KIT Royal Tropical Institute

Cost-effectiveness and efficiency assessment of the Inspire2Care program, 2011-2013

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Acronyms

ANC	Antenatal care
CBR	Community-based rehabilitation
CO	Country office
DALY	Disability-adjusted life year
DDC	District Development Committee
DHO	District Health Office
DPO	Disabled persons organization
FCHV	Female community health volunteer
GBD	Global burden of disease
HFOMC	Health Facility Operation & Management Committee
HO	Home office
HR	Human resources
I2C	Inspire2Care
ICF	International Classification of Functioning
KIT	Royal Tropical Institute
N/A	Not available
NFDN	National Federation of the Disabled Nepal
NLR	Netherlands Leprosy Relief
NPR	Nepalese rupee
P&R	Prevention and Rehabilitation
S&C	Share and Care
VDC	Village Development Committee
VDRC	Village Disability Rehabilitation Committee
WCDO	Women and Children Development Office
WHO	World Health Organization
WHO-CHOICE	World Health Organization-CHOosing Interventions that are Cost-Effective

Executive Summary

Since 2011, Karuna Foundation Nepal is implementing a disability prevention and rehabilitation program, previously known as Prevention and Rehabilitation (P&R) and later changed to Inspire2Care (I2C), in two districts in Nepal. I2C includes both prevention-related activities (largely in collaboration with local health posts) as well as an assessment of all children in the village with disability, development and execution of individualized rehabilitation plans for each child.

In 2014, Karuna Foundation Nepal, Netherlands Leprosy Relief (NLR) and Liliane Foundation entered into a joint partnership to implement a modified version of the Inspire2Care program in additional districts in Nepal. NLR and Liliane Foundation commissioned this independent, external assessment on the cost-effectiveness and efficiency of the implementation of the first phase of the program by Karuna Foundation Nepal (during the period August 2011 to December 2013). The assessment also provides some forward looking at the partnership expansion with regards to cost-effectiveness and efficiency but also duplication, sustainability and replicability.

Completed during the period November-December 2014, this assessment included extensive document review, a field visit to Nepal, a cost-effectiveness analysis looking at cost per DALY averted and thoughtful reflections on a wide range of issues.

The assessment has found that the I2C program cost 23,3 million NPR (204.823 euros) to implement over the period August 2011 to December 2013, of which 94% was funded by Karuna and 6% from local resources (note: this excludes prevention-related expenditures of approximately 26% of total expenditures, see explanation elsewhere in report). 33% of resources were spent locally (either as contributions to the VDRC or Karuna program support costs) and 67% of expenditure was incurred at central or home-office level. In total an estimated 1.065 DALYs were averted from the treatment and rehabilitation components (including children as well as adults); the prevention components were not assessed. This gives a cost per DALY averted of 21.870 NPR (192,34 euros). Using WHO benchmarks, this program can be considered highly cost-effective as implemented during the pilot phase.

Because the period under evaluation was the initial phase of the program (pilot), there are significant costs for conceptualization, designing, testing, reflection and redesigning which should continue to provide returns in coming years. If annualized over a period of five years, for example, which is the duration of the program per VDC, the cost per DALY averted in the period August 2011 to December 2013 would decrease. Additionally, in the coming years further gains may be made by the children currently under rehabilitation; although at an additional cost, this has the potential to further improve cost-effectiveness.

Additionally, it is important to note that some of the major benefits or gains from the program – particularly the community mobilization around disability, improvements in attitudes of community members towards persons with disability and social cohesion – have not been measured or captured in the cost per DALY averted statistic.

It is my opinion that the program was implemented in an efficient way during the period August 2011 to December 2013. Karuna Foundation Nepal has taken measures to cut costs wherever possible and frequently makes use of other existing resources (assistive devices funded by other organizations or programs and hospitals

with their own funding for patient treatment). This, combined with embedding the program fully within existing government structures and grass root structures, ensures no duplication.

The program is designed to be sustainable, and shows strong signs of being so in Sunsari, where commitment to I2C appears to be high and local financial contributions are nearly on-par with those required in the first three years of implementation. In Rasuwa local financial contributions to the VDRC funds were much less, although non-financial commitment to the program appears to be significant. A proper sustainability assessment could be done in a minimum of two years in Sunsari and three in Rasuwa when Karuna's technical support is withdrawn as per the implementation agreement.

With regards to the expansion phase of the program, Karuna Foundation Nepal has taken further measures to reduce costs and improve financial sustainability, although a rough estimate of cost-effectiveness of the first two years of the expansion phase indicates the program may be less cost-effective than implemented in the pilot phase. Some changes have been made to the budget format that improve readability although I make suggestions and recommendations for additional changes.

This report ends with a number of recommendations to help improve the cost-effectiveness of the I2C program in the expansion phase, divided into primarily budget-focused recommendations and more programmatic recommendations which may have budgetary implications. In summary, budget recommendations include lowering head office and country office expenses, strengthening systems to ensure local contributions are made, clearly dividing roles, responsibilities and tasks between Karuna and NLR in the expansion phase to avoid duplication of costs and considering office arrangements. There are also a number of suggestions for improving the format and readability of the expansion budget. On the program side, recommendations include not starting the expansion phase in Rasuwa until the first phase is fully funded, focusing on children who have not made improvements and supporting parents and families more (both of which I believe can improve the effectiveness of the intervention for the disabled child or adult), utilizing the strong working relationships with district and village level authorities for other disability- or development-related purposes, and a strong M&E system which incorporates a quantitative improvement score and includes looking at prevention activities, cost-effectiveness, burden of cost-shifting to parents and the impact of adding adults.

1 Background

1.1 *Assessment*

In 2014 Netherlands Leprosy Relief (NLR) and Liliane Foundation have entered into a joint partnership with Karuna Foundation to expand Inspire2Care (I2C), a holistic disability prevention and rehabilitation program implemented by Karuna Foundation Nepal in two districts in Nepal over the period August 2011-December 2013, known as the first phase. The joint venture is expanding Karuna Foundation Nepal's I2C project both in scope as well as geographical coverage.

To provide proper insights to justify decisions on steps to be taken in this process, Liliane Foundation and NLR commissioned an external evaluation of the first phase of I2C. This is essentially a value for money assessment which looks at both the cost-effectiveness and efficiency of I2C as implemented in Rasuwa and Sunsari districts in Nepal over the period August 2011-December 2013.

This assessment has the following objectives:

1. Conduct a concise contextual analysis of major actors in the field of health and major health problems in Nepal but such with a focus on disabilities.
2. Evaluate the *Inspire 2 Care* project as developed by the Karuna Foundation during the first phase (period August 2011-December 2013) on:
    a. Its cost effectiveness and – efficiency, with special emphasis on the following sub questions:
    b. Have project results and outcomes been achieved with an efficient use of (financial) resources?
    c. Could the objectives of the project be achieved more cost effectively with different or differently organized project interventions?
    d. Could the objectives of the project be achieved more cost effectively with a different balance between overhead, indirect costs and direct costs and/or with an alternative organizational structure, both at country office in Kathmandu and field offices?
    e. The long term sustainability of the approach, looking at it from a wider perspective including specialized care for persons with disability who have long term high support needs
    f. The replicability of the approach in the Nepali context as elaborated under 1
3. Provide proper insight in the structure of the currently proposed budget for an upscaling of *I2C* (period 2014-2018) and recommend on restructuring if such is deemed beneficial.
4. Provide insight in the changes in budget composition for the scaling up phase compared to the budget of the first phase and recommend on expected changes for cost-effectiveness of the project if *I2C* would scale up according to the proposed budget.

5. Set common definitions for budget- and expenditure categories as well as calculation principles so that alternative models of the *Inspire to Care* project may be developed and could be compared as to their cost efficiency and - effectiveness.

The full terms of reference are included in Annex 5.

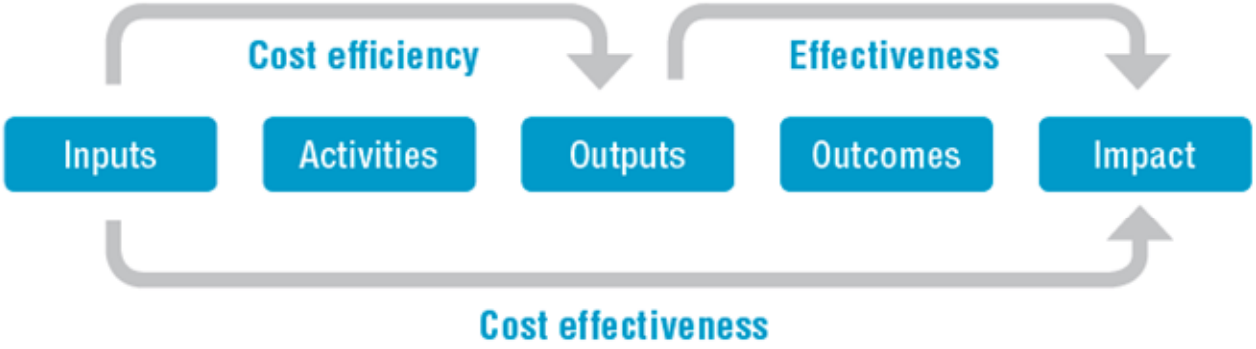
In November 2014, Kelsey Vaughan, Health Economist, Royal Tropical Institute (KIT), Amsterdam, The Netherlands, was contracted to complete the assessment during the period November-December 2014. This is the assessment report. The sections that follow outline the methodology used for the assessment, and then discuss findings in detail per objective.

2 Methodology

This section describes the methodology used in this assessment. The assessment included review of budgets, expenditure reports, various results files, program documents and reports and other related documents. The health economist spent six days in Nepal visiting both districts where I2C was implemented (Rasuwa and Sunsari) during the period 2011-2013. A number of meetings were also held in Kathmandu. A list of reviewed document is provided in Annex 2. The travel itinerary detailing meetings held and persons met is provided in Annex 4.

The assessment covered two main topics: cost-effectiveness and cost-efficiency. Figure X shows the relationship between cost-effectiveness and cost-efficiency.

Figure 1: Relationship between cost-efficiency and cost-effectiveness



Source: International HIV/AIDS Alliance, July 2011.

The detailed methodology for assessing each is detailed below.

2.1 *Measuring cost-effectiveness*

Cost-effectiveness in this assessment refers to the generic term for economic evaluations comparing the costs and benefits of two or more interventions or programs and not the specific cost per natural outcome (Drummond et al, 2005). This cost-effectiveness assessment takes a program (implementer) perspective, meaning only costs and benefits incurred by the implementer are included, and uses the cost per DALY averted measurement (also known as cost-utility analysis). Cost per DALY averted is a common measurement of cost-effectiveness, used extensively by the World Health Organization (WHO). We compare the costs and benefits of the I2C program with the cost per DALY averted of other health programs implemented in Nepal and elsewhere. The below sections detail the methodology for assessing the costs and benefits of the I2C program.

2.1.1 Measuring total expenditure

The first step in assessing the cost-effectiveness of I2C was to identify how much money was spent, in total and from all sources, on the program. This type of assessment always uses actual expenditure (not budgeted amounts). Total expenditure was derived from multiple sources as it needed to include Karuna contributions as well as local resources from VDCs (through the District Development Committee (DDC)'s budget allocation for

disability of approximately 2-3% of the total budget, anecdotally reported and coming from VDC budget allocation guidance of “atleast 15% of budget to targeted programs benefiting economically and socially marginalized group -Senior citizens, Marginalized groups, Indigineous people, People with Disability, Muslim, Terai inhabitants and backward groups"), district-level organizations like Women and Children Development Office (WCDO), families and others. Total expenditure is for the period of assessment, August 2011 to December 2013.

