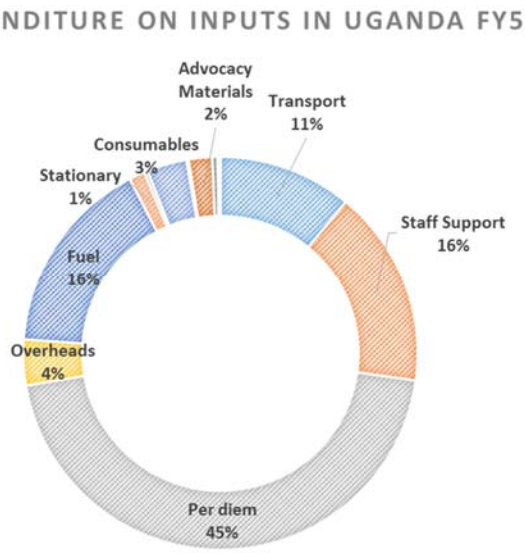
## ECONOMY

SCI is determining whether it is buying inputs of the appropriate quality at the right price by measuring:

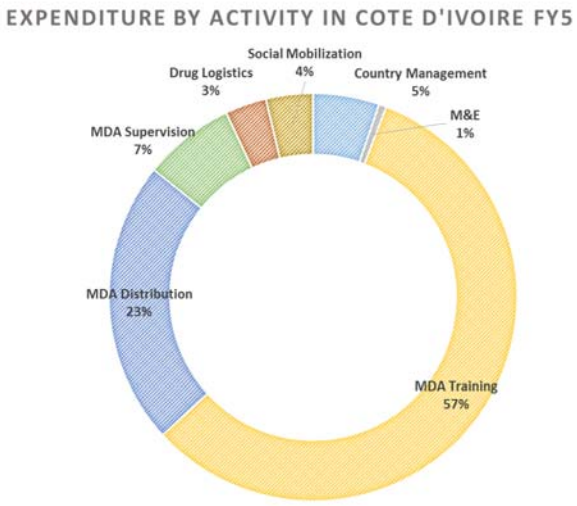
**Cost of inputs**: As reported in previous ICOSA annual reports, and consistent with published literature, financial resources in country are largely spent on *per diems* for government staff at the central, implementation unit (i.e. district), at the front-line health facility level and also to those that distribute the drugs, the teachers and community drug distributors (CDDs). The next major input requiring financial resources varies by country and whether MDA is occurring that year, however fuel and transport are significant key cost drivers. In ICOSA's more mature programmes, staff support is a larger portion of overall costs because the scale of programmes is smaller.

