

Proposal form for multi-year projects

(BMZ-funding title for private German associations, Chapter 2303 Title 68776)

Part II

DETAILED DESCRIPTION OF THE PROJECT

The proposal application form consists of two parts, which are to be submitted (both) through the application portal of *Engagement Global* (see www.antragsportal.engagement-global.de).

Part I should be submitted online in the application portal mentioned above. The following information should be submitted:

Contact details of the German NGO, of the local partner, basic information on the project such as: project country, duration, project title, financial plan / budget, requested funds, breakdown of operation and human resource expenses by fiscal year; additional information for construction projects; if applicable, application on commissioning of independent chartered accountants; if applicable, application on early use of own funds as well as additional declarations.

Part II is this document as Word-/Open Office-format, which can be downloaded from the application portal mentioned above or from bengo's website (see <http://bengo.engagement-global.de/downloads.html>). Please note that the total length of Part II should not exceed 15 pages.

Project number: *P1867*

German NGO: *Christoffel Blindenmission Deutschland e.V. (CBM)*

Project country: *Zambia*

1. Details on the local partner / implementing partner

Summary (*Content of paragraphs 1.1 to 1.5, approx. 10 lines*)

The Beit Cure Hospital (BCH) is a recognized Zambian NGO and registered as a teaching hospital. The mission of the hospital is the healing of children with treatable physical disabilities and accordingly the teaching hospital is equipped with disability specific departments. BCH is currently the only hospital in Zambia that can perform certain complex operations (such as artificial hip and knee joints and operations on the middle ear). A large part of the budget (73 %) of the BCH currently still comes from international donations. In the future, income shall be diversified. BCH was already the local partner of a BMZ co-financed project in cooperation with CBM (project number: 2009.1578.5, project title: "*Aufbau ohrenmedizinischer Dienste in Lusaka, Sambia*"). For CBM, BCH is a reliable and strategic partner in Zambia.

1.1 Contact details and contact persons

Beit Cure Hospital
Great North Road
Plot 34872/A
P.O Box 36961

Ansprechpartner:
Steve Hitt
Executive Director
Tel: 260 977 373713

1.2 Legal structure, description of the organizational goals, non-profit status

The Beit Cure Hospital (BCH) is recognized as a Zambian non-profit organization with the Department of Home Affairs (ORS/102/35/3682) and registered as a teaching hospital with the Zambian Medical Council under the number HPCZ/101/3/0124. This entitles the hospital to provide medical services and training and further education within the framework of health legislation. BCH can also import medical supplies free of tax and customs. The mission of the hospital is the healing of children with treatable physical disabilities and accordingly the teaching hospital is equipped with disability-specific departments. BCH also advocates the rights of disabled children.

1.3 Personnel, professional and financial capacities, details on existing or planned collaboration with other donors

BCH is a surgical hospital with 58 beds, a children's ward, physiotherapy, hospital pharmacy, radiology ward, ENT ward and an orthopedic surgery ward. Treatment focuses on clubfoot, skeletal malformations, middle ear infections, hearing impairment and the surgical correction of crania-facial deformities such as cleft lip and palate. The hospital currently employs 105 staff members, with some highly qualified positions currently being filled by expatriate specialists. The goal is to transfer these positions to Zambian specialists by building up local capacities. The current personnel structure is as follows:

4 surgeons	3 other paramedical specialists
3 anaesthetists	12 nursing assistants
3 clinical officers	20 administrative staff
28 nurses	32 auxiliary staff

BCH's annual budget in 2017 was USD 2.2 million. The majority (60 %) still came from international grants, primarily from the US NGO Cure International – sponsor of the hospital – as well as from CBM and other smaller donors. The Zambian government finances 5% of the expenditures. Moreover there is a number of private local partners: Beef and dairy products are supplied free of charge by the Zambeef Group, Toyota supports vehicles. The share of other locally generated income is expected to increase significantly in the future. A part of the large BCH site, which is not required for hospital buildings, can be leased. BCH is currently in negotiations with an investor in this regard who wants to build a local branch of a South African Outdoor store linked to the adjacent shopping mall. Starting in 2019 this would generate revenue above € 100 000 / year. In addition, the revenue from treatment fees could be increased if higher-paying patients were taken in. The demand for this exists. Within the framework of the non-profit mandate, this could in the future subsidize the pro-poor-oriented services. At the end of the day however, a non-profit and pro-poor hospital in Zambia – even less than in Germany – will remain dependent on external support for the foreseeable future. This support will be primarily ensured by Cure International.

BCH works primarily with Cure International and CBM. In orthopedic training there is a cooperation with Oxford Brookes University, financed by the Department for International Development (DFID). In the past BCH was also a place of work for Weltwärts volunteers who were sent via DED/GIZ. Since October 2017, BCH and CBM have been working with the Scottish Government on a 4-year pilot project amounting to GBP 1.2 million. The aim of the project is to improve services in the areas of ear health within the framework of the national ENT strategy. The geographical focus of the project is the Central Province. The focus is on the training of specialist personnel (especially nurses, community health workers and hearing aid technicians) as well as the equipment of selected health centres. In addition, the project plans to establish a referral system within Zambia's central province. For this purpose, six

general and district hospitals will be equipped with sufficient equipment. This would enable them to manage an increasing number of patients, which will now be transferred through the better prepared first level of the health system. The project will also involve communities by implementing easily accessible awareness raising activities in the field of ear health and health services. The project proposed here is intended to build on and complement the project financed by Scottish Aid.

1.4 Activities, strategic areas (Sectoral and regional)

The focus and sectoral scope of the hospital is on the treatment of children. Nevertheless, about 15% of treatments are made accessible to adult patients each year, because BCH is currently the only hospital in Zambia that can execute complex surgery such as artificial hip and knee joints and operations on the middle ear. Adults' treatment fees are used to support hospital's operations. BCH is integrated into the CURE International network. They share the vision that national capacities, especially in the fields of surgery and care, will be built up together with the Zambian government and the medical faculty of the University of Zambia. The cooperation between BCH and universities is already well established. Medical specialists from BCH and CURE lecture at the University Teaching Hospital (UTH). Zambian medical students and doctors in specialist medical training complete their practical phases at the BCH. These practicals are done in the areas of surgery, provision of hearing aids and orthopedic aids, clubfoot treatment, outreach clinics in rural areas as well as training and research. Due to the location in Lusaka, the majority of patients come from the greater Lusaka area. However, through outreach activities and networking with hospitals and other health, social and educational centres as well as churches, BCH also reaches patients and specialists from all over Zambia. Due to the uniqueness of certain treatment options, some patients from DR Congo, Malawi and Zimbabwe visit the hospital.

1.5 Relationship between the private German NGO/the applicant and the local partner in the developing country, assessment or justification of the cooperation

The cooperation between BCH and CBM has existed since 2008. BCH has proven to be a reliable and strategically important partner through which it is particularly possible to refine medical services at other health centres and at the political level in the country. BCH was the local partner of a BMZ co-financed project (project number: 2009.1578.5, project title: "*Aufbau ohrenmedizinischer Dienste in Lusaka, Sambia*") and a project funded by Irish Aid in cooperation with CBM. Thus, BCH has experience in the implementation of similarly complex projects. CBM and BCH are also planning further cooperation in the future, especially in the development of improved orthopedic services in Zambia. At the end of 2017, with the support of the Scottish Government, the implementation of a 4-year pilot project has commenced. The goal of the project is to improve access to ENT services in the central province of Zambia, focusing on ear diseases. The total approved funding is GBP 1.2 million, so that medical staff of at least 100 First Level Hospitals (FLH) can be trained at BCH in ear related primary care.