2.1.1.1 Karuna Foundation expenditures

The Karuna expenditures include direct and indirect expenditures from Nepal as well as the Netherlands. The Nepal expenses were derived from audited expenditure reports they furnished which include both contributions to VDRCs as well as other expenses, both in the implementation districts as well as at the country office (CO). Note: the Karuna contributions cited in the VDRC audit reports do not match the direct expenses to I2C villages as detailed in Karuna Foundation Nepal's audit report. Karuna Foundation staff noted this is because the Karuna Foundation Nepal audit includes a line item for GIZ funds (separate from the VDRC contributions), which the villages note as part of the Karuna contribution. In both cases the funds come from Karuna, but they are recorded in different ways. For this assessment the Karuna contributions cited in the VDRC audit reports were used.

Karuna Foundation Nepal audit report is per calendar year (January to December). Because the assessment period includes only August to December 2011, the 2011 total for January to December was multiplied by 5/12 to estimate only the expenditure for August to December (five of the twelve months). Expenses not related to I2C were eliminated. Costs exclusively for I2C were allocated 100% to I2C. Shared expenses (such as office costs, salaries of persons working on both I2C and other programs) were apportioned to I2C on the basis of percentages suggested by Karuna Foundation staff, which they believe represent the breakdown of work between I2C and Share and Care, taking into account the number of villages each program was implemented in, by year:

Table 1: Karuna Foundation Nepal's I2C-related expenditures, as percentage of total expenditure, by year

Year	I2C villages	S&C villages	Expenditure % to I2C	Expenditure % to S&C	Total
2011	3 (Rasuwa hadn’t really started yet)	7	20%	80%	100%
2012	7	7	40%	60%	100%
2013	7	5 (2 already phased out)	60%	40%	100%

In some cases part of the total expenditure was allocated 100% to S&C and the rest allocated on the basis of the above percentages by I2C and S&C. Please see the detailed expenditure file for exact allocations by year.

Based on the Dutch audit reports, Karuna’s home office (Netherlands) expenditures are roughly estimated to be 140.000 euros per year, and have been allocated to I2C according to the below percentages, as suggested by Karuna Foundation staff and based on the number and size of programs implemented by the HO:

Table 2: Karuna's I2C-related home office expenditures, as percentage of total expenditure, by year

Year	Percentage to I2C	Percentage non-I2C	Total
2011	10%	90%	100%
2012	25%	75%	100%
2013	40%	60%	100%

Direct program support costs incurred in Rasuwa and Sunsari were removed from total I2C expenditure, and the remaining divided between Rasuwa and Sunsari on the basis of VDC population (sum per district, for I2C villages only), number of VDCs and total number of direct beneficiaries from the rehabilitation side of the program (total number of children with disabilities identified until end 2013 and considered for treatment and/or rehabilitation plus estimated adult rehabilitation beneficiaries; note: there are a number of other direct as well as indirect beneficiaries from the prevention side of the program who have been excluded here, see previous notes in report about exclusion of costs and benefits associated with the prevention side of the program). 45.65% of expenditure was allocated to Rasuwa and 54.35% to Sunsari, as seen in the below table.

Table 3: Allocation of Karuna HO and CO expenditure to Rasuwa and Sunsari

Attribute	Rasuwa	%	Sunsari	%	TOTAL	%
Population	17.288	31,19	38.137	68,81	55.425	100
Number of VDCs	4	57,14	3	42,86	7	100
Number of total direct beneficiaries under the rehabilitation program	158	48,62	167	51,38	325	100
- Total number of children with disabilities identified until end 2013	126	50,81	122	49,19	248	100
- Estimated adult rehabilitation beneficiaries	32	41,56	45	58,44	77	100
Composite score (each of the above weighted equally)		45,65		54,35		

From HO and CO expenditures including direct program support costs at district level, a percentage was removed to account for prevention-related activities (27% in Rasuwa and 25% in Sunsari). This is based on an analysis by Karuna Foundation Nepal staff of prevention expenditures at village level, then extrapolated to higher levels.

Direct program costs were summed with the share of HO and CO expenditures allocated to that district (minus prevention expenditures) for a total Karuna expenditure.

2.1.1.2 Non-Karuna expenditures

At the village level, I2C is funded on the basis of signed agreements with the Village Disability Rehabilitation Committees (VDRCs). These agreements are signed yearly and specify the financial contribution of each party. During the period 2011-2013 contributions were designed to be split between Karuna Foundation and local sources as follows:

Table 4: Breakdown of agreed financial contributions, by year

Year	Percentage Karuna	Percentage local resources	Total
1st year of implementation	70%	30%	100%
2nd year of implementation	50%	50%	100%
3rd year of implementation	30%	70%	100%

Actual local contributions and expenditures were taken from the audit reports of each VDRC (see results section). In the cases where the reports were not by calendar year (January to December), expenditures were converted to calendar year to make them combinable and comparable with the Karuna expenditures.

2.1.1.3 Total expenditure

Karuna Foundation expenditures are summed with non-Karuna contributions at the VDRC level for a total program expenditure. Amounts noted in the VDRC audits (Karuna and non-Karuna contributions) have been subtracted from this total to estimate the non-village level expenditure.

Please note total expenditure excludes some expenditures, for example any contributions from families which in the first phase of implementation were paid out-of-pocket, and those incurred on the prevention side of the program such as expenditures of health posts. Prevention results have been excluded from the analysis to account for this.

2.1.1.4 Excluded expenditures

This assessment only includes expenditures made by Karuna and the VDRC. Therefore, expenditures made by other organizations, such as a wheelchair provided to a child in the I2C program at that organization's own cost, are not included. This is partly due to data availability and partly due to the nature of the assessment. Out-of-pocket expenditures by parents (for example, for transportation to treatment or rehabilitation appointments) are also excluded.

As previously mentioned, prevention-related expenditures incurred by Karuna Foundation Nepal have been excluded as well.

2.1.2 Measuring effectiveness

There are many ways to measure the effectiveness of a program like I2C. Previous evaluations and reports have documented I2C results by CBR matrix component, as seen in the below table:

Table 5: I2C results by CBR matrix component

Health	Average Home visit per children
	Physiotherapy (Number of children)
	Treatment/surgery support
	Assistive Device support
	Nutrition support and counseling
	No. Camps conducted

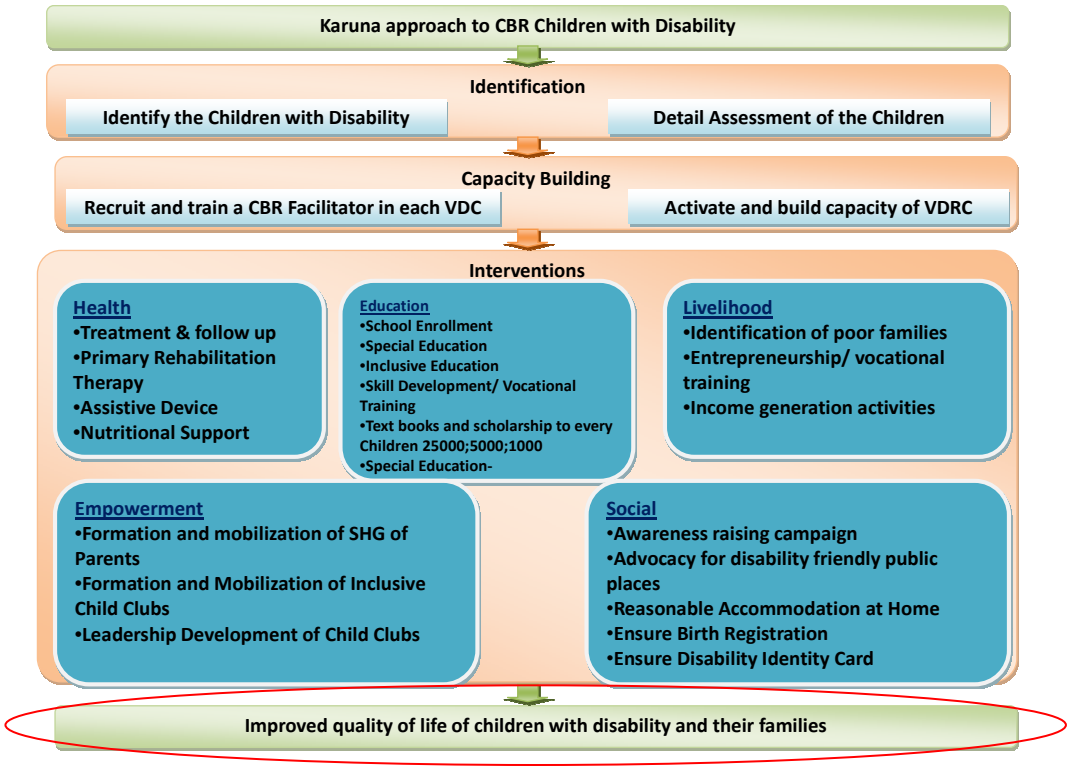
	No. of children visited in camp
Education	Support on school enrolment
	Currently school going children
	Special education/school
	Educational materials support children with disability
	No. of children getting scholarship from District Education Office
Livelihood	Involved in some entrepreunership
	Vocational training- Number of Children
	Inclusion of Family in saving credit cooperative
Social	Children received Disability Identity Card
	Awareness on disability to community (Total)
	Number of participants attending awareness events
	Ramp Construction
Empowerment	Active Self Help Group
	Total no. of SHG members
	Meeting of SHG
	Number of Child club
	Total no. of child club members
	Child club Meeting
	Number of Village Disability Rehabilitation Committee
	VDRC Meeting
	Skill development training to children with disability
	No. of Leadership and capacity building training
	No. of participants in leadership and capacity building training
Other	Training to CBR Facilitators
	Total Number of Children with Disabilities identified till end 2013
	Total number of children rehabilitated

Source: various Karuna program documents and evaluations

It is difficult to use these types of results for cost-effectiveness assessments because this type of assessment requires a single outcome measure which is combined with costs estimate, for example, cost per child rehabilitated or cost per child enrolled with disability. In this case neither of these measures properly accounts for the work across all five areas of the CBR matrix AND improvements in children both rehabilitated and not rehabilitated. Even a single outcome measure per area of the CBR matrix is not possible.

According to Karuna's approach to CBR and children with disability, interventions across the five components of the CBR matrix aim to improve quality of life of children with disability and their families, as seen in the below figure, something Karuna has started to measure. On the one hand, quality of life measurement, being a holistic concept that goes beyond the health dimension, can capture the impact of gains in the non-health CBR matrix components. However, quality of life is affected not only by the disability but also by the person's other experiences. It can also be quite subjective, with two persons with a similar disability experiencing it in different ways.

Figure 2: Karuna's approach to CBR of children with disability



Source: Karuna Foundation Nepal, 9 February 2014

From a health economics standpoint, the previously discussed results or outcome measurements are not ideal. The previously discussed outcome measures by CBR matrix component make it impossible to compare achievements and cost-effectiveness across CBR matrix areas since each uses a different outcome measure. These measures and the quality of life measurements also makes the program difficult to compare with other programs outside the disability world, or even other programs within the disability world, which may use different outcome measures. Even quality of life, which is universally applicable to all persons, disease areas and interventions and programs, is not commonly used in cost-effectiveness evaluations.