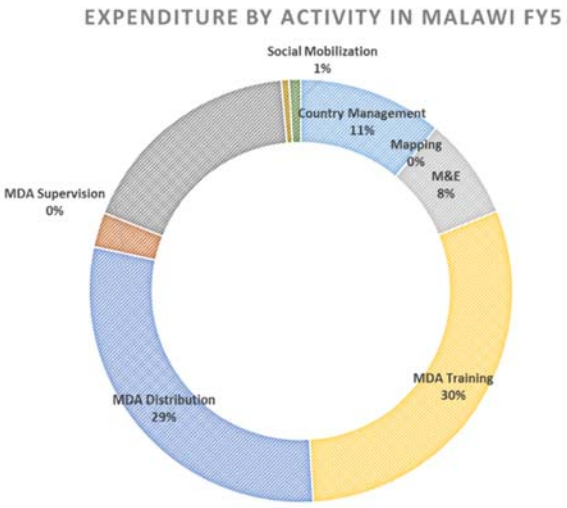


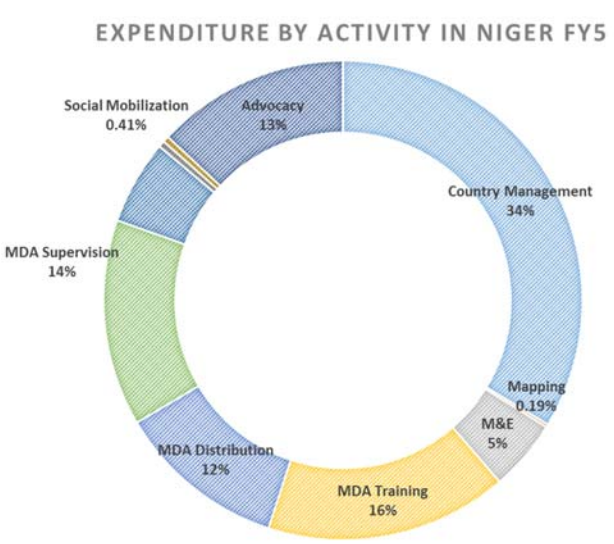


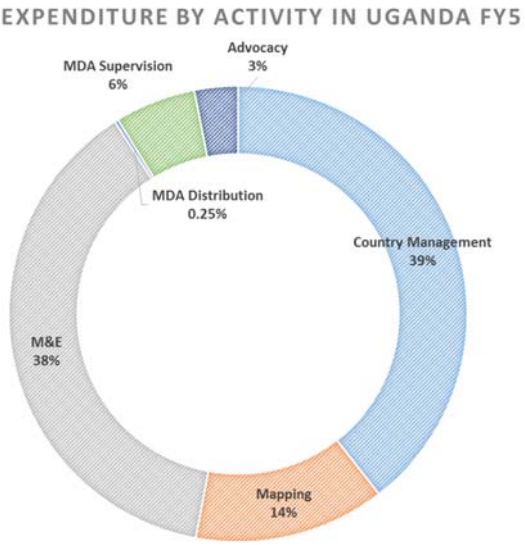




**Cost by activity**: Also depending on the frequency of MDA i.e. whether annual or biennial, is the amount of resource that is apportioned to each of the key programmatic activities. Cascaded training at all levels of implementation has consistently been seen through each ICOSA country, and over time to, use the most resources. This is followed closely by the drug distribution itself. The latter has less resources allocated to it as, in most countries the primary implementers (teachers and CDDs) are paid a *per diem* and travel allowance at training with the expectation that drug distribution is carried out on a voluntary basis.






**Cost of procurement**: The quality and costs of the inputs at the global level for ICOSA i.e. those procured by Crown Agents are valued. Crown Agents have been continuously seeking saving and value for money on the freight and insurance cost. To date, the project has saved approximately £40 – 45K GBP on the Praziquantel and other commodities orders by utilising alternative freight and insurance costs through the CA in-house freight forwarder. Endemic country and ICOSA programme managers report back on equipment and consumable quality and adjustments i.e. by changing level of specification or supplier, are made if necessary. Savings of £8K GBP against Microscopes were made by identifying trustworthy suppliers and undertaking rigorous commercial negotiation. The amount of procured quality inputs being allocated to each country is tracked by the strengthened financial processes, monitored for appropriate use and measured by per person treated. As procurement for PZQ inevitably falls within EU Procurement Directives due to the value (generally in excess of £2 million GBP each year), Crown Agents have placed long-term framework agreement with PZQ suppliers to save time and costs of repeat applying of EU Directives each year.

Short-Term Technical Assistance (STTA) is an additional example of a quality input. Recent examples of this are the statistical assistance can be found in the Evidence Matrix. One example is in Mozambique where the Ministério da Saúde were reluctant in sharing health impact data, collected using ICOSA funds, for analysis by either LSTM or SCI. ICOSA offered to provide in-country statistical support which was accepted, but it was identified that a substantial amount of time would be required to do this, thus a consultant for the STTA with the correct qualifications, statistical skills and language proficiency was employed for 3 weeks to work with the MISAU team. This alternative was a better use of resource rather than the Senior Biostatistician for SCI due to the amount of time it required to be in-country. The STTA was able to build trust with the MISAU team and the data were analysed. The STTA also allowed the MISAU team to realise where it might be better to use resources for health impact monitoring in the

future i.e. to conduct follow-up data collection in schools instead of accruing data in many schools pre-treatment.

The information used to measure the VFM metrics is generated through standardised financial, implementation and monitoring data. An important use of this data is to inform decisions made at a country level and also with the project, across SCI and more globally. Benchmarks are being created at SCI for each input type, activity and cost per treatment to enable us to share the data with our country partners to ensure we can achieve best practice, flag where there may be problems and enable timely adjustments as programmes evolve. The project will also be using the soon to be published WHO paper, on which ICOSA has contributed SCI data and are a co-author, '*Benchmarks for the cost per person of mass treatment against neglected tropical diseases: a literature review and meta-regression with web-based software application.'* Fitzpatrick C, Madin-Warburton M, Schneider T, Fleming F and Biswas G (2015) to guide the expected cost per treatment in the ICOSA countries at each programme stage: start-up, maintenance and 'last mile'.