2. Initial situation / problem analysis

Summary

Hearing impairments are accompanied by a high degree of exclusion, more difficult social and economic participation and hence an increased risk of poverty. About half of the hearing impairments could be prevented or their effects could be reduced by medical and rehabilitative measures. To achieve this, it is necessary for the population to have access to ENT services at different levels. This is currently not guaranteed in Zambia (core problem). The World Health

Organization (WHO) estimates that between 670,000 and 1 million people are affected by hearing impairment in Zambia. Ear surgery in Zambia, with a population of approximately 17 million people, is currently carried out by only 4 ENT surgeons at UTH Hospital and BCH. This corresponds to one surgeon per 4.25 million people and is still below the WHO minimum standard.

2.1 Initial situation and problem analysis (detailed description)

Hearing impairments are accompanied by a high degree of exclusion, more difficult social and economic participation and hence an increased risk of poverty. About half of the hearing impairments could be prevented or their effects mitigated by medical and rehabilitative measures. To achieve this, it is necessary for the population to have access to ENT services at different levels. This is currently not given in Zambia. A fundamental challenge is that – similar to other contexts – the focus in ETN is on nose and throat diseases. There is very limited data, experience, resources and activities on ear related diseases in Zambia. This gap is also reflected in the national ENT plan. At the same time however, an increasing number of actors is becoming active in the ENT sector and audiology. This requires strategic orientation. Being key actors in the field, CBM and BCH were recently asked by the MoH to support the collection and analysis of epidemiological data as a basis for planning audiological services in the country.

Based on estimates for Sub-Saharan Africa by The World Health Organization (WHO) it can be assumed that between 670,000 and 1 million people are affected by hearing impairment in Zambia, which corresponds to a prevalence of 4-6 %. Zambia has one of the highest HIV prevalence in the world with 12.4% (15-49 year-olds) and a significant number of HIV/TB co-infections, increasingly with resistant tuberculosis pathogens.

Therefore, a relatively higher disease burden can be assumed in the field of ENT than in countries with lower HIV and TB prevalence. Especially increased chronic otitis media and treatment-induced hearing damage caused by the side effects of the second and the third line of TB drugs have been documented in studies from similar contexts. Like other types of disability, there is a link between poverty and disability. People living in poverty are exposed to a higher risk of acquiring a (hearing) impairment, because they usually have less access to health care (e.g. treatment of otitis media) and are often exposed to more harmful external influences (e.g. noise, risk of accidents as a consequence of physical labour without adequate protection). Conversely, hearing impairments in particular make it difficult to participate in education and in economic and community life through information and communication barriers. The risk of poverty is also increasing for the people affected and their families, who are obliged to spend additional resources for the care and support of their relatives. Although no national data on disease burden of children are available, it can be assumed that, as in other contexts, this group is disproportionately affected by ENT diseases. In 0-6-year-olds, it is important to treat ear diseases early and effectively in order to exclude consequential damage and hence the exclusion from educational opportunities.

For the prevention of hearing impairment, treatment and rehabilitation of people affected, it is necessary that several levels in the health system work together productively. This begins at the community level, where basic health services need knowledge about prevention (such as hygiene, accident prevention) and early detection of diseases. On the district level, health care workers and general practitioners need to be able to provide simple treatments, identify more complicated cases, and order referrals. The highest level, the provincial hospitals, needs the capacity to carry out complex surgical procedures, especially if they are increasingly in demand due to improved diagnostics and referrals from the lower levels. In addition, there is the need for hearing aid technicians and speech therapists to reduce the negative effects of hearing impairment. **Ear surgery in Zambia, with a population of approximately 17 million people, is currently carried out by only 4 ENT surgeons 2 each**

at UTH and BCH. According to WHO recommendations it should be 34. In addition, there are other ENT specialists in the country who cannot perform ear operations due to a lack of surgical qualifications, as well as 4 doctors who are currently undergoing ENT specialist training. Without appropriate practical training in ear surgery and suitable locations/specialist clinics they will hardly be able to apply their skills, let alone perform complex ear operations. The following table compares the current situation and the targeted situation for an adequate service provision for the population according to the national ENT Health Strategic Plan (NENTHSP):

Qualification		Situation 2017			Desired situation for 2021
		Public	Private	Missionary hospital	
1	ENT specialist surgeon	2		2	8
2	ENT surgeons in specialist training				10
3	Medical Licentiates with ENT qualifications	23			5
4	ENT specialist nurses	-	-	1	24
5	Audiologists	-	1		6
6	Hearing aid technicians	3	2	3	13
7	Speech therapists	-	3		17
8	Speech therapy assistants	1	4		20

There are currently ENT wards at the following hospitals:

Province	Hospital	Medical speciality	Medical professionals
Lusaka	UTH	ENT, audiology and speech therapy	ENT surgeon, ENT specialist and audiometry technician
	BCH	ENT, audiology and speech therapy	ENT surgeon, ENT specialist and audiometry technician
	Levy Mwanawasa General Hospital (LMGH)	ENT	ENT specialist (medical officer)
Central	Kabwe General Hospital	ENT	ENT specialist (medical officer) and medical officer
Copperbelt	Ndola Central Hospital	ENT and audiology	ENT specialist (medical officer), ENT clinical officer and audiometry technician
	Arthur Davidson Children's Hospital (Ndola)	ENT	Medical officer
	Kitwe Central Hospital	ENT	Medical officer
Western	Lewanika General Hospital (Mongu)	ENT	ENT specialist (medical officer)

Only BCH is currently in a position to carry out more complex treatments and in particular ear operations and to provide rehabilitative treatment for people with hearing impairments. Due to lacking equipment, UTH can only deliver very limited services. With appropriate training and equipment, the Kabwe General Hospital and Livingston General Hospital can establish general ear medical services. The same applies to Livingstone General Hospital. Currently, a doctor sent by the Zambian Ministry of Health is completing specialist training in South Kenya. As this doctor will operate the ENT ward in Livingstone from 2020, it will be set up as part of the proposed project. For surgical operations, this means a continued focus on the three sites in Lusaka, Livingstone and Kabwe. Nevertheless, this is considered to be sensible, because it allows to build up the ear care generally. On the one hand, two

of such services in Lusaka and, in the future, Livingston and Kabwe are not expected to provide an oversupply, and, due to their good infrastructure and transport connections, they are also well suited to cater for patients referred by the clinical services of other hospitals. On the other hand, from a cost-benefit perspective, a pragmatic approach is applied in which existing preconditions are first used before additional highly specialised services are built up. Also with regard to specialists, it is easier to attract and keep in service specialists for the capital Lusaka and the regional centres Kabwe and Livingston due to the attractiveness of the location.