2.1.2.1 Disability-adjusted life year (DALY)

In health economics, the most often preferred measure is the disability-adjusted life year (DALY), a metric which tries to address the shortcomings identified above. It was developed by Harvard University for the World Bank in the early 1990s as a single indicator which incorporates both morbidity and mortality: time lived with a disability and time lost due to premature mortality (Murray, 1994). In this way it measures health loss in developing countries (the quality-adjusted life year, or QALY, is used in developed countries) on a scale of 0 to 1, with 0 indicating perfect health and 1 being equivalent to death (WHO, no date). It commonly uses both time- and age-weighting, that is, it incorporates age at time of onset of the condition(s) and values time lived in different health states.

The formula for calculating the DALY is as follows:

DALY = YLL + YLD

where YLL is the Years of Life Lost and YLD is the Years Lost due to Disability.

The formula for YLL is as follows:

YLL = N X L

where N is the number of deaths and L stands for standard life expectancy at age of death in years.

There are two formulas for calculating YLD. The incidence formula multiples number of incident cases by the disability weight for each case by the average duration of the case until remission or death (years):

YLD = I X DW X L

The prevalence formula is the number of prevalent cases multiplied by the disability weight of each case:

YLD = P X DW

All formulas come from WHO (no date).

For this assessment I have assumed YLL is zero based on the information available about each child and his/her condition, although some premature deaths as a result of disability may occur. For YLD, I have used the prevalence formula. Disability weights come from the Global Burden of Disease (GBD) 2010 study which updated the original weights (developed by a team of independent experts) with weights derived from recent population-based surveys with more than 31.000 respondents in five countries (USA, Peru, Tanzania, Bangladesh and Indonesia) and an open internet survey (Hotez et al, 2014).

In terms of burden of disease, the DALY can quantify levels and trends of health loss due to diseases, injuries, and risk factors, by country, region, condition or other metric. A useful document from the Global Burden of Disease Study 2010 presents Nepal's burden of disease (Institute for Health Metrics and Evaluation, no date). The 2012 DALY estimates from WHO indicate Nepal's burden of disease to be 10.284.600 (WHO, 2012. The DALY can also measure burden of disease averted by treatment or intervention. A major benefit of the DALY is that it allows comparison across diseases; for example, it's possible to compare the burden of disease and improvements made in HIV and maternal health where previously this was difficult because HIV was measured in terms of number or percentage of new transmissions and maternal health may be measured in terms of percentage of safe deliveries or ANC 4th visit coverage.

The DALY is not without criticism or limitations, of course. The DALY cannot capture hard to measure outcomes such as development of an inclusive society : recognition & acceptance of persons with disabilities in families and communities. Parks (2014) notes that "discounting life in general is problematic, but especially so for people with life-long disabilities; disabled activists make a philosophical argument that their lives should be valued equally to those of people with no disabilities." However, in response to this criticism I would argue that the DALY measure does not mean to devalue the lives of persons with disabilities, but rather reflect the change in health status this population experiences, which is often otherwise ignored. Additionally, it provides a commonly accepted way to measure improvements in health status that can be achieved by programs such as

I2C. The DALY also makes it possible to argue for the cost-effectiveness of such programs by making them comparable to non-disability programs.

2.1.2.2 Disability weights

The DALY works by assigning disability weights to conditions. This effectively reflects the loss in health status a person experiences as a result of that condition. If the condition is treated, a person can gain back that loss in health; similarly, a condition can be prevented through a prevention program. In both cases DALYs have been averted.

The Global Burden of Disease (GBD) 2004 update from the World Health Organization updated the disability weights for around 200 diseases and conditions. Table 6 presents the disability weights for disability-related conditions addressed in I2C. Using these disability weights, I have gone through the Karuna files which document the type of disability identified in each child (during the assessment camp, prior to receiving any I2C-related intervention), the services provided through I2C during the period 2012-2013, and the progress/achievement as of December 2013, and assigned a pre-intervention disability weight to each child. In some cases the exact condition was not referenced in GBD 2004 so a similar condition was used (see notes).

Table 6: Disability weights

Condition	**Disability weight**	**Notes (both from GBD 2004 and my own)**
Amputee	0.213	Average amputee weight of 6 amputee conditions
Burn, > 20% and < 60%, long-term, untreated	0.255	
Cleft lip – cases	0.050	
Cleft palate – cases	0.103	
Cognitive impairment or developmental disability	0.024	
Deafness	0.229	
Dislocation of shoulder, elbow or hip	0.074	Short-term, untreated (long-term not available)
Down syndrome – cases	0.593	
Epilepsy - Cases	0.113	
Fracture, ankle, short-term, untreated	0.196	Used for club foot
Fracture, femur, long-term, untreated	0.272	Used for Genu Valgus
Fracture, hand bone, short-term untreated (long term doesn't exist)	0.1	
Fractured clavicle, scapula or humerus, short-term untreated (long-term does not exist)	0.153	
Fractured pelvis, short-term (long-term not available)	0.247	
Fractured skull, 0-44 years, untreated, long-term	0.41	Used for physical head injury post operative
General pain or muscle tightness	0.10	Not from GBD – evaluator's own
Hearing loss, adult onset: mild	0.000	Assumed to have no disability for GBD

Hearing loss, adult onset: moderate, treated	0.040	Assumed similar to mild hearing loss
Hearing loss, adult onset: moderate, untreated	0.120	
Hearing loss, adult onset: severe or profound, treated	0.120	Assumed similar to moderate hearing loss
Hearing loss, adult onset: severe or profound, untreated	0.333	
Injured spinal cord – untreated, long-term weight	0.725	
Injury to eyes – untreated, long-term weight	0.300	
Low vision	0.170	
Macular degeneration: blindness	0.600	
Mental retardation	0.459	
Migraine	0.029	
Motor deficit	0.381	Varies with age and treatment
Neoplasm, malignant, other	0.09	Used half weight for non-malignant (evaluator's own)
Poliomyelitis - cases - lameness	0.369	
Refractive errors: blindness	0.430	Half weight used for blindness in one eye (not from GBD)
Refractive errors: low vision	0.170	
Unspecified physical or neurological disability	0.20	Not from GBD – evaluator's own

Source: WHO, 2004. Some notes are my own.

Based on the qualitative description of services received and the progress/achievement noted, I have ranked the child's improvement on a scale of 0 to 4, as described below:

Table 7: Explanation of the assessment improvement scale

Assessment improvement scale number	**Description of improvement**
0	No noticeable improvement seen
1	Minimal reduction in function limitations, some improvement in social participation, significant further interventions needed. This classification was used for children who are "improving" and perform ADL with supervision.
2	Moderate reduction in function limitations, moderate improvement in social participation, moderate further interventions needed. This classification was used for children who have shown "improvement" and can perform ADL independently
3	Significant reduction in function limitations, significant improvement in social participation, minimal further interventions needed. This classification was used for children who perform ADL independently, have had successful surgeries, attend school and social activities regularly without participation restrictions but continue to receive some support or treatment.
4	Fully rehabilitated: no functional limitations or restriction in social participation, and no further intervention needed apart from follow-up

Source: Author's own

It is assumed that each child starts at a 0 on the improvement scale, corresponding to no change in their status, which is what we assume to see without the I2C intervention. From pre-intervention disability status, the disability can be "downgraded" four possible steps, from 1 to 4, with 1 representing small improvements and 4 reflecting that the child has been deemed by Karuna to be fully rehabilitated. Karuna follows the ICF classification and defines "fully rehabilitated" to mean no function limitations or restriction in social participation, and no further intervention needed apart from follow-up. Definitions of each level of the assessment improvement scale are detailed in table 7.

If limited information was provided about the child's improvement but some improvement is noted, the child received a "1" on the assessment improvement scale. No additional DALYs were measured in the case that a negative improvement was seen; these cases are recorded as 0s on the assessment improvement scale.

I initially provided an assessment improvement score for all children, which was then reviewed by Karuna Foundation Nepal staff. Some scores were changed based on the second review and a detailed explanation because the written notes upon which I had made the scoring did not provide enough detail to provide initial DALY scores in some and improvement scoring in few others. With the additional detail available to Karuna Foundation Nepal staff, they were able to make a more accurate assessment of the child's progress.

Each assessment improvement scale increase (from 1 to 2, or from 2 to 3) represents a 25% reduction in the DALY weight; for example, a child whose progress/achievement is rated as "3" reduces their starting disability weight by 75%. If their starting disability weight was 0.170 (for example, low vision due to refractive errors), the weight is reduced by 0.1275, to 0.0425. The change in disability weight was then used to calculate DALYs averted using the prevalence formula (YLD = I X DW X L). Life expectancy refers to the duration the benefit will be sustained without further investment. This is different for different types of interventions:

- Educational gains, the ID card and social participation will last a life time, so it is assumed the duration of benefits is the child's remaining life expectancy
- It is assumed assistive devices have a lifespan of five years (Temple-Bird et al, no date)
- For surgeries, it is assumed that the impact gained will last the child's remaining life time
- For other cases including physiotherapy, the benefits gained will last a life time without any additional cost. Some children will also continue physiotherapy at home since parents have been trained to provide it; this is also without additional program costs. As with the above point, it is assumed the duration of benefits is the child's remaining life expectancy
- For children deemed fully rehabilitated, no further services are needed, therefore the duration of benefit is the child's remaining lifetime

Remaining life expectancy from time of improvement (end 2013) was calculated assuming the average life expectancy at birth for each child (ranging from 56.6 years for someone born in 1992 to 68 years for someone born in 2012, based on World Bank data (World Development Indicators database) minus years of life already lived (their age) as of 2013. In some cases the age of the child was not available, so an average age of 11 was used.

To illustrate calculations, please find below two sample calculations for children from Baklauri, Sunsari district. The first example shows how DALYs averted are calculated when benefits are for a limited duration (five years), while the second shows this calculation in the case of lifetime benefits.

Table 8: Sample calculations of DALYs averted

Age	Services provided in 2012 and 2013	Progress/ achievement as of Dec 2013	Starting disability weight	Improvement	Change in disability weight	Life expectancy at birth	Duration of benefits at improved weight	DALYs averted
14	Sent to Lahan Ear Care Hospital for ENT investigation, provided hearing aid, supported by educational materials, doing home visit and counselling regularly	Improvement in hearing ability, now she can hear and has started to speak gradually, Improving daily living activities (i.e. wearing cloth, eating, bathing etc.), increased participation in community, friends circle and different activities, attending school regularly and improving on study after she started to hear.	0,144	3	Starting disability weight 0,144 x (improvement 3 x 0,25 per improvement) = 0,108	61,44	5 years	Duration of benefit 5 years x change in disability weight 0,108 = 0,54
16	Sent to HRDC for consultation, supported educational materials, involved family members in skill development training	Improving daily living skills (i.e. wearing, eating, bathing etc.)., getting positive behavior and help from the teacher and friends. Increasing participation in sports and entertainment activities in school and community. Attending school	0,144	2	Starting disability weight 0,144 x (improvement 2 x 0,25 per improvement) = 0,072	60,17	Life expectancy at birth 60,17 – years already lived (age at intervention) 16 = 44,17 years	Duration of benefit 44,2 years x change in disability weight 0,072 = 3,18

		regularly and improving in study, involved in social events and increasing social participation, parents involved in self help group and saving credit activity.						