### SUSTAINABILITY

Sustainability of schistosomiasis control has several dimensions, affecting the ability for eventual donor exit. The primary dimensions at country level are country ownership and country capacity. SCI has recently worked with ICOSA countries to support increased country ownership in several ways, including testing different models of providing technical support such as through provision of in-country staff. Country ownership is also aided by governments recognising what their contributions are and where they could further contribute. As previously mentioned SCI will be capturing the economic costs for government contributions e.g. staff time and building space in each country and feeding this information back to countries. Country ownership can also be measured by endemic countries increasing domestic investments, in line with DFID recommendations and inspired by the Third WHO report on NTDs '*Investing To Overcome The Global Impact Of Neglected Tropical Diseases'* (2015), SCI have begun internal discussion about the possibility of payment by results. Such innovative finance mechanisms in conjunction with the PZQ donations could greatly increase programmatic sustainability.

### PZQ

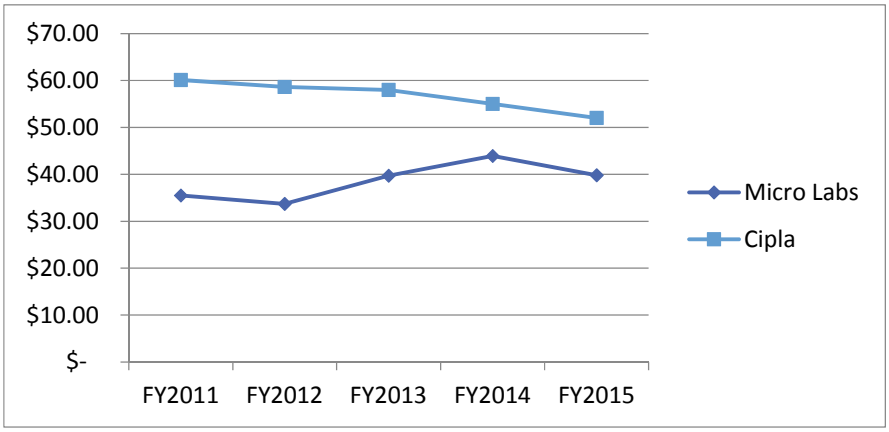
To achieve the benefit of PCT, the project relies on access to quality PZQ in sufficient quantities, at stable prices.

Quality of PZQ is assessed formally through the WHO, with the aim that suppliers will receive Prequalification certification. Prequalification aims to ensure that medicines for high burden diseases meet global standards of quality, safety and efficacy. However, at the commencement of ICOSA, the prequalification process took in excess of two years to complete. Due to the immediacy of the supply required to initiate PCT delivery, the interim measure of applying to the Expert Review Panel (ERP) at WHO was taken.

In 2011, Crown Agents issued a Prequalification questionnaire to all potential PZQ suppliers. Of the 14 responses received from interested companies, 13 were invited to submit tenders, with 9 final

submissions to the WHO ERP. Only 2 sources of supply, Microlabs Ltd and CIPLA Ltd, were deemed technically acceptable to the ERP and approved to supply to the project. Inspections of manufacturing plants of both companies were conducted by Crown Agents and framework contracts were placed with Microlabs, CIPLA and IDA Foundation (as a supplier of CIPLA product) for the continuous call-down requirements over the life of the project. More recently and due to increased engagement with WHO, the Prequalification and ERP review processes for PZQ have been shortened to 20.3 months and 2-3 weeks respectively. PZQ purchasers have been encouraged to work with suppliers to submit to the full prequalification process which consists of a transparent, scientifically sound assessment including dossier review, consistency testing and site visits to manufacturers. ERP approval can continue to be sought as an interim measure. Crown Agents is now working closely in collaboration with WHO and UNICEF to ensure manufacturers engage with the prequalification process to ensure procured PZQ continues to meet global standards.

Price of PZQ will also influence the sustainability of the market supply. The PZQ price rose by 25% between FY2-4 of the project which would ultimately reduce the number of tablets procured, the number of people who can be treated and thus the sustainability of the project in term of scale-up.




However, the unit price of PZQ was $4.14 USD cheaper than in FY2014. This is equivalent of $8,000 USD saving per 1 million tablets purchased when comparing FY2014 and FY2015. We believe that Microlabs improved cost performance could be attributable to the supplier relationship management with Crown Agents through provision of clear debriefing of the tender results and effective contract management through balancing incentives and penalty (such as liquidated damages for delay).

The functioning of the donor-funded market is of prime importance to the sustainability of the PZQ supply. Under the business case model, the assumption that USAID would not change its purchasing volume was made. However, with the increased donation from Merck Serono, USAID has stated that it will scale back purchase in favour of funding delivery of donated medication in recipient countries. ICOSA will maintain purchasing in the region of 26 million tablets per year, on the basis that the price remains stable. The key to continuing project success, and particularly should the purchase market decrease, will be to ensure that donated drugs are allocated to ICOSA-supported countries where funding is provided for delivery. ICOSA is represented by SCI and Crown Agents at annual meetings to

coordinate the drug supply of PZQ (and ALB/MEB) into recipient countries alongside Merck and WHO. SCI also maintains excellent working relationships with the donation programme within Merck Serono , including frequent discussion on anticipated drug requirements, treatment delivery dates and treatment reporting from recipient countries.