2.2 Project preparation (Preliminary arrangements of the planned project)

In 2007, BCH and CBM began planning for an otology clinic, which led to an application to the BMZ for the construction of an otology ward (BMZ No. 2009.1578.5). At the same time, CBM sent an experienced ENT surgeon to Zambia with its own funds to expand ENT services at BCH. This project is now a strategic further development based on the previous project. While the previous project focused on the development of ear medical services at BCH, the planned project is designed to make this knowledge and these services available nationwide through cooperation with other public and non-profit organisations. In 2014, the national ENT conference established the National Ear, Nose and Throat Committee (NENTHC) including the Zambian government, various non-governmental organisations (NGO) (including BCH and CBM) and the WHO. This committee developed the National Ear, Nose and Throat Health Strategic Plan (NENTHSP), which was adopted by the Ministry of Health in October 2017 and operationalized in February 2018 through a nationwide stakeholder workshop supported by CBM in Lusaka. The workshop was conducted by the national ENT coordinator of the Ministry of Health. The expatriate ENT surgeon sent by the CBM played a central role in the Zambian health system in the elaboration of the plan, the discussions on its implementation and in the training of specialist personnel, increasingly also beyond BCH. The expatriate ENT Surgeon played a vital role in the development of the plan, discussions around its implementation and training of local specialists. The partner BCH and indirectly CBM are now among the most important stakeholders in the planning and development of ENT services in the country. As the expatriate surgeon will finish her services in the summer of 2018, BCH and CBM endeavor within the scope of this proposal to partially finance an adequate replacement, in particular to support the implementation of NENTHSP and further develop its audiological sections.

In addition, BCH and CBM work closely together with the Cheshire Community Based Rehabilitation Programme, which works at community level with people with disabilities. This is where a large part of patient identification, referral and aftercare takes place. This programme provided important inputs for the national plan and this project. In preparation for this project, a feasibility study by Prof. Lebogang Ramma of the University of Cape Town (UCT) was also conducted on behalf of CBM in 2016. This study and an update are available to Bengo and findings regarding the disease burden, possibilities and priorities of ENT services in Zambia were included in this proposal. The planning was done in coordination with the Zambian Ministry of Health. Recently, this has shown, not least by sending doctors for ENT specialist training to Kenya, among other places, that it takes the implementation of NENTHSP seriously and is acting constructively within its limited financial possibilities. All medical specialists for training activities, who were identified in the proposed project, are provided by the Ministry of Health and return to their positions after completion of the training activities.

3. Target group

Summary

In the scope of the project, activities will be implemented at the macro, meso and micro level.
Macro: It directly reaches 10 decision makers in the health system and specialists and managers

from the health administration and the civil society, who are trained in ENT-specific public health planning. In addition, the curriculum for the training of health personnel is being revised on an ENT-specific basis at national level. Furthermore, the project will contribute a survey to the data basis needed for the further development of ETN services. Meso: A total of 80 medical and paramedical specialists are trained in the prevention, diagnosis, treatment and rehabilitation of ear diseases. Micro: Audiological services will be offered to 10.4 Mio people. 31.800 people with ear diseases who are threatened or affected by hearing impairment are treated medically. 22.100 children will be screened at school and 1970. people will undergo ear surgery treatment.

Target groups are:

At the macro level: Employees and decision makers of Zambian health authorities and hospitals, which will be capacitated for the implementation of NENTHSP; they receive support in the implementation of the national strategy. The project directly reaches 10 decision makers in the health sector and specialists and managers from the health administration and the civil society, who will be trained in ENT-specific public health planning. It also reaches experts in the ministries and experts involved in the development of the national curriculum for the training of health personnel in ENT issues and key actors involved in the further development of the ENT plan and its services.

At the meso level: 80 medical and paramedical specialists, who are trained in prevention, diagnosis, treatment and rehabilitation of ear diseases and for their part train further specialists and assistants. This includes 4 ENT surgeons, 30 nurses or clinical officers, 4 hearing aid technicians, 12 speech therapy assistants and 30 community health workers.

At the micro level: The availability of audiological services in the Central and Western Province and Lusaka will increase. Up to 10.4 Mio inhabitants of the target regions will potentially profit from this, 51% of which female and 68% below age 35. 1.970 patients with ear diseases will be treated surgically at BCH and its partner hospitals in Kabwe, Livingston and Lusaka. This increase is to a large extent possible due to the strengthening / establishment of the relevant services at the partner hospitals. 22.100 children will be reached in school screenings, a further 31.800 in outreach clinics. Minor interventions will be performed on site while complex cases will be referred to the project's partner hospitals. Initially BCH's outreach activities reached significantly less males than females (2011 857:1334). By adapting the activities in line with the requirements of their target groups, the ration has been equalized since (2017 3.694:3.806). The proposed project aims to keep this balance. In school-screenings the ration has been balanced from the onset. Children who are missed – those with hearing deficits often do not attend school – are reached by outreach clinics. These focus in children from poor backgrounds. In accordance with BCH guidelines, patients up to 18 years old are treated free of charge; for adults, the fees can also be reduced or waived if necessary. Outreach activities and school screenings are targeted at areas with a high concentration of poor people.

4. Logframe (goal, objectives, results and indicators)

Overall goal (Impact): ENT medical services in Zambia are sustainably established

Specific objective (Outcome):	Indicators	
	Actual status	Target

1. The prevention, diagnosis, treatment and rehabilitation of hearing loss in Zambia is improved.	1. 2017: 320 ear operations <ul style="list-style-type: none"> • 300 at BCH • 20 at UTH 2. Nurses and Clinical Officers don't receive training in ear specific ENT	1. 1,970 ear operations until 2021 at BCH, THU, Livingston, Kabwe (2018: 400, 2019: 450, 2020: 500, 2021: 620) ¹ 2. Nurses and clinical officers are trained in ear specific ENT in line with an adapted curriculum
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Results (Output):	Indicators (possibly including quantity structure)	
	Actual status	Target
1. The treatment of ear diseases is permanently embedded in the Zambian health system.	Strategic ENT plan (ENTHSP) is approved but not fully implemented. Ear specific ENT topics are not part of the curriculum for training of Nurses and Clinical Officers	Ear specific services are established in two provinces and strengthened in Lusaka Ear specific topics are part of the curriculum for the training of Nurses and Clinical Officers
2. An increased number of ear specific qualified medical and paramedical specialists are available in the target provinces	Ear surgery is currently performed by only 4 ENT surgeons in the target provinces.	8 ENT Surgeons; 10 Public Health Planner; 4 Hearing Aid Technicians; 12 Speech Therapy Assistants; 30 Nurses; 30 Community Health Workers; have been trained and apply their ear specific knowledge. The target is to have a balanced gender ratio
3. Ear medical infrastructure is permanently improved in Zambia.	There is no clinical unit offering the services of Hearing Aid Technicians.	4 clinical units offer the services of Hearing Aid Technicians

¹ This indicator appears, although initially output indicator, to be suitable for outcome measurement, because only through the interaction of the activities can a significant increase in ear operations be achieved.