As stated previously, the calculation of DALYs averted is per child and assumes no Years of Life Lost (YLL), so the above examples illustrate the calculation of Years Lost due to Disability (YLD).

The I2C program also benefitted adults with disabilities in the form of access to identity cards and allowances, assistive devices, linkages with specialized services and livelihood loans. In Sunsari there were an average of 15 adults per village (in each of three villages) and in Rasuwa an average of 8 adults per village (in each of four villages) (estimates provided by Karuna Foundation staff). Without detailed information on these adults, I estimated the average reduction in DALY weight per adult to be the same as the average per child in that district (0,1046 in Rasuwa and 0,0989 in Sunsari). The same process of converting the change in disability weight to DALYs averted was used as described above, based on an average lifetime of 17,6 years, assuming an age at treatment of 31,5 years.

These calculations attribute 100% of the claimed DALYs averted to I2C even though some expenditures (like the donated wheelchairs) which contributed to averting these DALYs have been excluded from the expenditure calculations.

2.1.3 Cost-effectiveness: cost per DALY averted

Cost per DALY averted is calculated as follows:

$$\text{Cost per DALY averted} = \frac{\text{Total intervention cost for the period August 2011-December 2013}}{\text{DALYs averted during the period August 2011-December 2013}}$$

The cost per DALY averted of the I2C program and other health programs can then be compared. The one with a lower cost per DALY averted is said to be more cost-effective, since that means it costs less to "gain back" health in that scenario than the comparator. In other words, you can "gain" more health with less money.

Cost-effectiveness can also be judged against a set benchmark, by comparing the cost-effectiveness measure with the country's GDP per capita. The Commission on Macroeconomics and Health and WHO (no date) have proposed the following cost-effectiveness thresholds:

- Highly cost-effective: when the cost-effectiveness measure is less than the country's GDP per capita
- Cost-effective: when the cost-effectiveness measure is between one and three times the country's GDP per capita
- Not cost-effective: when the cost-effectiveness measure is more than three times GDP per capita in the country

2.2 *Measuring cost-efficiency*

Cost-efficiency may refer to one or more types of efficiency (Palmer and Torgerson 1999):

- Technical: using given resources to maximum advantage. In our setting this would be making the most gains in disability prevention and rehabilitation with the resources available.

- Allocative: achieving the right mixture of programs to maximize health. In the case of I2C you could look at whether the balance between disability prevention and rehabilitation is ideal.

- Productive: choosing different combinations of resources to achieve the maximum health benefit for a given cost, or said differently, maximizing health outcome for a given cost, or minimizing cost for a given outcome. For I2C this implies looking at alternative interventions which may produce similar outcomes with different amounts of resources.

I believe technical efficiency is of the most interest to the organizations commissioning this assessment. This was assessed qualitatively by discussing with Karuna Foundation Nepal staff about use of resources. Allocative efficiency, while important, is not the focus of the assessment. Productive efficiency could be assessed by comparing I2C with a similar program, such as one implemented by NLR.

2.3 *Limitations*

There are a number of limitations related to the assessment. To start, including only Karuna and VDRC expenditures (see section on excluded expenditures) is a limitation in that we are unable to know the entire cost of the program including donated wheelchairs, donated time of VDRC committee members, etc. On the other hand, it is reasonable to assume any replication of the program (for example, by the Government of Nepal) would also rely on these donated items as well.

Additionally, this assessment attributes 100% of the claimed DALYs averted to I2C even though some expenditures (like the donated wheelchairs) which contributed to averting these DALYs have been excluded from the expenditure calculations because of the program/implementer perspective of the evaluation. The report assumes the wheelchair likely wouldn't have been donated without I2C. Although the direct expenses of the wheel chair have not been included, the coordination cost which has resulted in getting these wheelchairs has been included. It is my opinion that claiming 100% of results is not entirely unrealistic.

The assessment focuses only on the period August 2011 to December 2013, although it is recognized that some expenditures (particularly startup/investment costs) are in actuality annualized over at least the full five-year duration of the program, if not longer, which is not reflected in this assessment. Furthermore, the assessment is limited by the fact that predictions about expenditures and DALYs averted cannot be made for the remaining

years of the program. A more accurate assessment can be done after five years of implementation of I2C, at which time expenditures and DALYs averted for the full program duration will be known.

Likewise, this assessment cannot anticipate DALYs averted after five years, nor expected expenditures or long-term care needs of children beyond the assessed period. Only after five years of implementation can Karuna Foundation Nepal estimate which children will need long-term support beyond the program and at what cost.

Please refer to the section on the DALY for a discussion of its limitations.

3 Results and Discussion

3.1 *Contextual analysis (objective 1)*

3.1.1 Disability in Nepal

Great strides have been made for disability in Nepal in recent years. The National Health Policy 2014 has specifically addressed disability issues through following provisions.

- Section 4. Nepal being signatory to UNCRPD, It has been realized that state need to be responsible providing all necessary health services to persons with disabilities.

- Section 7. Strategies

    7.1.2 All health care necessary for persons with disability will be included in Essential Health Care Service (EHCS) package.

    7.12.3 Physical structures in health facilities will be made disability friendly and child friendly.

Furthermore, there is a ten-year National Plan of Action on Disability with 17 areas of activities. It is under revision this year to match the ratified UNCRPD. The country's Disability Act introduced 30 years ago will also be revised.

The National Health Sector Plan – II (NHSP-II) 2010-2015 included piloting and scaling up prevention and rehabilitation of disabled persons in the Essential Health Care Services package (EHCS), in partnership with HDRC and Khagendrad Nawa Jeevan Kendra. However, prevention of disability and a number of interventions are noted as not being explicitly costed. The report cites that "most of them can be accommodated within the assumptions about the overall expansion in the HR and research budgets, or will be phased in within a physical investment program that will continue at about the current level in real terms." This may be the case since most of the activities take place at the health post level. Rehabilitation services were not costed and included in the estimated cost per capita of US$8,51.

Although disability was included in NHSP-II, I learned from government officials that it was not operationalized. NHSP-II is primarily implemented by the Ministry of Health and Population, and yet the implementation of the disability-related component of NHSP-II was not assigned to any division or department within this Ministry. Steps are already being taken for NHSP-III to ensure a responsible division or department is named within the Ministry of Health and Population.

Part of the problem is related to the fact that disability in Nepal is very fragmented. Disability is partially the responsibility of the Ministry of Women, Children and Social Welfare. With an annual budget of approximately 700.000 euros, nearly half of the available funds go to 150 disabled persons organizations (DPOs) . This Ministry also handles the disability ID cards, while the Ministry of Federal Affairs and Local Development provides the disability allowances. Education of persons with disabilities is handled by the Ministry of Education.

Other disability-related functions are decentralized to the district and village levels. Here the main government-related actors are District Health Office (DHO, whose primary focus is on disability prevention through the health

system), WCDO, District Development Committee (DDC), Health Facility Operation & Management Committee (HFOMC), Village Development Committee (VDC) and Village Disability Rehabilitation Committee (VDRC). By law the VDC should allocate 2-3% of their annual budget to disability. These funds should be managed by the VDRC. However, in many villages the VDRC has become inactive. The National President of the National Federation of the Disabled Nepal (NFDN) estimates there are a maximum of 500 active VDRCs out of a total of 3.300 nationwide. If the funds are not claimed by a local DPO or other disability-related organization, they are often reallocated to non-disability causes.

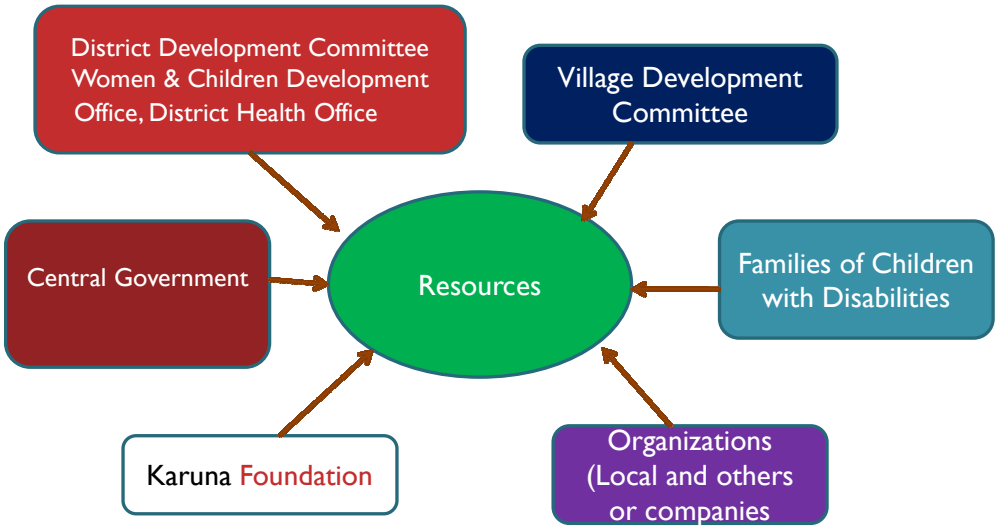
On the civil society side, the main disability-related actors are disabled persons organizations (DPOs) and local and international non-governmental organizations (NGOs). DPOs are local groups with a minimum of 25 individual members comprising of both disabled and non-disabled persons. NFDN is an umbrella organization of DPOs and currently has 265 DPO members in all 74 districts of the country (although concentrated in areas of Karuna and NLR are working, according to the president of NFDN). DPOs work to lobby local VDCs on the issue of disability and for VDRC formation, and once the VDRC is formed, can work together. Since DPOs do not have their own working fund or budget, if involved in direct service provision, for example providing scholarships, organizing rehabilitation camps and arranging assistive devices, this is often done with funds from other organizations like Handicap International.

NHSP-III 2015-2019 is based on the Nepal Health Policy 2014 and is also going to include disability. However, the document is under development, and a detailed costing of disability services is unlikely.

3.1.2 Karuna's Inspire2Care program

I2C is one of many organizations working on disability prevention and rehabilitation. I2C was designed and is implemented within government system. Figure 4 shows the relationship between the district and village-level actors mentioned above and I2C.

Figure 3: Karuna's place amongst district and village actors



Source: Karuna Foundation Nepal Change comes from the community people! Presentation dated 9 February 2014

In this way, one of the main functions the I2C program has served is to reactivate the VDRCs and bring all disability-related actors together around the available disability funding. Indeed Sunsari government leaders noted a main contribution of Karuna Foundation Nepal and the I2C program has been to improve coordination around the issue of disability, as well as providing additional financial resources to supplement their limited existing resources.

The I2C program utilizes a community-based rehabilitation (CBR) facilitator, employed by the VDRC, as seen in the below figure.

Figure 4: Major actors in the I2C program

Source: Karuna Foundation Nepal, 9 February 2014

The CBR facilitator takes the lead in organizing an assessment camp for all children in the village and subsequently developing rehabilitation plans for each child with disability. Activities come from all five components of the CBR matrix: health, education, livelihood, empowerment and social (see figure 2 earlier in the report). The CBR facilitator also takes the lead in some general activities not tied to a specific child's rehabilitation plan (child clubs, etc.).The VDRC committee then approves the activities and corresponding budget. Wherever possible, treatment and/or rehabilitation services are provided through existing organizations or programs which the CBR facilitator helps identify and arrange.