## 5. RISKS

### 5.1 PROJECT LEVEL RISKS

Risks at the project level are reviewed on an annual basis at the time of the Annual Review. Current status is as follows:

| **Risks** | **Probability (3 high, 1 low)** | **Impact (3 high, 1 low)** | **Mitigation strategy** |
|---|---|---|---|
| PZQ shortage as a result of shortfalls in donations or procurement. | 3 (change from business case: +1) | 3 (change from business case: 0) | ICOSA is represented on the WHO Donated Medication Supply Coordination group, which meets annually to coordinate the supply of drugs for NTD programmes. WHO, USAID (and their purchasers), Merck Serono, Crown Agents, SCI, World Vision and DFID work closely to ensure no duplication in the supply of PZQ to countries.<br><br>The current major challenge to the project is the assumption that Merck-donated PZQ will be made available by WHO to ICOSA supported countries. Currently forecasted supplies are only scheduled to be received by 2 (excluding Zanzibar) project countries. Additionally, USAID, a major purchaser of PZQ, have stated that they will begin to scale-down their purchase volumes given the increase in donated PZQ. Business case modelling predicts that a scale-down in USAID procurement will have a market impact for PZQ.<br><br>This risk has been escalated to DFID to work together on developing an appropriate strategy to advocate for increased PZQ resource to match DFID delivery support. |

| | | | |
|---|---|---|---|
| | | | Continued market due diligence is required to determine the optimal procurement strategy to manage supply. Continued encouragement to potential manufacturers to submit to the WHO Prequalification process will ensure that their product will be competitively considered during tenders. |
| PZQ price rise | 2<br><br>(change from business case: 0) | 2<br><br>(change from business case: 0) | As above, under PZQ shortage.<br><br>Crown Agents continue to purchase PZQ against a competitive tendering process. |
| Difficulty in scaling up on part of contractor | 1<br><br>(change from business case: 0) | 1<br><br>(change from business case: -1) | Finding appropriate staff to manage scale up at SCI was not considered a major risk, and indeed the project staffing is continually appraised and strengthened where necessary. DFID monitor this aspect of the ICOSA performance. |
| Resistance to PZQ and side effects | 1<br><br>(change from business case: 0) | 1<br><br>(change from business case: 0) | Resistance to PZQ has not yet been encountered and there is good evidence that the risk of resistance developing is low.<br><br>Very few side effects have been recorded (and these are transient). Appropriate information on side-effects and longevity will be provided at the time of PCT campaigns, and taking food prior to treatment will be encouraged. The programme will monitor side-effects and investigate cases experienced through appropriate MoH channels in each country.<br><br>The project will also ensure adequate training for drug distributors to distinguish children who are ill at the time of treatment to exclude them from taking medication. |
| Climate change risk | 1<br><br>(change from | 1<br><br>(change from | Climate change impact is low in the course of the project. ICOSA has been asked to commission work on potential future impact of |

| | | | |
|---|---|---|---|
| | business case: 0) | business case: 0) | climate change but question the validity and value for money of commissioning studies at this time. |
| Financial risk<br><br>(new risk identified by ICOSA) | 2 | 2 | SCI has developed an assessment checklist to assess the capacity of its partners for due diligence also to be used for analysing risks, setting priorities for capacity building and to agree with partners on work plans for development and mitigation of risks.<br><br>SCI in the past used to transfer annual funds in one annual instalment close to the time of the majority of activities. As part of risk management, SCI splits the annual contribution into several instalments, with subsequent transfers made on the basis of a threshold level of previous spend<br><br>SCI changed the model of partnership when the financial management capacity of MoH in countries proved to be challenging by entering into a partnership agreement with a third entity (after review of their accounting procedures) to act as an intermediary to channel the funds to the MoH by activity and to account for the expenditures. |

## 5.2 COUNTRY LEVEL RISKS

During the annual planning cycle, a risk register has been developed to be completed for each country to identify all programmatic, financial, environmental and political risks which may influence programme efficiency in the forthcoming year. Programme managers also maintain a risk and issue log to record all issues which may impact successful implementation.