4. Outreach-activities and Screenings have reached more patients.	Clinical Outreach Activities 2017: 7.500 School Screenings 2017: 5.360	Outreach-Activities reached 31.800 patients (2108: 7.900; 2019: 8.200; 2020: 8.300; 2021: 7.400) School-Screenings reached 22.100 children (2018: 5.400; 2019: 5.600; 2020: 5.900; 2021: 5.200)	+
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5. Activities, methods and instruments to achieve the objectives

5.1 Timetable including all activities

Activities	Preliminary study	1. project year	2. project year	3. project year	4. project year
	2016	2018	2019	2020	2021
Feasibility study & update					
Marco level					
Training in public health and planning for ENT					
Epidemiological Survey					
Revision of the ENT curriculum					
Coordination meetings for the national plan					
Meso level					
Furnishings offices/treatment rooms					
Equipping hospitals with instruments					
Establishing bone lab at UTH					
Training of ENT surgeons (block and continuous)					
Training of hearing aid technicians					
Training of speech therapy assistants					
Training of general practitioners, clinical officers, nurses					
Training of other nurses					
Training of community health workers					
Micro level					

Intensified operations at BCH																				
Outreach activities and school screenings																				
Project-accompanying activities																				
Mid-term & final evaluation																				

5.2 Precise description of project activities, methods and instruments to achieve the objectives

This project is based on a multi-level approach. At the macro level, it aims to permanently establish ENT medicine with a focus on otology in Zambian health policy and the health system. At the meso level, the aim is to train and further qualify a sufficient number of medical and paramedical specialists in order to enable successful ENT and especially ear medicine services. In all training activities the aim is to have a balanced gender ratio. At the micro level, the aim is to reduce the large number of untreated people, especially from low income groups. The qualification of the personnel and the establishment of ear medical services on the level of primary health care are crucial for this.

At the macro level:

In cooperation between the national health system and NGOs, a strategic plan to improve ear health has been developed. In February 2018, the key stakeholders - the Ministry of Health, Starkey Foundation, BCH and Sound Seekers - agreed on a preliminary implementation plan through a comprehensive ENT workshop. BCH was represented by CBM's expatriate ENT surgeon. A final plan is currently jointly elaborated. For this purpose, a course in public health planning for hearing impairment is to be held for **10 decision makers** in Zambia. This course has already been successfully conducted in various African countries (South Africa, Kenya, Rwanda). The first course in Zambia was held in December 2017 by the London School of Hygiene and Tropical Medicine. 10 representatives of health authorities, universities, governmental and civil society organisations in the health sector are to be invited to the next course planned for 2019. The lecturers are practitioners from similar African contexts. This course is one of the components to ensure that ENT medicine is integrated into basic medical care in all provinces of Zambia – even beyond the target provinces of this project. This integration will be strengthened by involving key decision makers in the planning of the health system. For the 5-day course, a **total of EUR 5,000** (position 1.2.1) was budgeted for travel expenses, the lecturers' fees, accommodation and meals for 10 participants.

Costs PHP for Hearing Impairment

Item	Number	Costs / number	Total EUR
Food	35	20	700
Accommodation	25	60	1.500
Transport national (average)	5	50	250
Transport international	1	800	800
Trainer/in (incl. 1 day Travel)	7	250	1.750
Total			5.000

On request of the national ENT coordinator, the project will support the Zambian Government by supporting an epidemiological survey in ear specific diseases. This is important for the evidence-based prioritization and planning of interventions in the context of the implementation of the national ENT strategy. This survey will be done in collaboration with the Department of Audiology of the University of Zambia and carried out in the project's target provinces. Its exact focus and Terms of Reference will

be developed jointly with the Ministry of Health and the University in 2019. It will be important to ensure complementary with other surveys currently planned by MoH and other actors. Overall costs of EUR 14.800 are budgeted including Consultancy fees as well as analysis and presentation of data.

Costs Survey

Item	Number	Cost / number	Total EUR
Food	10	20	200
Accommodation	10	60	600
Transport national (average)	10	50	500
Consultant	24	550	12.100
Design und Print	1	300	
Total			14.800

The implementation of the national ENT plan and BCH's contribution at provincial level will be announced at a **public launch event in Livingstone. In addition to information and educational activities, it also offers ear screenings by BCH and its trainees.** As these are accompanied by the expatriate ENT surgeon, they are also an on-the-job training for employees in training and further qualification. A similar event – carried out as part of the Scottish Aid funded project – carried out some 500 screenings. EUR 4,810 was budgeted for stage and event equipment, roof and seating, catering and travel costs for the invited press.

Costs Launch & Screening Event

Item	Number	Costs / number	Total EUR
Food	550	2	1.100
Tents / Chairs	1	3.300	3.300
PA-System	1	300	300
Transport Media	10	11	110
Total			4.810

For the monitoring of the implementation plan for the national ENT strategy, half-yearly meetings at national level, initially organised by BCH, are also planned. The cost was budgeted at EUR 5.500 for 15 participants – decision makers of all stakeholders of NENTHSP as united in the National Ear Nose and Throat Committee – and includes transport, accommodation and food. 6 Participants travel from outside of Lusaka. Costs were calculated on a degressive basis, as it can be expected that the Ministry of Health will increasingly develop ownership for the process and will cover the costs itself.

Costs ENT Meetings

Item	Number	Cost / Number	Total EUR
Transport national (average)	15	32	480
Coffee Break	15	10	150
Accommodation	6	60	360
Sustenance participants from outside Lusaka	6	20	120
Cost per meeting			1.110
Total costs 5 Meetings			5.550

The total costs for the implementation and monitoring of the national ENT plan thus amount to **EUR 30.160 (position 1.2.1).**

Zambia has developed and introduced the NENTHSP, which also includes the implementation of the revised curriculum for nurses and clinical officers. During the project, this curriculum will be revised to integrate ENT components. BCH – represented by the expatriate ENT surgeon – will work in an advisory role with the General Nursing Council, the Curriculum Development Centre and the Ministry of Health. This will contribute to the mainstreaming of ENT in basic medical care in Zambia. This will lead to hearing impairment being detected much earlier and at lower levels of the health system. This allows earlier and more cost-effective intervention for patients and the system and ultimately a national reduction in the number of patients with permanent hearing loss. As poorer people mainly access the lower levels of the health system, or are more affected by the indirect costs of time and transport to access higher levels, this activity also contributes to the focus on poor people. This curriculum review process including a validation workshop with up to 15 participants was budgeted at **EUR 11.270 (position 1.2.2)**.

Costs Workshops Curriculum Development

Item	Number	Costs /Number	Total EUR
Transport national	6	50	300
Transport local (average)	9	10	90
Accommodation	15	60	900
Food	15	20	300
Venue	2	300	600
Coffee Break	15	10	150
Facilitator	2	150	300
Materials	1	150	150
Costs per Workshop			2.790
Total Costs 3 Workshops			8.370

Costs Curriculum Launch

Item	Number	Costs / Number	Total EUR
Transport national	20	50	1.000
Transport local (average)	30	10	300
Food	50	20	1.000
Venue	1	300	300
Facilitator	1	150	150
Materials	1	150	150
Cost Workshop			2.900

Due to the high political importance of these processes, it is still necessary for BCH to employ an experienced international specialist in the field of ENT. This will have a decisive impact on the above and other national processes and working groups – as well as on the training courses described in the following section. For this, 50% of the employment of a specialist is budgeted. The remaining 50% – primarily for clinical and managerial work at BCH – is covered by the project partner BCH and CBM's own funds. The position is degressively budgeted, as most of the relevant activities can be completed or taken over by a local specialist by the end of 2020.