Disability prevention activities are largely implemented by the health post (ANC, etc.), sometimes with Karuna financial support (for example, purchasing first aid kits for Female Community Health Volunteers (FCHVs) for prevention of secondary disability).

3.1.3 Duplication of government program

I could not find any evidence of duplication with government or other programs. During the field visit I frequently heard that I2C provides the needed "push" to reactivate the structures that should be in place but

are often not functioning. By training the CBR facilitator, providing structure and oversight to the entire process as well as an initial inflow of financial resources, . Government officials in both Rasuwa and Sunsari expressed commitment and ability to raise the necessary resources to keep I2C going after Karuna's financial resources are withdrawn.

3.2 *Cost-effectiveness and efficiency findings (objective 2a)*

3.2.1 Total expenditure (excluding prevention expenses)

Total I2C expenditure (excluding prevention expenditures) by year and contributor is outlined in Table 9:

Table 9: Total I2C expenditures by year and contributor

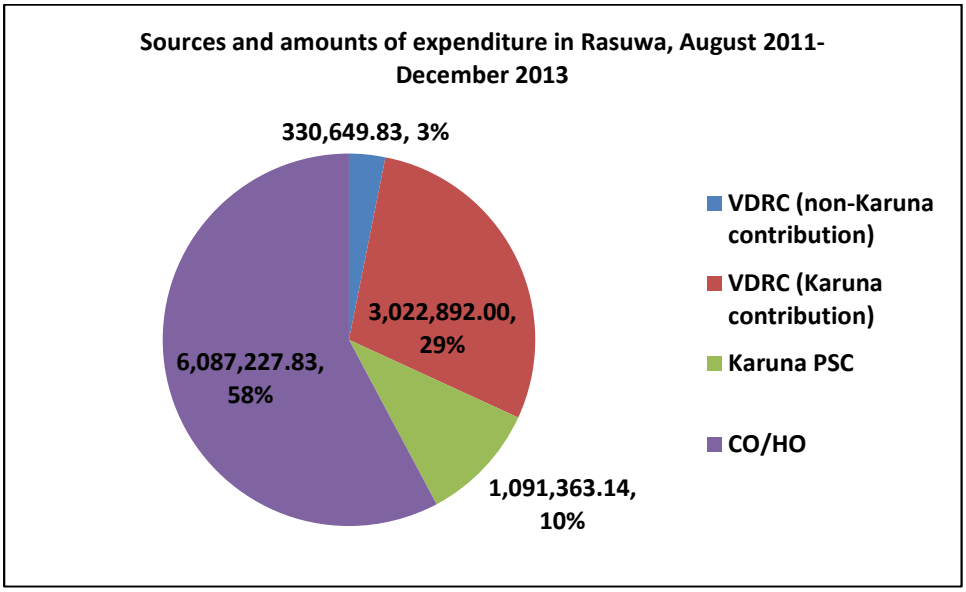
	August-December 2011	January-December 2012	January-December 2013	TOTAL
Karuna head office (HO) (NPR)	1.108.941	2.841.055	5.154.669	9.104.665
Karuna country office (CO) (NPR)	907.877	4.915.983	6.929.164	12.753.024
Including Rasuwa PSC (NPR)	336.815	286.990	467.558	1.091.363
Including Sunsari PSC (NPR)	201.592	224.994	383.280	809.866
Non-Karuna contribution Rasuwa (NPR)	65.184	99.016	166.450	330.650
Non-Karuna contribution Sunsari (NPR)	0	451.112	650.416	1.101.528
TOTAL EXPENDITURE (NPR)	**2.082.002**	**8.307.167**	**12.900.699**	**23.289.866**

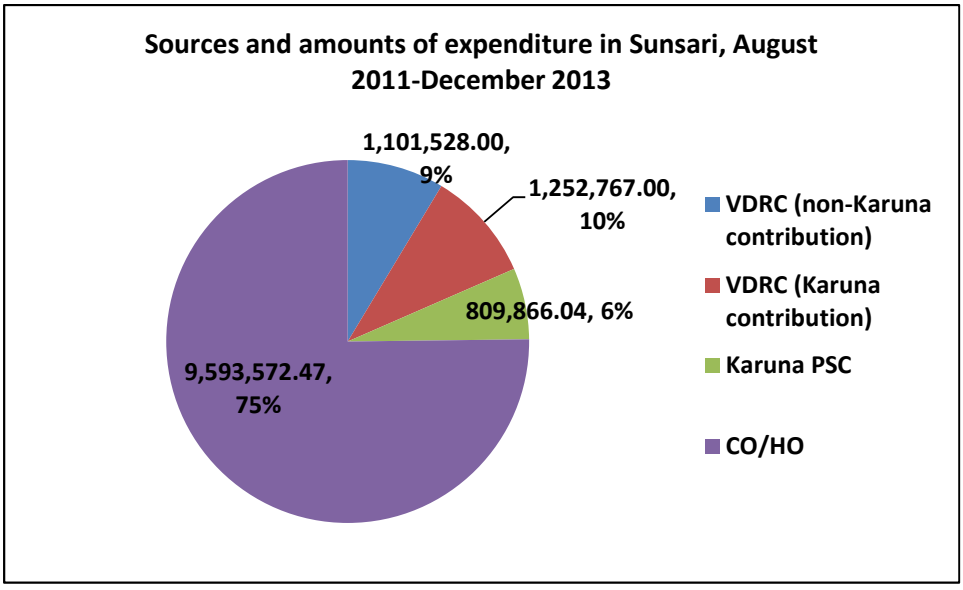
Presented differently, figure 5 shows expenditure at four levels, for the entire assessment period:

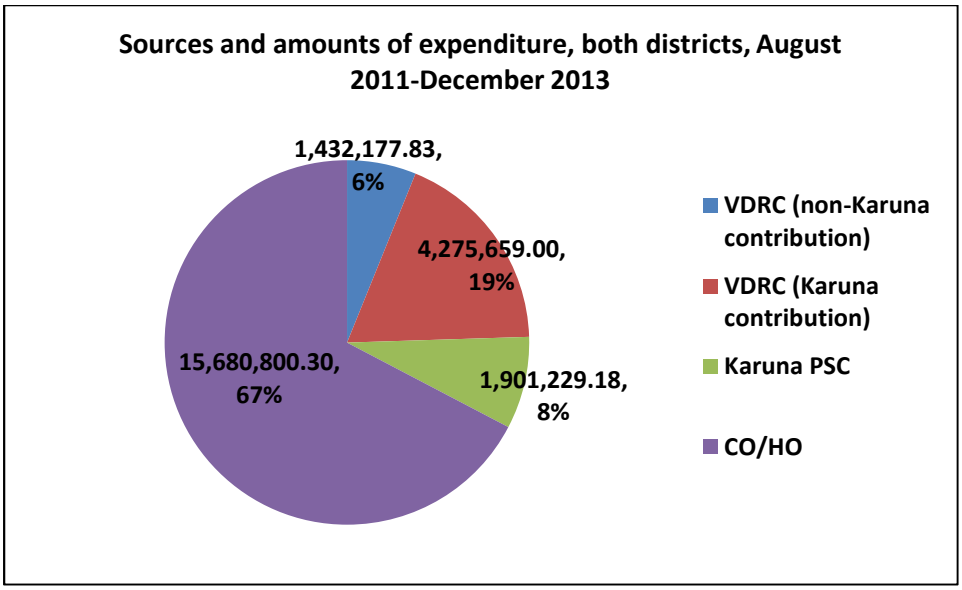
- VDRC expenditure only, separately for Karuna and non-Karuna contributions. These are recurrent expenditures. Together they approximate the long-term expected expenditure (years 4 and 5 of I2C and possibly beyond).
- Karuna direct program support costs incurred at village/district level. These are mostly recurrent expenditures. Here HO and CO expenditures are excluded, to highlight the large share of HO and CO expenditures as a percentage of total expenditure
- Country and home office expenditures incurred in Kathmandu and the Netherlands

The entire pie chart represents all I2C-related expenditures from all sources (Karuna and non-Karuna): this is the total program expenditure including investment as well as recurrent costs.

Figure 5: Sources and amounts of expenditure (in NPR) in Rasuwa, Sunsari and both districts combined, for the period August 2011-December 2013







It should be noted that the program could not and cannot operate in the initial years without the HO and CO expenditures (including the investment costs). Especially in the first phase of the program, significant costs were required to get the program running. Some of these may be less in future phases (for example, costs for setting up financial reporting systems), while others are likely to be incurred each and every time the program starts in new districts and villages (meetings with community leaders, etc.).

3.2.2 Cost-effectiveness

The cost-effectiveness findings are based on the combined VDC populations and estimated DALYs averted, seen in the below table:

Table 10: VDC populations and DALYs averted

	Rasuwa	Sunsari	TOTAL
Combined VDC population	17.288	38.137	55.425
Estimated total DALYs averted in direct beneficiaries			
Children	477	451	928
Adults	59	78	137
Total	536	529	1.065

In terms of cost-effectiveness, in addition to cost per DALY averted (in NPR and EUR) table 11 also presents cost per capita for the assessment period (in NPR; based on village populations, also see note below table) and cost per direct beneficiary for assessment period (NPR).

Table 11: Cost-effectiveness findings

	Rasuwa	Sunsari	TOTAL or

			average
Total I2C expenditure (all sources) (NPR)	10.532.133	12.757.734	23.289.866
Cost per capita for assessment period* (NPR)	609	335	420
Cost per direct beneficiary for assessment period* (NPR)	66.659	76.394	71.661
Cost per DALY averted (NPR)	19.655	24.114	21.870
Cost per DALY averted (EUR)	172,86	212,07	192,34

* The cost per capita is given for the assessment period (August 2011-December 2013) and is based on entire village population, since the entire village benefits from the program. Likewise, cost per direct beneficiary is also for the assessment period of August 2011 to December 2013. It is difficult to estimate the cost per direct beneficiary per year since the direct beneficiaries receiving treatment and/or rehabilitation services entered and exited the program at different points of time during the assessment period. Assuming all direct beneficiaries were part of the program for the entire assessment period would underestimate cost per direct beneficiary per year.

See Annex 3 for a further breakdown of cost per DALY averted by level where costs are incurred.

The cost per DALY averted is compared with other available evidence, including cost per DALY averted under NHSP-I and II, and other programs, as seen in table 12. It is likely the methodology used to assess the cost per DALY averted or cost per beneficiary in the listed programs is not identical to the methodology used in this assessment. Costs were assessed in different years and have not been adjusted to 2013 levels. Therefore, these comparisons are for benchmarking purposes only and should not be seen as direct comparisons.