On a monthly basis, the issues and risks are reviewed and mitigation strategies discussed. Where appropriate, risks and issues can be escalated to senior management at any time where a critical issue has been identified which requires resolution to move the programme forward. Primary risks are country level are:

| **Risks** | **Probability** | **Impact** | **Mitigation strategy** |
|---|---|---|---|

| | (3 high, 1 low) | (3 high, 1 low) | |
|---|---|---|---|
| Conflict affects implementation | 2<br><br>(change from business case: 0) | 2<br><br>(change from business case: 0) | ICOSA works with governments to select areas to be treated with emphasis on safety, prevalence and intensity.<br><br>ICOSA encourage treatment timetables to be adjusted where political elections may influence the successful implementation of programmes.<br><br>ICOSA seeks to work with trusted community leaders and established NGOs to minimise disruption in case of insecurity. SCI will also aim to ensure that the programme does not inadvertently create or exacerbate conflict.<br><br>High risk security training provided to ICOSA staff.<br><br>Improved communications (access to a satellite phone) at times of essential travel to at risk areas. |
| Poor compliance with treatment | 1<br><br>(change from business case: 0) | 3<br><br>(change from business case: 0) | Poor compliance is expected to be unlikely in schools as treatment is closely supervised by teachers who directly observe drugs being taken. Compliance is monitored by SCI through regular surveys.<br><br>ICOSA advocated for distributors selected by the community (i.e. are trusted) to deliver the drugs. The strategy of community-selected distributors has been very successful in other programmes, e.g. African Programme for Onchocerciasis Control. |
| Difficulty in scaling up as a result of lack of country capacity for implementation and/or logistical | 2<br><br>(change from business case: 0) | 2<br><br>(change from business case: 0) | Country capacity development where appropriate. Capacity building strategy is a key focus for SCI in the immediate future.<br><br>Supporting the Working Group for NTD Capacity Development to implement priorities |

| | | | |
|---|---|---|---|
| difficulties | | | at country level. |
| Exclusion of hard to reach | 2<br><br>(change from business case: 0) | 1<br><br>(change from business case: 0) | Advocating the use of multiple delivery platforms (school-based, community-based etc) to ensure high coverage.<br><br>Use of Child Health days which concurrently deliver immunisation, bednets and micronutrient supplementation through the health system which often achieve high coverage. |
| Motivation of community volunteers | 1<br><br>(change from business case: 0) | 1<br><br>(change from business case: 0) | This a broader, well-recognised potential problem whenever community health workers/volunteers are involved in service delivery. SCI works closely with governments and other partners to consider different ways to motivate volunteers, based on available evidence internationally. |

## 6. PLANNING AND REPORTING PROCESSES

SCI engaged Accenture Development Partnerships (ADP) to up-date and enhance SCI's programme management processes and develop a series of tools to increase the effectiveness of planning and reporting for the ICOSA project to include all critical activities in the programme cycle. The scope of work included a review of the existing SCI/Imperial College and FPSU/LSTM central operations and identified processes that could be modified to allow ICOSA to undertake work more effectively and efficiently while working within the institutional frameworks.

New tools were created or existing tools augmented to:

- track project targets and key programme metrics
- implement a work package approach with status and milestone reporting
- allow issue and risk management

### 6.1 APPROACH TO IMPROVED PLANNING

ICOSA has incorporated country work plans, developed in conjunction with MoH and key stakeholders, into newly developed, more detailed work packages. These work packages incorporate country and ICOSA-specific objectives and key performance indicators. The responsibility for the completion of each

work package is delegated to named team members thus increasing accountability for achieving objectives. Each work package comprises all country specific activities over each financial year. ICOSA is also capturing requests from MoH partners for non-financial support within a newly developed standardized template which is included in the work package. This will contribute to the development of a comprehensive set of annual objectives for each country programme, with timelines against which progress would be tracked through review of key performance indicators and summary reports.

## 6.2 PROCESSES TO FACILITATE MORE EFFICIENT REPORTING

Using findings from an internal systems review, carried out by Imperial College's auditors Deloittes, supported by ADP at the request of SCI and recommended in the 2013 MTR, SCI has developed a series of standardized processes for improvement in both financial and programmatic reporting including:

- Financial tracking and standardized financial reporting
- Assessment and optimization of endemic country budgetary cycles for alignment with ICOSA requirements
- Issue and risk management procedures and reporting processes within work packages
- Development of comprehensive work packages (as described above) with appropriate reporting functionality
- Framework and development of a series of standardized reporting templates to ensure the reporting of process and impact indicators is as streamlined as possible

*See* Annex 6: Programme Management Processes *and* Annex 7: Finance Management Processes