At the meso level:

At the meso level, a total of 80 specialists are to be trained and further qualified in order to be able to offer ear medical services permanently in Lusaka as well as in the southern and central provinces of Zambia. Some of these specialists will then train other specialists themselves (Training of Trainers) and share their knowledge with their colleagues in their daily work. The courses and trainings will be held

mainly as block seminars and initially at BCH. These block courses will complement the Health Professions Specialty Training programme (SPT), introduced by the Ministry of Health in August 2017. SPT supports health specialists to complete specialist training by undergoing rotations in many fields that extend the traditional opportunities offered by the academic teaching hospital. After completing their specialist training, graduates are admitted to the community of practicing specialists and can register in specialist medical registers maintained by the Health Professions Council of Zambia (HPCZ). All courses are designed so that they can first be piloted at BCH and later be transferred to existing public training facilities.

Because of this increased need for training, it is planned to hire a highly experienced ENT surgeon and locate him/her at BCH. This specialization is also necessary in order to participate in and drive forward processes at national level and in the MoH. This cannot be dealt with by the business manager or the medical manager – currently an orthopedist – of BCH. The position is a further development of the position existing until June 2018 and held by a German ENT surgeon: It reflects the evolving nature of her work. While initially focused on working and training within BCH, she increasingly was asked to train MoH staff and participate in national health policy and planning processes. Hence has BCH become a key actor within the national ENT strategy. As there is no ENT specialist with sub-specification ear medicine and with the certified skills so train available in Zambia, the position will be announced regionally in southern Africa at the outset. The recruitment process takes into account the shortage of qualified personnel in the region and, if necessary, a qualified employee from another region is recruited.

The expatriate ENT specialist offers specialized training courses for the local ENT surgeons to be trained. During the project duration, **4 ENT surgeons** receive practical training in ear surgery in these courses. These currently work at different public hospitals in Lusaka and Kabwe and have signed a 5-year-bonding agreement with the MoH. At the beginning, the ENT surgeons are introduced in a one-week **basic ENT course** in the temporal bone lab. The costs for travel, accommodation and meals for the 4 ENT doctors are budgeted at EUR 3,600.

Costs courses at temporal bone lab

Item	cost /item	number	Total EUR
Transport	50	4	200
Accommodation	60	20	1.200
Food	20	20	400
Costs per training			1.800
Total costs 2 trainings			3.600

Building on these courses two times two ENT Surgeons will do a 5-day-training training in functional endoscopy / Sinus operation within the region in 2019 and 2020 respectively. Budgeted costs take into account the fact that – for lack of existence – these courses cannot be done in Zambia.

Costs Trainings abroad for ENT Surgeons

Item	Cost /item	number	Total EUR
Airticket	700	1	700
Accommodation	75	5	375
Food	30	5	150
Course Fee	500	1	500
Costs			1.725
Total Cost 4 courses			6.900

In 2021 one ENT Surgeon will do a five-day-training in head and neck surgery within the region. The budgeted costs of EUR 1.725 reflect the fact that these course are not available in Zambia, making travel within the region necessary.

Costs training abroad ENT Surgeon

Item	Costs / item	Number	Total EUR
Airticket	700	1	700
Accommodation	75	5	375
Food	30	5	150
Course Fee	500	1	500
Total Cost			1.725

In addition, the hospitals where the ENT Surgeons work will receive special instruments as described further below. (position 1.1.1.).

In addition to the 4 ENT surgeons, **30 nurses/clinical officers** from Livingstone and neighbouring districts will receive training in the basics of ear medicine and prevention of hearing loss, based on the WHO Primary Ear and Hearing Care (PEHC) concept. The training complements the Scottish Aid supported trainings in other regions. It will consist of a two-week course in 2019 and a two-day Training of Trainers follow-up course the following year. The amount budgeted for the courses is EUR 41.760 (Position 1.2.2) This includes transport, accommodation, meals, and materials.

Costs training nurses and clinical officers

Item	Costs / Item	Number	Total EUR
Transport	50	60 (30*2 Courses)	3.000
Accommodation	60	480 (30*14 + 30*2 Nights)	28.800
Food	20	480 (30*2 * 7 + 30*2 days)	9.600
Materials	6	60 (30*2 courses)	360
Total costs 2 trainings			41.760

In addition, the 30 sending institutions will be equipped with basic medical and diagnostic equipment with a total value of EUR 30.000 (position 1.1.1.). This includes, e.g., otoscopes, headlamps and small materials and is necessary to enable trained professionals to apply their new abilities on their return. The equipment for the sending institutions of the 30 nurses and Clinical Officers covers 1,000 EUR / institution. This basic equipment for audiological examination allows them to apply what they have learned after training. The cost calculation is based on current offers and is composed as follows:

Equipment for Primary Health Institution (30 Nurses)	Price	Unit	TOTAL
Otoscope	520	30	€ 15.600
Portable Headlight System	380	30	€ 11.400
Ear Syringe	35	30	€ 1.050
Nasal Specula	20	30	€ 600
Reusable Otoscope Tips	15	30	€ 450
Ear Wax hook	10	30	€ 300
Other small equipment	20	30	€ 600
Total costs			€ 30.000

Hereby the items listed are checked for availability in the country and maintenance is ensured. Other procurement costs (such as transport costs) are taken into account in the calculation.

In order to provide patients with hearing aids, a total of **4 hearing aid technicians** are to be trained in a one-year course in the years 2019, 2020 and 2021. The costs at the training institute in Nairobi are a total of **EUR 60,000 (position 1.2.1)**. This includes course fees, training materials, accommodation and meals. As Zambia currently does not provide training in this field according to international standards, the institute in Nairobi has to be chosen as an alternative. It teaches the adjustment and maintenance of hearing aids of all brands. This training complements the Scottish Aid funded activities to train 12 hearing care professionals. All trainees will be employees of the public health system who will sign a bonding agreement and apply their new skills when back into the service of the health system after their training.

Costs Training Hearing Aid technicians

Item	Costs / Item	Number	Total EUR
Airticket	700	4	2.800
Accommodation inc Food	8.400	4	33.600
Course Fee	3.000	4	12.000
Misc (Visa, Insurance etc)	2.900	4	11.600
Total Cost four courses			60.000

In order to ensure that the trained hearing aid technicians they start their work with the right equipment after training, the 4 sending institutions are equipped with necessary medical equipment.

Equipment Institutions 4 trained Audiotechs	Price	Unit	TOTAL
Tympanometer (measuring tool for diagnosis)	2000	4	€ 8.000
Audiometer	2000	4	€ 8.000
NOAH Hi-Pro (Universal Hardware Interface for Audiological Equipment)	600	4	€ 2.400
Laptop for the system	300	4	€ 1.200
Drill	900	4	€ 3.600
Set of custom molds (earmold for hearing aids / hearing protection)	1000	4	€ 4.000
Visual Audiometry System	950	4	€ 3.800
Hearing cabins for listening tests	5000	4	€ 20.000
Total costs			€ 51.000

Hearing cabins allow hearing tests to be conducted in a sound-proof environment, so that the best results are achieved when the equipment is adjusted for the patient's hearing performance without any noise. The Visual Reinforcement Audiometry (VRA) system is particularly useful for infants who are unfit for normal hearing tests.