Table 12: Comparison of findings

Category	Program	Cost per DALY averted or cost per beneficiary	Comments
I2C	I2C, all expenditure	Cost per DALY averted: 192,34 euros	
NHSP	NHSP-I	Cost per DALY averted: US$144	In 2009-2010 prices, not discounted
	NHSP-II	Cost per DALY averted: US$147	In 2009-2010 prices, not discounted
CBR	CBR program in Myanmar for leprosy-affected beneficiaries including medical rehabilitation, housing, micro-credit and livelihood assistance (SPPR, May 2012)	Cost per beneficiary household: US$400,80	
	NGO-initiated CBR program in South Africa (Dawad et al, no date)	Cost per beneficiary per year: R5790 (396 euros assuming 1 ZAR = 0.0683583 EUR, 17 December 2014 exchange rate, xe.com)	
Chagas disease	Vector control, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$260	

	Treatment of children under 5, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$100	
HIV and TB	Preventing and treating coinfection (HIV) with tuberculosis, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$120	
	BCG vaccination, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$40-170	
Leprosy	Leprosy patients in generic setting (Remme, 2006, cited in van Veen et al, February 2009)	Cost per DALY averted: US$7 for leprosy patients needing treatment for reactions and ulcers, for those needing footwear and self-care education US$75, for those needing reconstructive surgery US$110	Assumes a 25% self-cure rate, an average age of onset of 27, a disability weighting of 0.152, a life expectancy at age 25–29 of 44.75 (India data), and a 90% success rate
	Leprosy case detection and treatment (Jamison et al, 2006)	Cost per DALY averted: US$38	
	Prevention of leprosy disability, generic estimate (Jamison et al, 2006)	Cost per DALY averted: US$1-110	
Malaria	Malaria intermittent prevention treatment in infants (IPTi) in Mozambique and Tanzania (Hutton et al, 2009)	Cost per DALY averted: US$3,70-11,20	
Maternal and child health	Promoting exclusive breastfeeding, measles immunization, ORT, and hygiene, developing countries (Jamison et al, 2006)	Cost per DALY averted: less than US$5	
	Packages to improve the coverage and/or quality of routine maternal care (including nutritional supplementation), Sub-Saharan Africa and South Asia (Jamison et al, 2006)	Cost per DALY averted: US$77-150	
Other rehabilitation	Rehabilitation equity funds in Mali, Rwanda and Togo pay selected providers directly on behalf of poor (Botokro, December 2009)	Average rehabilitation cost per beneficiary: 140 euros in Rwanda, 175 euros in Mali, and 193 euros in Togo. Excludes operating costs	
Water,	Promoting better sanitation	Cost per DALY averted:	

sanitation and hygiene	through public policy, developing countries (Jamison et al, 2006)	US$11	
	Investing in and maintaining hand pumps for water, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$94	
	House connections for potable water, developing countries (Jamison et al, 2006)	Cost per DALY averted: US$223	
	Construction and promotion of basic sanitation facilities, developing countries (Jamison et al, 2006)	Cost per DALY averted : more than US$270	

From the table we see a range of costs per DALY averted of US$1 (prevention of leprosy disability) to more than US$270 per DALY averted for construction and promotion of basic sanitation facilities in developing countries. The I2C findings are therefore at the high end of this range, at 192,34 euros per DALY averted. It should be noted many of the cost per DALY estimates are for prevention interventions, which are usually more cost-effective than treatment interventions like the part of the I2C program that was assessed (Partnership for Prevention, no date). Within this table, the I2C findings are perhaps best compared against the cost per DALY averted findings for leprosy patients in a generic setting needing reconstructive surgery (192 euros for I2C vs US$110 for leprosy reconstructive surgeries). However, without knowing which costs were included in the leprosy study and other methodological considerations (including adjusting the leprosy figures to 2013 levels), these findings should be interpreted with caution. Cost per DALY averted findings from NHSP I-II in Nepal indicate I2C is less cost-effective than interventions implemented under NHSP (192 euros for I2C vs US$144-147 for NHSP).

Using the WHO benchmark which compares cost per DALY averted with a country's GDP (US$694,10 or 522,77 EUR in 2013, World Bank, 2013), I2C as implemented over the period August 2011-December 2013 can be considered highly cost-effective since the program's cost per DALY averted falls below Nepal's GDP per capita.

It is not possible to accurately estimate the cost-effectiveness of the entire five-year I2C program. Although approximate future expenditures at VDRC level are known, it would require a lot of assumptions to estimate Karuna expenditures during years four and five for first phase VDCS (during these years Karuna provides technical support only). Furthermore, expected benefits to be incurred in future years cannot be accurately estimated.

I am not able to assess whether the objectives of the project could have been achieved more cost effectively with a different balance between overhead, indirect costs and direct costs and/or with an alternative organizational structure, both at country office in Kathmandu and field offices.

3.2.3 Cost-efficiency

It is my opinion that the program was implemented in an efficient way during the period August 2011 to December 2013. Karuna Foundation Nepal took measures to cut costs wherever possible; as an example, allowances for government officials for attending meetings were negotiated down from the normal rate, and

staff members visiting districts from Kathmandu take public transportation when travelling alone. Additionally, the program is fully embedded within existing government structures and makes use of other existing resources (assistive devices funded by other organizations or programs and hospitals with their own funding for patient treatment), ensuring no duplication and also the free (meaning, no cost to I2C) provision of services where possible. As another example, Karuna Foundation Nepal owns no vehicles, which can be expensive to purchase and maintain.

At the same time, some cost reductions were made during the first phase, and between the first and expansion phases, indicating that there was room for additional efficiency. For examples, human resources (HR) is normally a major cost driver in development programs like I2C. Without having more time to better understand staffing patterns and responsibilities, anecdotally I can say Karuna Foundation Nepal staff told me there have been some changes in human resources over the last few years to reduce unnecessary staff and achieve the right mix of staff and skills in the different offices. Also see section 3.3.2.3 for more discussion on budget cuts made in the expansion phase.

One interesting comparison to make between districts is with regards to the cost of the Karuna Foundation Nepal offices in Rasuwa and Sunsari. In Rasuwa I2C essentially rents a room in an existing office in one of the program villages at an average monthly cost of NPR 2.171, while in Sunsari Karuna Foundation has a stand-alone office which houses both the I2C program and the Share & Care program. That office costs 12.659 NPR on average per month, of which you could estimate 5.514 NPR per month as the share for I2C based on number of VDCs (there are 3 I2C VDCs and 4 S&C VDCs). At less than half the cost of the Sunsari office, the Rasuwa arrangement certainly has financial benefits, although I know Karuna has debated the non-financial drawbacks of only having one staff person in Rasuwa. If a second person were to join the Rasuwa team, it would need to be considered if a second staff person could comfortably sit in the same office. I believe this finding is important to consider for the expansion phase.

3.3 *Sustainability, expansion and replicability (objectives 2b, 2c, 3, 4 and 5)*

3.3.1 Sustainability

I2C is designed to be sustainable, with cost-sharing agreed upon in writing with the VDCs starting from the first year of the program, as seen in the below table.

Table 13: Cost sharing during I2C implementation

Year of implementation	Percentage Karuna	Percentage local resources	Total
1	70%	30%	100%
2	50%	50%	100%
3	30%	70%	100%
4	0%	100%	100%
5	0%	100%	100%

With Karuna initially providing the majority of the resources in the first year, contributions are then evenly split between Karuna and local resources in the 2nd year, while local resources make up 70% of the total in the third year. The program is funded entirely locally by the 4th year. In the 4th and 5th years of implementation Karuna provides technical support only.

Although sustainability can't fully be measured until at least the sixth year of implementation, I believe results from Sunsari are extremely promising. In this first phase 53% of resources came from Karuna while local contributions made up 47% of total resources. Given that no resources were allocated in 2011, we can assume this assessment includes two full years of implementation in Sunsari, indicating that local contributions are ahead of the expected 60% Karuna / 40% local resource split expected after two years.

Rasuwa is significantly more challenging; from what I understand, the district has less money than Sunsari, which is strongly reflected in the local (non-Karuna) contributions, seen in table 11.

Table 14: Share of Karuna and non-Karuna contributions, Rasuwa and Sunsari

	Rasuwa	%	Sunsari	%	TOTAL	%
Karuna	3.022.892	90,14	1.252.767	53,21	4.275.659	74,91
Non-Karuna	330.650	9,86	1.101.528	46,79	1.432.178	25,09
TOTAL	3.353.542	100	2.354.295	100	5.707.837	100

Non-Karuna contributions in Rasuwa as compared to Sunsari were less both in amount (330.650 NPR versus 1.101.528 NPR) as well as percentage of total contributions (less than 10% vs nearly 47%). In Rasuwa I heard frequently that they were counting on an improved economic situation in five years when the hydropower project will begin to show investments. One suggestion was also made by an official in Rasuwa to spread the Karuna contributions over five years (not changing the total amount, just how it is distributed) because they felt this would be easier for them to pay their share of the yearly budget if a share always came from Karuna (note: this of course does not bode well for sustainability if they are needing Karuna to pay something each year). I would suggest the expansion should not be started in Rasuwa without having the first phase properly funded.

However, in terms of non-financial sustainability, I observed a high level of enthusiasm and commitment from VDRC members and local leaders in the villages I visited. I believe the program is smart to initially implement largely with Karuna resources; this gives the community time to buy-in to the program before being asked to finance a large percentage. Once buy-in is secured, the community is then willing to put forward the necessary financial resources. From my limited experience in the districts I have learned that the VDC must allocate, by law, 2-3% of their budget for disability. Based on the VDRC audit reports, this was supplemented with additional funds (WCDO, family contributions) in some years in some VDCs.

Looking at sustainability from a wider perspective, and taking into account the need for longer-term specialized care for persons with disability, in the pilot phase VDCs we are not yet able to assess what percentage of children will have longer term needs beyond the five years of I2C, and at what potential cost. I would suggest this question be revisited after the full five years of I2C have been completed in the pilot VDCs and longer term needs have been assessed.

3.3.2 Expansion

3.3.2.1 Budget definitions

Karuna uses the following definitions:

- Investment cost – one-time expenditure that incurs in the 1st or 2nd year of the program but is used and/or gives benefit for a long time. Capital items are included here. Examples are: furniture, birthing center equipment, initial planning or orientation meeting
- Running cost – recurrent every month or year. Examples include: day-to-day expenditures, salaries, meeting costs, printing
- Community running cost – Recurrent costs at VDRC level. The CBR Facilitator salary and other regular expenses are here.
- Direct costs – All costs that go down to the village level. Karuna tries to have 60% of total costs be direct costs.
- Indirect costs – This includes administrative costs, salaries of Kathmandu office staff. Karuna tries to have a maximum of 40% of total cost represented by indirect.
- Overhead – This term is not used by Karuna.

In terms of calculation principles, I would suggest the budget template (and subsequently the matching expenditure report) identify each and every line item as either an investment cost, running cost or community running cost and a direct or indirect cost. That way costs by type can be easily summed.

3.3.2.2 Format

Since the September 2014 meeting in Utrecht, staff from Karuna Foundation Nepal and NLR have worked for several days together to simplify the expansion budget. In the new format all budget items for a single VDC are presented on a single sheet, and the total number of sheets is limited to six:

- Summary budget
- District activities
- VDC activities
- Technical support
- HR & admin
- Budget for total VDCs

The budget is much easier to understand than previous formats. I would suggest the following would improve readability/understandability:

- I would suggest organizing the line items on each sheet in a better way to make it possible to see categories of expenses (for example, group all training together on the "M&E, training and research/studies" tab).

- For tabs which contain multiple types of activities (for example, the "district_activities" tab includes both central and district level activities), the line items should make clear which type of activity it is

- On all tabs, it should be clear which district or village is benefitting, so expenses could be sorted and totaled. Likewise, I would suggest adding cost category labels to each expense so it's easy to sort and total the HR budget lines, office expenses, transportation, etc.