### PROGRAMMATIC REPORTING

The development of comprehensive programme work packages aids more effective planning and also reporting against key milestones and objectives. Monthly programme status meetings, with the SCI Implementation and Monitoring & Evaluation Senior Managers, allow an appropriate level of monitoring and provision of support to programme managers. Any issues arising are captured on log and escalated as required. Status reports of all countries are available for regular review by senior management teams and the quarterly Programme Management Board meetings. The information from the reports is compiled for the Annual DFID Report (end April) and Annual Review progress report (September). Issue logs allow prompt identification of issues and mitigation strategies being developed. Also the standardization of reporting across all countries makes recognizing systemic and more generalised issues easier and highlights lessons learned that can be implemented in other country contexts.

### FINANCIAL REPORTING

SCI has developed a more robust financial management system with the support of ADP and utilised across the ICOSA project:

**A standardised cashbook reporting tool** has been rolled out across all countries. This has facilitated the collection of standard data across the project. SCI discussed with Imperial College the challenges it is

facing interfacing this system with the College's existing financial management software which does not produce information at the level of detail nor in the different dimensions (activity, district, source of funding etc. for all the countries expenses) required for comprehensive financial analysis. The College has agreed that SCI can invest in its own accounting software to rectify this problem. Terms of reference for the development and installation of the software are currently being drafted.

**Development of a master budget:** A master budget for the organisation, including the ICOSA project, has been developed to capture both central costs and endemic country costs in addition to appropriately allocating staff costs. This allows for more accurate tracking of costs, forecasting and allocation across different donors, particularly for country programmes which are funded from more than one source.

**Contracts**: Contracting with partners has been strengthened by tracking and follow-up with the legal department at Imperial College and appointing a focal point for all contractual issues within SCI. Follow-up and prioritisation meetings occur on a fortnightly basis. Donor budgets are translated into an Imperial College budgeting tool to be approved in a timely manner with country contacts streamlined to include multiple funding sources with an emphasis of deliverables and funding on an activity basis.

**Improved monitoring**: Improved financial management through closer monitoring of activities has been achieved through the development of several tools and processes such as:

- A consolidated financial statement demonstrating the budget vs actual split by restricted (including ICOSA) and unrestricted sources of funding;
- Monthly meetings being held between the finance team and programme managers to review the expenditures of each country and;
- Regular follow-up with the endemic country accountants on the quality of the supporting documentation, timely recording and accuracy of figures.

**Finance team capacity**: SCI strengthened its finance team capacity according to ADPs recommendations to better support the country programs and to increase accountability and transparency through the:

- Creation of a Finance and Operations Manager role
- Development of a skilled finance team in London led by a qualified finance professional
- Focus on training of endemic country accountants and task shifting where appropriate

The team has expanded to four full time staff including a qualified management accountant who has provided support for reconciliation of data from previous years, preparation of budget vs actuals commentary and confirmation of opening balances. The Value for Money officer will also work with the finance team and have sole responsibility for the data capture, analysis and reporting on cost data, including cost per treatment.

Going forward the newly recruited Financial and Operations Senior Manager will support the running, maintenance and up-dating of the financial management processes. An SCI financial strategy is also in development.

# 7. PARTNER LINKAGES

## 7.1 LINKS TO OTHER NTD PROGRAMMES

SCI has a long history of working collaboratively with other NTD programmes and stakeholders both at the country level, nationally and internationally.

### IN COUNTRY LINKAGES

There are common elements to the technical implementation of each PCT programme that are greatly enhanced by joint planning and coordination. In order to take advantage of these efficiencies SCI engages with other NTD programmes through a series of mechanisms.

**Contractual arrangements**: In areas where current joint working and collaboration between the partners involves responsibilities for specific activities and deliverables, arrangements can be governed by formal sub-contracts and agreements such as that with FPSU within the DFID contract. In addition, SCI has a formalised collaboration, with DFID NTD Partners Sightsavers. SCI contributed technical into the development of SCH and STH component of the Quality Standards Assessment Tool, provided mapping protocols for SCH and STH and technical guidance on health impact and coverage surveys. See Annex 8.