In 2019, **30 community health workers** from Livingstone and neighbouring districts will be trained in Primary Ear and Hearing Care (PEHC) as defined by the WHO in a one-day training course. This activity complements Scottish Aid funded training for another 240 community health workers. The training mainly focuses on issues of ear hygiene and simple detection of diseases or hearing difficulties. Community health workers contribute to an efficient system of prevention, early detection and referral to other institutions that supports awareness raising at community level. Their geographical and social proximity promotes access to services for poorer people. Training costs are budgeted at EUR 3,360 for meals, transport and materials. Costs for accommodation and food differ slightly from other trainings since participants from the region arrive the night before and the training takes place at BCH.

Costs Training Community Health Assistants

Item	Cost / Item	Number	Total EUR
Transport	15	30	450
Accommodation	60	30	1.800
Food	35	30	1.050
Materials	2	30	60
Total Costs 2 courses			3.360

For the further rehabilitation of people with hearing impairments, the availability of speech therapists must also be ensured. For this purpose, **12 nurses are being trained as speech therapy assistants**. A 10-day course at BCH is planned for 2019, followed by another four-day refresher course, practical training and a Training of Trainers component. For the total of 16 days training a **total of EUR 24.400 (Position 1.2.2)** is budgeted for travel expenses, accommodation and course materials for the participants.

Item	Cost / Item	Number	Total EUR
Transport	50	36 (12 Trainees *3 courses)	1.800
Accommodation	60	192 (12*10+12*4+12*2)	11.520
Food	35	192 (12*10+12*4+12*2)	6.720
Materials	10	36 (12*3)	360
Trainer / day	250	16	4.000
Total three courses			24.400

A total of EUR 153.010 is budgeted for all training activities listed here (position 1.2.2).

A Zambian speech therapist, who was educated in the USA and has broad practical experience in the Zambian context, will be employed at BCH for the courses and further support of the trained speech therapy assistants. Within the scope of this proposal, 40% of this position is budgeted degressively for a total of two years and amounts to EUR 24,000 (item 1.3.2). With the remaining 60% – financed by BCH – the speech therapist will offer and supervise speech therapy services at the BCH. The function of speech therapy assistants is very important to ensure that children who need hearing aids also develop speaking-skills through audio-verbal therapy that enables them to translate sounds into speech. This opens up opportunities for them to attend general schools and pursue careers that offer them the same opportunities and independence as children with normal hearing. Thus, the cycle of disability and poverty can be broken.

At the micro level:

The activities at the micro level focus on reducing treatment backlogs and ensuring future treatment by trained and further qualified personnel. This includes the procurement of medical equipment. This equipment is based on a comprehensive needs assessment within the scope of the NENTHSP. Based on these, appropriate equipment recommendations for certain types of hospitals were developed. This was revised by experts from BCH together with CBM advisors. An updated selection has been made, which will enable medical professionals to develop adequate ear medical treatment services.

For clinical and surgical treatment at the **hospital in Livingstone**, a basic set of ear medical equipment is to be procured. Clinical and surgical equipment is to be procured for **Kabwe General Hospital** and **UTH Lusaka**. This includes e.g. endoscopes, orthoscopes, microscopes, erbotomes and surgical sets for ENT operations. The cost of equipping hospitals at the second level of the health system in Livingstone and Kabwe is budgeted at EUR 126,690. An investment of EUR 56,992 is budgeted for the tertiary

hospital UTH in Lusaka. In addition the bone lab to be built (see below) will be equipped with microscopes, drills etc. in the amount of EUR 29,060. Together with the budget of the above mentioned EUR 30,000 for institutions of nurses and EUR 51,000 for Hearing Instrument specialists a total of EUR 293,740 has therefore been budgeted for medical equipment at various levels (position 1.1.1.). A detailed list of planned procurements is available. Procurement will be done free of taxes and customs; transport costs are included.

In addition, the recommendations of the NENTHSP require further equipment, which is needed for the later expansion of the services, but is not budgeted here. Instead, the planned project is intended to act as a catalyst that will enable hospitals and the Zambian health system to further develop these specialist services. This further development is in the direct responsibility of the health authorities and their civil society partners.

The three hospitals in Lusaka, Livingston and Kabwe will each have an additional **office** with desks, chairs and computers to enable professional ear medicine and administrative work. These will be used by the staff trained in this project. In addition, basic equipment is required for the hospitals which sent trainees so that the trained hearing aid acousticians can start work. In addition textbooks and audio technology software will be funded. This sums up to a total of EUR 7,160 (position 1.1.2), which is EUR 2,020 for textbooks and audio-tech software and EUR 5,140 for office equipment.

After the end of the project, these costs are expected to be covered by the Ministry of Health. The MoH confirmed this in writing.

In addition, the establishment and equipment of a temporal bone lab with 3 workstations is planned for practical training in otosurgery at the UTH. ~~For this an annex to the existing training center at BCH will be build and equipped.~~ The establishment of the temporal bone lab will make a decisive contribution to improving the quality of ear surgery in Zambia. Only in such a temporal bone lab can prospective and practicing surgeons continuously improve their skills without risk for patients. The laboratory will be used first for training and then for continuous improvement of the practice of at least 4 ear surgeons resident in Zambia and will also be made available to surgeons from other countries. Regular practical training in this laboratory is essential to avoid complications caused by injuries to the facial nerve. The temporal bone lab is equipped with tables and surgical stools, a screen, refrigerator, 3 surgical microscopes, 3 drills, 3 instrument sets and a camera that can be connected to an operating microscope. The equipment is budgeted at EUR 29,060. The cost of setting up the temporal bone lab is budgeted at EUR 35,087. UTH is committed to cover the ongoing costs during and after the project and to ensure access for ENT surgeons of the BCH. These commitments will be part of the MoU, which is expected to be signed between UTH and BCH in November.

In addition, it is planned to install a water tank to ensure a constant and reliable supply of clean water from BCH. This is budgeted at EUR 18,425. (position 1.1.4).

During the project duration, a large number of **patients will be examined and, if necessary, treated**. This is done at BCH and the other participating hospitals and other health centres where the trained specialists work. These specialists thus acquire the necessary practice, treatment backlogs are partly reduced and the public's awareness of ear health is strengthened, because examination and treatment campaigns are communicated locally and attract attention. Therefore, it is planned to strengthen the **outreach activities** of BCH from the second project year onwards, but then to reduce them as other hospitals commence operations in their ear wards. In addition, outreach activities and referrals from other health care centers are expected to increase BCH's numbers of surgeries. For outreach activities, a vehicle of the project is available in which all necessary examination equipment are installed. Only

operating costs are incurred here for this existing vehicle. Total costs for outreach activities amount to EUR 71.620 (position 1.2.4):

Costs Outreaches and School Screenings

Outreach	2018	2019	2020	2021	Costs
Vehicle costs	3.640 €	5.490 €	3.660 €	1.830 €	14.620 €
Calibration of medical instruments	900 €	2.700 €	1.800 €	900 €	6.300 €
Informational materials	10.000 €	7.500 €	5.000 €	2.500 €	25.000 €
Medical consumables, outreach	5.000 €	3.750 €	2.500 €	1.250 €	12.500 €
Accommodation 6 nights/4 persons	3.360€	2.520	1.680	840	8.400
Meals 6 days, 4 people more remote outreach	1.920	1.440	960	480	4.800
TOTAL	24.820 €	23.400	15.600	7.800	71.620

5.3 Description of project-related activities, coordination and monitoring

In order to prepare this project, a **feasibility study** was conducted by the University of Cape Town. This took place in 2016 and updated in 2018 to bring it in line with current Bengo standards. It will be submitted with the project proposal. In the third year of the project, a **mid-term evaluation** is planned to check whether the chosen approach to building up ear medical services is effective, so that countermeasures can be taken during the duration of the project if necessary. In 2021 a final evaluation will be carried out. Feasibility Study and evaluations are budgeted with **EUR 27.000 (position 1.5)**.