- I would like to see on the "summary budget" tab a total of investment vs recurrent expenses

- For expenses that are shared (and only a percentage has been included in this budget), it would be nice to have this indicated somehow

- Indirect vs direct budget lines are not indicated. Additionally, Liliane Foundation works with overheads as opposed to indirect costs. These terms are not interchangeable. I would suggest the organizations discuss the definitions Karuna has provided (see next section) and agree on a common definition that is then reflected in the budget template

- Liliane Foundation would also like the type of activity (prevention, CBR, community support system, training) to be clear. This is not clear in the current format. I would recommend the activity types be discussed as to their appropriateness. Once agreed, a column with activity type could be added to each sheet to make these expenditures easily sortable and able to be totaled.

3.3.2.3 Expected changes in cost-effectiveness: from first phase to expansion phase

Because there are two implementing organizations in the expansion phase (Karuna and NLR), there is the serious potential for duplication of costs, especially at HO and CO levels. This could impact negatively on cost-effectiveness.

On the other hand, I believe the increased number of villages in the expansion phase will ensure home and country office expenditures are spread out over more villages, which should improve cost-effectiveness. I am not able to say how staffing changes made from the first phase to the expansion phase (number of CBR facilitators and program associates per VDC) may influence cost-effectiveness. Karuna Foundation's own calculations indicate a cost per VDC in the pilot phase of 80.000 euros versus a cost per VDC in the expansion phase of 50.000 euros, indicating an efficiency gain of 30.000 euros per village.

A number of reductions have been made in the expansion budget which I believe will also help improve cost-effectiveness, including:

- Eliminating the staff position of Technical Director

- Activities that weren't close enough to what they were trying to accomplish (based on a literature search) were eliminated – an example is IMCI

- Activities where government was already allocating funds were eliminated so as to prevent duplication – for example FCHV meetings
- Funds for coordinating mechanisms were reduced – it was thought these mechanisms do not need much financial support and what they do need can be gotten from other sources
- Wherever possible Karuna is trying to use hospitals and other facilities that are already providing the treatment and rehabilitation services needed by the I2C children (with their own budget). For example, when in need of a wheelchair Karuna will contact Latter Day Saints, an organization already providing wheelchairs
- Karuna Foundation Nepal's CO is moving to a less expensive office in Kathmandu in December 2014

In the expansion phase some treatment support costs were shifted to parents often in the form of a cost-sharing mechanism. For example, whereas previously Karuna may have paid for the family's transport to take the child for treatment, now some of the costs are to be paid by parents.

The budgetary impact of including adults was considered in terms of the increased volume of services. Actual services for adults are not expected to be more costly than those for children, however the effectiveness of interventions may be less (nutrition interventions unlikely to show impact, etc.). This should be carefully monitored in the expansion phase.

3.3.2.4 Expected cost-effectiveness based on draft expansion phase budget

The expected cost-effectiveness of the expansion phase can be roughly estimated on the basis of findings from the first phase. On the basis of the 2014-2015 I2C draft budget of 50,1 million NPR (total budget of 67,7 million NPR minus 26% for prevention), assuming implementation in 15 VDCs, with DALYs averted in both years of the program, the estimated cost per DALY averted is 35.842 NPR or 288 euros. Investment costs including capital items have not been annualized; doing so would improve the cost-effectiveness. This assumes organizations decisions taken such as changes in staffing levels will result in the same effectiveness despite the increased number of VDCs, and of course assumes similar disabilities, changes in DALY weights and DALYs averted as in the seven VDCs included in this assessment.

It is difficult to speculate at this time about the reasons for the possibly lower cost-effectiveness of the program in the expansion phase, but this may be due to duplication of costs as a result of two implementing organizations.

3.3.3 Replicability

I believe the I2C model has high potential for replicability in Nepal where the VDRC structure exists and there are provisions for money to be set aside for groups such as persons with disabilities. My understanding of the expansion villages is that they are relatively rich, so financially the situation may be comparable to Sunsari district, which points to likelihood of financial success in the expansion phase.

Outside Nepal, I believe the model also has high potential for replicability, especially in settings with a strong federal structure and political stability, where decisions are made by consensus and involvement of the

community in decision-making is considered an asset, if not a requirement. However, if a VDRC-like structure and likely funding are not in place, I would expect a long lead time to be likely necessary for negotiations at central and district levels.

In both cases I would suggest a careful look at how to limit home and country office costs to a reasonable share of total cost, either by reducing expenditures or doing some financial modelling to identify the number of villages where the program can be implemented most cost-effectively by distributing HO and CO expenditures across villages. The planned shift of staff from CO to the Ilam office should already help with this.

4 Recommendations and Conclusion

This assessment has shown the I2C program implemented by Karuna Foundation Nepal during the period August 2011 to December 2013 was highly cost-effective, with an average estimated cost per DALY averted of 21.870 NPR (192,34 euros) when looking at all I2C-related expenditures, including those incurred at HO and CO levels.

Nonetheless, there are some recommendations coming out of the assessment that hopefully will be useful to NLR and Liliane Foundation when considering how to move forward with the joint partnership. I have divided recommendations into primarily budget recommendations and primarily program recommendations that have emerged when examining cost-effectiveness and efficiency. In many cases the program recommendations may have budgetary or cost-effectiveness-related implications .

Budget recommendations

1. A general recommendation is to lower head office and country office expenses since they made up a large percentage of total expenses in the first phase. Although the program is still highly cost-effective with the inclusion of HO and CO expenditures, my impression is they were too high during the first phase, but this is possibly more the result of the small number of VDCs than the level of actual expenditures themselves. As the number of VDCs is expanded, the share of head and country office expenses as a percentage of total expenses is likely to decrease.

2. The process of assessing the financial capacity of districts to meet their share of the VDRC budget was not entirely successful in the first phase, since Rasuwa has been operating almost entirely with Karuna funds for over two years. I understand for the expansion phase a readiness protocol is in place, including the requirement that first the agreed funds are in place before the program can start. I would suggest careful monitoring of financial contributions at local level to ensure they meet the required levels. It could be considered that local funds must be deposited prior to partners making their contribution (on a yearly basis), and I can also suggest a strict policy for stopping the program if local financial resources are not provided on a yearly basis. Recognizing that there are sometimes emergencies that arise, a cross-subsidization fund could be considered (made up of central government resources, or a small percentage of local contributions) to cover insufficient local contributions in emergency cases only.

3. There is a strong potential for duplication of costs between Karuna and NLR in the expansion phase. I would suggest a clear division of tasks, roles, responsibilities to use the strengths of each organization in the best way. It should be noted that the learning aspect of the expansion phase may come at a cost of reduced cost-effectiveness and efficiency.

4. Karuna's experience in the first phase shows the Sunsari office arrangement where Karuna rents a house and operates the I2C and S&C programs for this district is more costly than renting a room in a larger office, as is done in Rasuwa. Although possibly counterintuitive, there may be financial benefits to not operating the I2C program out of an existing Karuna, NLR or Liliane Foundation partner office (especially if the number of VDCs to be managed from that office is small, as in Jappa). However, the number of staff persons needing to be housed in the office, as well as their potential living arrangements, is also a consideration.

5. Please refer to section 3.3.2.2 for recommendations on the expansion budget format.

Program recommendations

1. I would recommend the expansion phase not be started in Rasuwa without having the first phase properly funded.

2. Going through the individual child results, it is noted that some children have not made improvements from their original state. In some cases parental reluctance or opposition to the proposed course of treatment is the reason. Interventions which aim to influence these parents could be beneficial in helping children progress in their treatment plan, improving program effectiveness.

3. I believe more support for parents and families of disabled children could help improve outcomes for children in the program, although at an additional cost.

4. The community-based approach used in I2C is immensely valuable. The time and effort Karuna Foundation invested in building relationships at the district and village level was significant, but is showing returns in the commitment of the community and the success of the program. However, I believe these strong working relationships with district and village level authorities can be further utilized. This could be for disability-related causes (for example, more could be done for parents and families of disabled children as well as disabled adults (to be included in expansion phase)) or general development purposes. I believe this model is likely to work not only for I2C but for other programs-health-related or otherwise (obviously the VDRC structure is for disability but something similar could be used for other areas), and may be worthwhile exploring

5. Health economists are very divided about the impact of user fees or out-of-pocket expenditures on utilization. Some say they increase personal ownership and value of the services received, while others say they present a financial barrier to people utilizing services. I would recommend careful monitoring of the familial cost-sharing component in the expansion phase and that a mechanism is considered for waiving the cost-sharing requirement in cases where it presents an undue burden on the family or they are unable to pay.

6. A strong M&E system is needed from the start in the expansion phase to assess prevention activities, cost-effectiveness, burden of cost-shifting to parents and impact of adding adults. In terms of patient outcomes (children and adults with a disability enrolled in the rehabilitation side of the program), current qualitative reporting could be complemented by an improvement score to strengthen monitoring and evaluation efforts.

And finally, I would like to close with two notes about methodology. This study has not looked at prevention results for reasons mentioned earlier. I believe a longer time horizon, larger sample size as well as proper comparator villages are needed to assess the impact of I2C prevention efforts (training, awareness raising, “Best Wishes” program, kits for FCHVs, upgrades to birthing centers, etc.). There is also a major problem with attribution. I would suggest the partner organizations develop a strong M&E framework for the expansion phase which takes into consideration these points.

More generally, programs like I2C can be difficult to assess. As discussed previously, one major shortcoming of the DALY is that while it measures health loss and gain, it cannot capture other outcomes of the program, such as the level of community mobilization or benefits from livelihood support. A Social Return on Investment study may be able to capture the value communities themselves place on their increased mobilization and other less tangible benefits from the program. Presenting family financial improvement (through the livelihood loans, etc.) could be something to think about for the future, for example, loans totaling X NPR have been used to provide increased income of X for X number of families, although a major drawback of using multiple outcome or effectiveness indicators is you lose sight of big picture. I believe future research which could value and incorporate the less-tangible benefits of CBR programs in a single metric like the DALY would be very valuable.