**Identifying opportunities**: However, by developing close working relationships with in-country NTD programme partners and other stakeholders, other areas of coordination and collaboration have been identified. These bring programmatic benefits, increase impact across the programmes and reduce the potential risk of duplication and overlap in implementation. Examples of these types of linkages include:

- ***Post-ebola readiness assessment in Liberia*** – SCI, CNTD, Sightsavers and MAP worked jointly to carry out this health assessment survey that allowed the resumption of the Liberian NTD programme in a timely manner
- ***Joint budget setting*** – partners supporting the SCH and LF programmes in Zanzibar and Tanzania were able to develop a joint implementation budget to maximise cost sharing and avoid duplication.
- ***Partners meeting*** – In the complex setting of DRC, where there are a large number of donors and limited internal capacity, an NTD partner group that supports the DRC NTD programme has been formed to coordinate activities to reduce the burden on the country and to increase efficiency and transparency.
- ***Coordination on treatment strategies***: In Uganda the RTI Envision (USAID funding) and SCI's ICOSA programme support the MoH NTD programme. Originally working in some overlapping areas, but focusing on different NTDs the partners have agreed, on the request of the MoH, to implement where there is one donor per district ensuring less duplication and maximising impact.

### NATIONAL/GLOBAL PARTNER LINKAGES

ICOSA team members play an active role in NTD advocacy organisations at the national and global level including:

***UK Coalition against NTDs***: SCI and FPSU were founding members of the UK Coalition against Neglected Tropical Diseases (NTDs) which is a collaborative partnership between 17 UK organisations actively engaged in NTD research and implementation and in advocating for effective sustainable NTD control programmes. SCI held the chairmanship of the coalition from 2011 – 2013.

***NGDO NTD Network***: SCI and FPSU are active members of the NGDO NTD Network, established in October 2009 to create a global forum for nongovernmental development organizations (NGDOs) working to control of NTDs. ICOSA members regularly present and assist in the organisation of meetings.

***Global Schistosomiasis Alliance***: SCIs is a founding members of the Global Schistosomiasis Alliance. This group was convened by Merck Serono, but its membership reflects all SCH stakeholders with an aim of supporting the WHO elimination target for SCH.

***World Health Organization (WHO)*** SCI has enjoyed a close working relationship with WHO Former Assistant Director General Dr David Haymann, NTD Department lead Dr Lorenzo Savioli and his successor Dr Dirk Engels, sit on SCIs Advisory Board. Members of SCI have all served on WHO specialist committees or advisory boards.

## 7.2 LINKS TO WATER AND SANITATION (WATSAN)

A growing recognition of the need for environmental and behavioural changes for the sustained control of NTDs has contributed to a growing interest in WASH and NTD sector collaboration. SCI has been involved in recent efforts making significant contributions to progressing dialogue and collaboration between sectors.

International WASH/NTD forums:

- *Bill and Melinda Gates Foundation Round Table*: SCI participated in first WASH and NTD Roundtable meeting in Seattle, hosted by BMGF, in December 2012, from which a PloS NTD paper[11] was produced highlighting opportunities, challenges and next steps for collaboration.
- *NTD NGDO Network (NNN)*: Following further discussions at the September 2013 NNN Meeting in Brighton, where several SCI staff participated in WASH group sessions, the NNN Executive Committee recommended a WASH Working Group be establish to work with the already existing disease-specific working groups. In July 2014, SCI's Director of Monitoring and Evaluation was solicited and accepted to be the first NNN WASH Working Group Chair and shortly after participated at the European WASH NTD Roundtable, hosted by the SHARE consortium, and the 5th NNN Meeting in Paris (September 2014). The working group is made up of several WASH experts (WaterAid, FHI 360) and NTD disease specific experts (SCI, LSTM, PCD,

[11] Freeman MC, Ogden S. Jacobsen J, Abbott D, Addiss DG, et al. (2013). Integration of water, sanitation and hygiene for the prevention and control of neglected tropical diseases: A rationale for intersectoral collaboration. PLOS Neglected Tropical Diseases, 7(9):e2439. doi:10.1371/journal.pntd.0002439

International Federation of Anti-Leprosy Associations, RTI-NTDs, RTI Mozambique, Fred Hollows, Sightsavers, Evidence Action and Children Without Worms).

- *Progress in collaboration between WASH and NTDs*: Since the 2012 Roundtable, significant progress has been made. Advocacy and policy efforts have demonstrated success through WASH being increasingly recognised and promoted by the NTD sector. More specifically SCI has been involved in research and systematic reviews on the relationships between WASH and STH and WASH and schistosomiasis[12] which has involved partnerships with the Federal Ministry of Health and Public Health Institute in Ethiopia, within Imperial with the Partnership for Child Development and the Faculty of Engineering (Department of Civil and Environmental Engineering), and with other academic institutions most notably Emory University and the Swiss Tropical Institute.
- In its capacity as the *NNN WASH Working Group Chair*, SCI has been heavily involved in several collaborations which have developed strategies and tools that will guide SCI and its country partners in the coordination of WASH and NTD activities. The WHO WASH-NTD Strategy and Action Plan to be launched at Stockholm World Water Week in August 2015 will have a set of implementation deliverables for governments and NGOs to work towards. Alongside this has been a Delphi survey to build consensus between WASH and NTD sectors on what are realistic joint indicators for national plans to incorporate and to measure impact from stand-alone or joint implementation. The final round of this Delphi process will take place at the 6th NNN in September 2015. Following the launch of both programmatic tools SCI will support ICOSA country partners to build in the recommendations and incorporate the appropriate joint indicators.
- Potential coordinated pilot projects with WASH partners – World Vision Australia and Ethiopia, and in Burundi the Belgian Red Cross and UNICEF, have funding almost secured.