It is planned to employ a **project manager**. Personnel costs amount to **EUR 72,000 (position 1.3.1)**. This person will be based at BCH and is responsible for the programmatic management of the project and timely and accurate reporting. These are not degressive, as the position is indispensable for project implementation and goal achievement.

The costs for medical personnel (ENT surgeon and speech therapist) amount to EUR 71.500 and are explained under 5.2. (Position 1.3.2). The speech therapist is budgeted with 40%. The costs of the ENT surgeon (EUR 47.500) refer to duties in terms of training of health workers in the public health system and participation in political processes. The costs do not include any expenses for accommodation etc. The calculation of the salary of which we budget 50% is based respective salaries in the Zambian public health system without any top-ups. In fact, Zambian health workers salaries in the public system consists of up to 40% of top-ups and incentives however. Also, public health workers are entitled to top-up their salaries by running a / working in private practice parallel to their normal public duties.² All costs of a full-time expatriate position which are not covered by the resources applied for in this proposals are borne by BCH and CBM. Costs are budgeted degressively since the position will be filled by a local expert by the end of the project.

A kick off workshop is planned for 2018 and budgeted at EUR 2.740 for coordination and final operation planning with all important stakeholders of the project consisting of CBM, BCH and Ministry of Health. This amount includes venue, meals for up to 12 participants and partly their travel and accommodation (position 1.2.3).

² [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(08\)60306-2.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(08)60306-2.pdf)

Costs Kick Off Workshop

Item	Cost / Item	Number	Total EUR
Accommodation	60	24 (3*8)	1.440
Food	20	40	800
Venue & Materials	500	1	500
Total Cost			2.740

This workshop is part of the operating costs listed in the table. The position Monitoring also includes local monitoring visits by BCH's project management team. The establishment of the ear medicine services at Livingstone Hospital is to be permanently monitored by the project management team (see Personnel) with the support of medical personnel during the project duration. Costs arise here from accommodation and meals as well as transport. Approximately 550 km are estimated per monitoring visit. These monitoring costs are not degressively budgeted, because they are only incurred for the purpose of the project during the project duration for the purpose of quality assurance. **Monitoring costs cover transportation and accommodation of the project team, as well as maintenance costs of the vehicle (total: 14.910 EUR, budget line 1.2.3).**

Additionally, under budget line 1.2.3 for local monitoring we have budget of EUR 20,800 for on-going office costs at Beit Cure Hospital: The project office is essential for monitoring, with proportionate running costs, office supplies, and communication costs.

For the project visits of CBM Germany, an annual amount of EUR 2,000 was budgeted. Due to the shortened duration of only four months, a pro-rata budget of EUR 800 was calculated in 2018, which corresponds to a total amount of EUR 6,800. External audits are budgeted at EUR 2,500 per year from 2018-2020 and EUR 3,000 are budgeted for the final audit (position 1.2.5).

Breakdown of operating costs by financial years in accordance with bengo:

		2018	2019	2020	2021	Total
1.2	For operating costs	41.690	126.040	98.740	44.470	310.940
1.2.1	Implementation of the ENT plan	5.920	22.020	1.110	1.110	30.160
1.2.2	Trainings	0,00	65.680	67.710	19.620	153.010
1.2.3	Local monitoring	7.730	10.280	9.660	10.780	38.450
1.2.4	Outreaches	24.820	23.400	15.600	7.800	71.620
1.2.5	Audit and bank fees	3.220,00	4.660,00	4.660,00	5.160,00	17.700,00

In light of the extensive travelling for outreaches, monitoring, trainings, and workshops it is necessary to procure a vehicle, budgeted at EUR 36.000 (Position 1.1.3). The operating costs of the vehicle are reflected in the table above.

6. Cooperation with other development activities in the area**Summary**

The project contributes directly to the implementation of the Zambian government's National Health Plan and specifically to the NENTHSP. It will also work closely with the activities of Sound Seekers, the Starkey Foundation and the Cheshire CBR Community Based Rehabilitation Programme (CBR). In addition, the project will be linked to the existing outreach activities and

education and training programmes at the UTH and the Chainama College of Nursing in Lusaka.

The project contributes directly to the implementation of the Zambian government's National Health Plan and specifically the NENTHSP. It is therefore closely coordinated with the Ministry of Health. It will work with the activities of the Sound Seekers organization, which provides hearing aids, among other things. At community level and for referrals, the project works closely with Cheshire CBR's Community-Based Rehabilitation (CBR) programme and various health and social centres and schools where hearing screening and outreach activities are carried out. In addition, the ENT medical training courses complement other training and further qualification courses which BCH conducts together with various stakeholders. These include, for example, the postgraduate programme in orthopaedics, practical training for nurses and nursing assistants, training courses for physiotherapists, traditional obstetricians, community health assistants, self help groups for parents of children with certain diseases or impairments and further training for hospital chaplains for the inclusion of people with disabilities.

7. Risks and risk-reducing measures

Summary

There is a risk that the training courses will not reach the expected number of participants, because the project does not reward participation with an allowance as is usual and even codified in Zambia. This is to be compensated for by close cooperation with the institutions involved. For the project, services should only be built up where a sustainable and permanent implementation can be realistically expected. This can be expected from the Ministry of Health. In addition, there is a discrepancy between the desired hospital equipment in the NENTHSP and the planned equipment within this project. "Complains" from hospitals that feel disadvantaged within this process are to be expected. Another risk is the brain drain of qualified personnel, which is to be counteracted by providing various equipment inputs, among other things.

One risk is that in Zambia, as in many other African countries, it is common practice to pay allowances for ministry personnel and health centers to attend meetings and training to cover travel, accommodation and meals costs on a lump-sum and generous basis. This is not part of this project. Instead, the costs will be reimbursed based on true costs. If the various institutions or government employees and experts are not convinced of the added value of the activities, so that they are either intrinsically motivated or the respective sending institutions finance these allowances from their own budgets, this can have the result that they do not participate or participate only insufficiently. Until now, the institutions involved have shown great interest in the planned activities and agreed to ensure that their employees participate accordingly.

The Ministry of Health affirms the decision making autonomy of NGOs such as BCH and CBM. For the project, services should only be built up where a sustainable and lasting implementation can be realistically expected. The national plan provides for the equipping of hospitals at 4 different levels, based on the assumption that individual hospitals with a very large number of operations and treatments should train and employ a particularly large number of specialists. Such cost intensive equipment seems too risky at the present time as some hospitals are currently unable to provide treatment and operations at all. Therefore, the planned equipment is limited to the institutions with direct project activities, whereby individual adjustments to the actual potential of the hospitals were

made in individual cases. The planned furnishing within the scope of the project is also aligned to the actual initial requirements rather than to the maximum requirements as set out in the equipment list of the National Plan. BCH and CBM have always stated in direct discussions with all parties involved that they will only make a contribution within their capabilities and that the main responsibility for implementing the overall plan is the responsibility of the Ministry of Health.