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Annex 2 – Documents reviewed

Karuna Foundation website

PR Expenses (2011, 2012 and 2013)

Sunsari audit reports (2012, 2013)

Rasuwa audit reports (2012, 2013)

Karuna Nepal year reports 2013

Karuna Foundation results and output 2012

Translated I2C implementation agreements, various villages

I2C program results (2012 and 2013), various Excel files

Summary lists of rehabilitated children, Rasuwa and Sunsari

Concept note for expansion of the Inspire2Care project in Nepal (July 2014)

INSPIRE2CARE PLAN 2015-2020 - Draft November 2014

Brief strategy Karuna Foundation 2011-2013 and amendment notes

Situation Analysis of Prevention and Rehabilitation Project VDCs Of Karuna Foundation In Sunsari and Rasuwa, 0 draft, September 2014

Guidelines to implement Inspire2Care Program in Nepal, Final Draft

Inspire to Care (2014-2018)

Joint partnership agreement, Karuna Foundation, Liliane and NLR

Essential Health Care Services Capacity Assesmsent for Health Systems Strengthening, Dr. Louise Hulton et al, December 2010

Qualitative service delivery and progress record for 2012-2013, Rasuwa and Sunsari districts, compiled November 2014

I2C prevention results, I2C villages, various Excel files

I2C expansion budgets, various formats

Operational guidelines to measure quality of life of children with disability

HMIS, Rasuwa and Sunsari districts (various years)

Disability in health policies and plans of Nepal document provided by Karuna Foundation

Change comes from the community people!, Karuna Foundation Nepal presentation, 9 February 2014

Karuna Foundation Nepal, Evaluation of the Community Based Rehabilitation Projects in Nepal, Huib Cornielje, 2012

Children with a disability in Nepal: is life becoming better? Community-based Rehabilitation:
the impact on the quality of life of children with a disability and their family in Chapakhori, Bhokraha and Madesha in Nepal. Mol, T.I., August 2012
Email correspondence with Karuna Foundation staff (Betteke, Deepak, Aradhana)

"Current status of children with a disability in Karuna Foundation's project areas: Third review meeting (November 2011)" presentation

Nepal Health Sector Program – Implementation Plan II (NHSP-IP 2) 2010-2015, Ministry of Health and Population, Government of Nepal

Karuna Foundation Nepal audit reports (2011, 2012, 2013)

Hospital and Rehabilitation Centre for Disabled Children (HRDC) Annual Report 2013

Annex 1: List of disability-related organizations, JICA Country Profile on PWDs, Annex Nepal

"Persons with disabilities and their access to health care services in Nepal" report by Eva Schildbach et al, November 2012

Various documents on DALYs, disability, CBR matrix (see reference list)

Annex 3 – Cost per DALY averted at different levels

Cost per DALY averted is presented for expenditures at three levels:

- All I2C-related expenditures from all sources (Karuna and non-Karuna): this is the total programme expenditure including investment as well as recurrent costs
- Expenditures at village/district level only, including VDRC contributions (Karuna and non-Karuna) as well as Karuna program support costs incurred in that district. These are mostly recurrent expenditures. Here HO and CO expenditures are excluded, to highlight the large share of HO and CO expenditures as a percentage of total expenditure
- VDRC expenditure only (Karuna and non-Karuna). These are recurrent expenditures. This approximates the long-term expected expenditure (years 4 and 5 of I2C and possibly beyond).

It should be noted that the programme could not and cannot operate in the initial years without the HO and CO expenditures (including the investment costs), so the second and third expenditure scenarios should not be misconstrued as such.

For each scenario, total expenditure (NPR), cost per capita for assessment period (NPR; based on village populations, also see note below table), cost per direct beneficiary for assessment period (NPR) and cost per DALY averted (NPR and EUR) are presented. Results under each scenario are presented in the below table, separately by district and then as a whole.

Table 15: Cost-effectiveness findings by level of expenditure

	Rasuwa	**Sunsari**	**TOTAL or average**
Total I2C expenditure (all sources) (NPR)	10.532.132,80	12.757.733,51	23.289.866,32
Cost per capita for assessment period* (NPR)	609,22	334,52	420,21
Cost per direct beneficiary for assessment period* (NPR)	66.659,07	76.393,61	71.661,13
Cost per DALY averted (NPR)	19.655,01	24.114,17	21.870,36
Cost per DALY averted (EUR)	**172,86**	**212,07**	**192,34**
Expenditure at village level only (VDRC + Karuna PSC) (NPR)	4.444.904,97	3.164.161,04	7.609.066,02
Cost per capita for assessment period (NPR)	257,11	82,97	137,29
Cost per direct beneficiary for assessment period* (NPR)	28.132,31	18.947,07	23.412,51
Cost per DALY averted (NPR)	8.295,06	5.980,77	7.145,30
Cost per DALY averted (EUR)	**72,95**	**52,60**	**62,84**
VDRC expenditure only (NPR)	3.353.541,83	2.354.295.00	5.707.836,83
Cost per capita (NPR)	193,98	61,73	102,98

Cost per direct beneficiary for assessment period* (NPR)	21.224,95	14.097,57	17.562,57
Cost per DALY averted (NPR)	6.258,36	4.450,00	5.359,95
Cost per DALY averted (EUR)	**55,04**	**39,14**	**47,14**

* The cost per capita is given for the assessment period (August 2011-December 2013) and is based on entire village population, since the entire village benefits from the programme. Likewise, cost per direct beneficiary is also for the assessment period of August 2011 to December 2013. It is difficult to estimate the cost per direct beneficiary per year since the direct beneficiaries receiving treatment and/or rehabilitation services entered and exited the programme at different points of time during the assessment period. Assuming all direct beneficiaries were part of the programme for the entire assessment period would underestimate cost per direct beneficiary per year.

Annex 4 – Field visit itinerary

Date	Day	Time	Activities	Location	Accompanied by
13th Nov 2014	Thursday	2.30 pm - 3 pm 3pm onwards 5pm 6pm	Dr Padam Bahadur Chand, Joint Secretary, Senior most official in Ministry of Health and Population; Meeting with Homkala Pandey, Under Secretary, Disability section, Ministry of Women, Children and Social Welfare (11.30 am); Introduction presentation Meeting with Dr Krishna Prasad Dhakal, NLR;	Ministry of Health and Population Ministry of Women Children and Social Welfare Country Office, Karuna	Betteke De Gaay Fortman/ Deepak Raj Sapkota/ Aradhana Thapa
14th Nov 2014	Friday	8.45 am 11 am - 12 noon 2 pm onwards	Fly to Sunsari Meeting with District level stakeholders (District Health Officer, Local Development Officer, Women and Children Development Officer and District Education Officer) Field visit- Dumraha (I2C village) In I2C village- Meeting CBR Facilitator, Village Representative, VDRC committee members, and Health Post In charge	Field Office, Sunsari Dumraha, Sunsari	Deepak Raj Sapkota/ Yogendra Giri/ Aradhana Thapa

			Reviewing documents		
15th Nov 2014	Saturday	9 am - 10 am 12 noon - 1 pm 3.30 pm	Meeting with Program Director, if required In non- I2C village- Meeting Health Post In charge, Village Representative and Opinion leaders Fly back to Kathmandu	Sunsari district/ Kathmandu	Yogendra Giri/ Aradhana Thapa
16th Nov 2014	Sunday	8.30 am – 9.30 am 9.30 am – 10.30 am 12.30 pm – 1.30 pm 2 -3 pm	Meeting with Sudarshan Subedi, Chairperson NFDN Meeting with CBR Department- Sr. Program Officer and Monitoring and Evaluation Manager Mr Ghanashyam Gautam, GIZ Leprosy Division, Ministry of Health	Country Office, Karuna	Aradhana Thapa

17th Nov 2014	Monday	7 am 11 am - 12.30 pm 12.30 pm - 1 pm 1 pm onwards	Leave Kathmandu for Rasuwa district Field Visit- Laharepauwa (I2C village) In I2C village- Meeting CBR Facilitator, Village Representative, VDRC committee members, and Health Post In charge Reviewing documents Travel to Dhunche	Rasuwa district	Aradhana Thapa
18th Nov 2014	Tuesday	10 am - 11 am 11 am - 12 noon 1 pm 7 pm - 8 pm	Field Visit- Dhunche (Non-I2C village) In non- I2C village- Meeting Health Post In charge, Village Representative and Opinion leaders Reviewing available documents Meeting with District level stakeholders (District Health Office, District Development Committee, Women and Children development Office, District Education Office) Return to Kathmandu Meeting with Country Director, Karuna Foundation	Rasuwa district/ Kathmandu	Aradhana Thapa
19th Nov 2014	Wednesday	6.55 am	Fly back	Kathmandu	Aradhana Thapa

Annex 5 – Terms of Reference

Terms of Reference

"Cost effectiveness and - efficiency evaluation *Inspire2Care*"

Context

Netherlands Leprosy Relief (NLR) and Liliane Foundation have expressed their interest in the holistic CBR project *Inspire 2 Care* as developed by Karuna Foundation in the period August 2011-December 2013 in Nepal. Liliane Foundation and NLR are currently investigating how the experience of Karuna Foundation with this project could be used as a basis to develop a joint project in Nepal with the three organisations.

To provide proper insights to justify decisions on steps to be taken in this process Liliane Foundation and NLR have agreed that an external evaluation of the *Inspire 2 Care* project of Karuna Foundation, primarily as to its cost effectiveness and - efficiency, is an indispensable element. It was therefore decided by the two parties that this assignment should be done by a health economist from KIT. Karuna Foundation has agreed with this external evaluation of *Inspire 2 Care* and will facilitate the process.

The exercise will both be retro- and prospective. Evaluating what has been done but also providing recommendations to NLR and Liliane Foundation on how to proceed.

NLR is the official contractor for the assignment, as stated in the Consultancy Agreement.

Objectives

The study has the following objectives:

1. Conduct a concise contextual analysis of major actors in the field of health and major health problems in Nepal but such with a focus on disabilities.

2. Evaluate the *Inspire 2 Care* project as developed by the Karuna Foundation during the first phase (period August 2011-December 2013) on:

    a. its cost effectiveness and – efficiency, with special emphasis on the following sub questions:
        - Have project results and outcomes been achieved with an efficient use of (financial) resources?
        - Could the objectives of the project be achieved more cost effectively with different or differently organized project interventions?
        - Could the objectives of the project be achieved more cost effectively with a different balance between overhead, indirect costs and direct costs and/or with an

alternative organizational structure, both at country office in Kathmandu and field offices?

b. the long term sustainability of the approach, looking at it from a wider perspective including specialized care for persons with disability who have long term high support needs
c. The replicability of the approach in the Nepali context as elaborated under 1

3. Provide proper insight in the structure of the currently proposed budget for an upscaling of *I2C* (period 2014-2018) and recommend on restructuring if such is deemed beneficial.

4. Provide insight in the changes in budget composition for the scaling up phase compared to the budget of the first phase and recommend on expected changes for cost-effectiveness of the project if *I2C* would scale up according to the proposed budget.

5. Set common definitions for budget- and expenditure categories as well as calculation principles so that alternative models of the *Inspire to Care* project may be developed and could be compared as to their cost efficiency and - effectiveness.

Methodology

The assignment will include:

- contact with the Head Offices of Liliane Foundation and NLR to get information on their expectations of the assignment.
- a desk study of the most pertinent documents provided by Karuna Foundation and of similar approaches developed in other contexts.
- a field visit to project areas in Nepal to collect and verify data and have discussions with stakeholders in the field

The evaluation will be done by a health economist and therefore will be mainly quantitative. Cost-effectiveness will be measured in cost per DALY, for which the necessary data (e.g. results of the project and expenditure reports) will be provided by Karuna Foundation.

Timing and planning

The evaluation will take place between 5 November – 1 December 2014, for a maximum of 21 days, including:

- Preparation: 5 days
- Field visit:8 days (including 2 travel days to and from Nepal)
- Analysis: 4 days
- Report: 4 days (draft + final version)

The locations for the field visit will be pre-discussed between the health economist, NLR and Liliane Foundation. Actual planning and selection of persons for interviews etc. is in hands of the health economist, and the tentative itinerary may be subject to minor change based on first findings in the

field, if needed to complete the assignment successfully. The number of days in the field may however not be adjusted.

The planning for the field visit is tentatively outlined in the following table:

10th Nov 2014	Karuna Foundation Country Office Kathmandu
11th Nov 2014	Sunsari district
12th Nov 2014	Sunsari district/ Kathmandu
13th Nov 2014	Respective Offices, Kathmandu
14th Nov 2014	Rasuwa district
15th Nov 2014	Kathmandu

Outputs

1. A clear and concise report structured according to the terms of reference within 2 weeks upon completion of the field visit, to be submitted to the official contractor NLR.
2. A presentation of the conclusions and recommendations after the report is finalized, to be organized in coordination with NLR.