Future Commitment: SCI recognises that if targets for the interruption of transmission are to be achieved, there is a need to incorporate behaviour change messaging for reducing the risk of exposure to SCH and the STH and, where feasible, to coordinate with WASH sector partners. We have made significant progress in building partnerships and links to improve future implementation.

## 7.3 OPPORTUNITES FOR FURTHER COORDINATION

SCI and FPSU have been given the opportunity to further coordinate with other agencies in receipt of DFID NTD support through the development of the "Coordinated Action against NTD" initiative initiated by DFID in 2014. Within this initiative partners propose to create a more formalised cost effective consortium of implementing partners with the goal of achieving integration across the DFID NTD programmes (Annex 9). The consortium aims to identify the approaches that maximise cost efficiencies

[12] Grimes JET, Croll D, Harrison WE, Utzinger J, Freeman MC, Templeton MR (2014) The Relationship between Water, Sanitation and Schistosomiasis: A Systematic Review and Meta-analysis PLoS Neglected Tropical Diseases. 8(12):e3296. DOI:10.1371/journal.pntd.0003296
Grimes JET, Croll D, Harrison WE, Utzinger J, Freeman MC (2015) The role of water, sanitation, and hygiene in reducing schistosomiasis: a review. Parasites & Vectors 8(1):766. DOI:10.1186/s13071-015-0766-9
Grimes JET, Tadesse G, Mekete K, Wuletaw Y, Gebretsadik A , French MD, Harrison WE, Drake LJ, Gardiner I, Yard E, Templeton MR. School water, sanitation and hygiene (WASH) and intestinal helminths: national mapping in Ethiopia (PLOS NTDs in press)

and additional impacts. Where different preventive chemotherapy programmes are being delivered in the same geographic locations, partners will work together to co-ordinate programme resources and harmonise data management practices. The consortium is also committed to working within, and further developing, coordinating mechanisms and tools for example endemic country NTD national plans supported by AFRO, the WHO national database and the Tool for Integrated Planning and Costing (TIPAC). A number of opportunities for further coordination were identified under three main areas of focus for this group:

- Programme integration
- Reporting of results and assessing impact
- Evidence sharing and intelligence gathering

A further exercise was carried out to make a quantitative assessment of cost benefit and time-frame of any efficiency of these approaches to highlight some immediate actions. One area highlighted for immediate action was the standardisation of the metrics used in the calculation of VFM of DFID supported NTD programmes. In summary:

**VFM Coordination Activity:** SCI has developed a set of VFM metrics which align with the DFID VFM Framework[13]. The VFM metrics allow the ICOSA programme a better understanding of costs and relevant and comparable indicators on Economy, Efficiency, Cost-Effectiveness and Equity. The VFM metrics have been developed through coordination with several SCI partners:

- SCI's M&E Director worked in partnership with ADP consultants to establish the first set of metrics in July 2014.
- Following the appointment of an, ICOSA supported, VFM Officer the metrics were further revised in February 2015 in consultation with Professor Deborah McFarland from the Department of Health Policy and Management at Emory University
- In March 2015, SCI led a meeting on reviewing the SCI VFM metrics with SightSavers and CNTD where the potential for at least one cross-cutting VFM metric could be used by all partners across DFID funded NTD projects. The general conclusion was that cost per person treated (by any of the DFID partner interventions) would be the most realistic cross-cutting metric and that the costs included in this would need agreed upon standardisation between the programmes e.g. direct financial costs only and what exactly is covered under that. In addition the reporting of 'shared costs' as a result of integration were discussed with further decision to be made on how these are reported.
- SCI is to initiate a follow on meeting will be held in September between the DFID NTD Partners and, on the recommendation of Iain Jones (DFID Advisor), for DFID to be invited for feedback on the proposed common metrics.

[13] DFID's Approach to Value for Money, Department for International Development (July 2011)) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49551/DFID-approach-value-money.pdf