The project is vulnerable to possible brain drain. This is countered by various measures:

- Establishment of attractive working conditions by well-equipped hospitals in Zambia
- Focus on practical training of existing personnel, but no internationally acknowledged additional academic qualifications within the project
- Building up a "critical mass" of specialists who will further qualify themselves and others through courses and practical work, so that the level of knowledge on ear care and ENT medicine in the health system in general is raised
- Long-term integration of content on ENT and above all ear medicine into the training courses of the UTH and other training institutes for nurses and clinical officers as well as the further training programmes of BCH
- Existing bonding agreements between the Ministry of Health and doctors in specialist training will be complemented by similar agreements with all health workers trained in this project.

The same measure is being applied within the Scottish Aid funded project.

Nurses and clinical officers will receive a salary raise after being trained in this project. The planned training of hearing aid technicians only takes one year and is thus not up to the standards of the certifying and recruiting agencies in most target countries of medical brain drain.

While all these measures reduce the risk of brain, it can never be completely ruled out in the era of globalization and mobility.

BCH's framework agreements with institutions of the other participating health centers will be established in such a way that it will be possible to pass on equipment to other institutions should it remain permanently unused, for example due to the departure of the surgeons.

8. Sustainability (economic, ecological, social, structural)

Summary

Economical: The development of ear medicine services takes place within the framework of existing facilities. The selection criteria for the hospitals involved were the basic prerequisites for sustainable and permanent operation, to which the respective local operators of the hospitals committed themselves.

Ecological sustainability will be strengthened by installing solar panels on the existing BCH ENT tract and on the existing outreach vehicle in order to reduce dependence on fossil fuels and diesel generators. When travelling, the long distance bus network is used to the greatest possible extent and otherwise land transport is preferred to domestic flights.

Social: In general, BCH and in particular the ENT ward enjoy a high degree of recognition within the health care system, the government, the university and education system, organised civil society and the general population. Medical services and training are considered exemplary. The focus on people who live in poverty is strengthened.

Structural: Training and strengthening of local capacities are structurally firmly anchored in the mission and work of BCH and are not "set up" for the purpose of the project. The project is firmly integrated into the Zambian government's efforts to establish and expand ENT services.

In general, BCH and in particular the ENT ward enjoy a high degree of recognition within the health care system, government, university and education systems, organised civil society and the general population. The medical services and training provided by BCH are considered exemplary in Zambia. Training and strengthening of local capacities are structurally firmly anchored in the mission and work of BCH and are not "set up" for the purpose of the project. It is in line with the needs of the Zambian Government's NENTHSP and is carried out in close coordination with the Ministry of Health.

Although BCH was founded by a Christian background and many of its decision makers and employees are Christian motivated, the services are provided according to the principle of equal treatment with a focus on poorer people. The non-denominational neutral character is also reflected in the continuing education of hospital chaplains, who are taught a human rights-based inclusive approach to the issues of disability.

Ear medical services are being built up within the framework of existing facilities. So there are no plans to build completely new hospitals or clinics. The majority of the running costs of this project are due to qualification activities for other health centres and specialists as well as increased outreach activities to reduce waiting lists until further ear medical services function fully, and intensive monitoring activities during the project duration. They do not lead to a high level of follow-up costs.

BCH strengthens ecological sustainability through compliance with internal processes for the reduction and disposal of biohazardous waste. This project will endow the under-served ENT sector in Zambia with adequate services for patients in the Southern Province and Lusaka Province. In addition, the national ENT plan is complemented by the development of a curriculum to ensure sustainability and the possibility of continuous growth at national level.

9. Budget

On the basis of the financing plan, the total costs for the implementation of the project amount to EUR 909.400.

The present agreement is based on the following **Financing Plan** for the project period of 3 September 2018 – 31 December 2021. Admin costs for CBM Germany have already been subtracted.

Cost Pos.	Cost Plan	2018	2019	2020	2021	Total
	Currency	EUR	EUR	EUR	EUR	EUR
1	Total Expenditures	420.510,00	211.230,00	158.840,00	118.820,00	909.400,00
1	INVESTMENT COSTS	355.820,00	25.590,00	6.000,00	3.000,00	390.410,00
1.1	Medical Equipment and Consumables	263.740,00	21.000,00	6.000,00	3.000,00	293.740,00
1.2	Furniture and Learning Equipment	2.570,00	4.590,00	0,00	0,00	7.160,00
1.3	Project Vehicle	36.000,00	0,00	0,00	0,00	36.000,00
1.4	Construction	53.510,00	0,00	0,00	0,00	53.510,00
2	RUNNING COSTS	41.690,00	126.040,00	98.740,00	44.470,00	310.940,00
2.1	Implementation ENT Plan	5.920,00	22.020,00	1.110,00	1.110,00	30.160,00
2.2	Trainings	0,00	65.680,00	67.710,00	19.620,00	153.010,00
2.3	Project Monitoring (local)	7.730,00	10.280,00	9.660,00	10.780,00	38.450,00
2.4	Outreaches	24.820,00	23.400,00	15.600,00	7.800,00	71.620,00
2.5	Audit and Bank Costs	3.220,00	4.660,00	4.660,00	5.160,00	17.700,00
3	PERSONNEL	17.200,00	57.600,00	41.100,00	27.600,00	143.500,00
3.1	Project Management	7.200,00	21.600,00	21.600,00	21.600,00	72.000,00
3.2	Medical Personnel	10.000,00	36.000,00	19.500,00	6.000,00	71.500,00
4	PROJECT APPRAISAL VISIT	800,00	2.000,00	2.000,00	2.000,00	6.800,00
5	EVALUATION	5.000,00	0,00	11.000,00	11.000,00	27.000,00
	Subtotal: (Project Expenses)	420.510,00	211.230,00	158.840,00	88.070,00	878.650,00
1.6	Reserve (CBM approval!)	0,00	0,00	0,00	30.750,00	30.750,00
	Subtotal Project Expenses	420.510,00	211.230,00	158.840,00	118.820,00	909.400,00
	Total	420.510,00	211.230,00	158.840,00	118.820,00	909.400,00

The following budget lines are reserved for CBM

- Budget line 4 (Project Appraisal Visit): reserved for CBM Germany's annual project visits.
- Budget line 5 (Evaluation): Funds stay at CBM Germany and will only be released to Partner after approval by BMZ.
- Budget line 6 (Reserve): Depending on the expenditure situation, part of this budget line may be made available to the project by CBM. Prior consultation required.

Resulting from the above, the partner shall receive EUR 844.850,00 for the implementation of this project (Budget lines 1, 2, 3):

	2018	2019	2020	2021	TOTAL
Budget for Partner (EUR):	414.710,00	209.230,00	145.840,00	75.070,00	844.850,00

This finance plan shall be regarded as binding by both sides. Beit Cure Hospital may exceed individual budget items in the Financing Plan by up to 30% to the debit of other items, if the attainment of the project goal makes this necessary. Increases in excess thereof and all changes in the quantities specified in the narrative proposal must have the prior approval of CBM.