POLITECNICO
MILANO 1863

SCUOLA DI INGEGNERIA INDUSTRIALE
E DELL'INFORMAZIONE

MVIMWA REHABILITATION CENTRE PROJECT

DEVELOPMENT OF A HEALTHCARE PROJECT IN ONLUS: HOW TO DESIGN A REHABILITATION CENTRE IN AFRICA

Master thesis in Management Engineering

Politecnico di Milano

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Academic Year: 2020-2021

Abstract

The following thesis aims to illustrate the dynamics of work within an Italian ONLUS operating in Africa.

Specifically, the process through which the project of "Mvimwa Rehabilitation Centre" was developed, a rehabilitation center for the disabled people, which will be built in Tanzania, next to the Mvimwa Health Centre and the Mvimwa Abbey, will be described.

Golfini Rossi ONLUS is the association through which it was possible to carry out this project. It is a non-profit organization, which pursues the aims of social solidarity in support of the realities that are in conditions of poverty and fragility, in particular in favor of African territories, through volunteering and international cooperation. The areas of focus of the ONLUS are health, nutrition, training, education and economic development.

Golfini Rossi ONLUS acts on the territory of Tanzania in close collaboration with the African Benedictine of Mvimwa Abbey. The association has developed projects to alleviate the conditions of misery in which more than 23,000 inhabitants, living in the 10 neighboring rural villages, lie. The projects offer health and educational services, and encourage local economic development. In the territory of the abbey there was a dispensary that through the aid of the ONLUS is now the ""Mvimwa Health Centre".

The thesis shows all the research necessary for the creation of the project that have been carried out. In particular, great space has been given to international cooperation, to agencies operating in this sector in Africa and to their healthcare projects.

A detailed report is present with the characteristics of the country of Tanzania. A specific zoom was conducted on the organization of the health system and the most present diseases, as well as the frequent causes of death.

Various parallel projects of Golfini Rossi ONLUS are introducted and briefly explained in the thesis, but only in the specific part in which they are useful for the overall definition of the central project on which I worked and on which this thesis is focused: Mvimwa Rehabilitation Centre Project".

Abstract in italiano

La seguente tesi ha lo scopo di illustrare le dinamiche del lavoro all'interno di una ONLUS italiana che opera in Africa.

Nello specifico verrà descritto il processo attraverso il quale è stato sviluppato il progetto del "Mvimwa Rehabilitation Centre", un centro di riabilitazione per disabili, che verrà costruito in Tanzania, accanto al Mvimwa Health Centre e alla Mvimwa Abbey.

Golfini Rossi ONLUS è l'associazione attraverso la quale è stato possibile realizzare questo progetto. È un ente senza scopo di lucro, che persegue finalità di solidarietà sociale a sostegno delle realtà che versano in condizioni di povertà e fragilità, in particolare a favore dei territori africani, attraverso il volontariato e la cooperazione internazionale. Gli ambiti di focalizzazione della ONLUS sono quello sanitario, della nutrizione, della formazione e istruzione e dello sviluppo economico.

Golfini Rossi ONLUS Agisce sul territorio della Tanzania in stretta collaborazione con l'African Benedictine of Mvimwa Abbey. L'associazione ha sviluppato progetti per alleviare le condizioni di miseria in cui versano oltre 23.000 abitanti che vivono nei 10 villaggi rurali limitrofi, offrendo servizi sanitari e scolastici, ed incoraggiando lo sviluppo economico locale. Nel territorio di pertinenza dell'abbazia vi era un dispensario che attraverso gli aiuti della ONLUS è ora il ""Mvimwa Health Centre".

Nella tesi vengono riportate tutte le ricerche eseguite necessarie per la creazione del progetto. In particolare grosso spazio è stato dato alla cooperazione internazionale, alle agenzie operanti in questo settore in Africa e ai loro progetti di ambito sanitario.

Un report dettagliato è presente con le caratteristiche del paese della Tanzania. Uno zoom specifico è stato condotto sull'organizzazione del sistema sanitario e delle malattie più presenti, nonché le più frequenti cause di morte.

Vari progetti paralleli di Golfini Rossi ONLUS vengono presentati e brevemente spiegati nella tesi, ma solo nella specifica parte in cui risultano utili alla definizione complessiva del progetto centrale sul quale io mi sono concentrato e sul quale verte questa tesi: "Mvimwa Rehabilitation Centre Project"

Ai miei genitori, Grazia e Mirko,
senza i quali nulla di questo sarebbe stato possibile.

"Un viaggio non inizia nel momento in cui partiamo né finisce nel momento in cui raggiungiamo la meta. In realtà comincia molto prima e non finisce mai, dato che il nastro dei ricordi continua a scorrerci dentro anche dopo che ci siamo fermati. È il virus del viaggio, malattia sostanzialmente incurabile."

Ryszard Kapuscinski

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1 INTRODUCTION

"A journey, after all, neither begins in the instant we set out, nor ends when we have reached our door step once again. It starts much earlier and is really never over, because the film of memory continues running on inside of us long after we have come to a physical standstill. Indeed, there exists something like a contagion of travel, and the disease is essentially incurable." This quotes of Polish writer Ryszard Kapuscinski (from "Travel with Herodotus", 2004) explain perfectly how a simple journey with your family can turn into something bigger and important, that can change not only your life but the lives of hundreds of people.

The journey is never really over, the experiences you go through in the days away keeps running in your memory for long time after you come back from it. It's difficult to explain them to others and it's also even harder to try to evoke the same feeling in them. You can try but, in the end, you almost always resign yourself thinking "You should be there to understand". This is what more than the others passionate me in my journeys.

I know I've always had a great luck on this subject, my parents love to travel at least as much as I do, and since well before I had a clear memory of it they took me around the world with them and with my twin brother.

Despite being very young, thanks to them I have traveled to all continents, passing from the Arctic Circle, in Alaska and Iceland, to the equator, in Ecuador and Indonesia, to the southernmost point of Africa in South Africa; from the richest skyscrapers in Dubai to the poorest villages in Madagascar and Namibia.

Wherever I have been, however, I have always been enthstatic by the different characteristics that each nation and each people has shown me. But on one aspect in particular, perhaps secondary to the natural or artificial beauties that each country has to offer, I have always been focused a lot on: trying to understand the culture of the place, putting myself into their shoes and habits, both figuratively and literally, understanding why they lived or behaved in a certain way, finding out what their customs and beliefs were, even try to understand how they perceived me. It may seem like something related only to backward cultures or completely different from ours, but, to a small extent, even within the same nation these facets can be quite different.

It is precisely an experience of these that started-up in me the idea which is the basis of this project and, therefore, also of my thesis.

1.1 *TANZANIA, GOLFINI ROSSI ONLUS AND MTOTO*

I was in Tanzania with my family, in August 2018. In the first months of that year we came in contact with the reality of Golfini Rossi ONLUS, a very young no profit association, founded in 2014, which worked closely with the monastery of Benedictine Abbey of Mvimwa, in the Region of Rukwa, one of the Tanzanian poorest region. In planning the trip we decided to dedicate a week of our holiday to help the ONLUS, checking the situation of the projects already started there and doing on-site research for some of these, in particular my task was to build a business case on the commissioning of an industrial dryer that had been donated to the association.

During the journey while we were guests of another Italian mission in Tanzania, was told to me the story of Mtoto, a child who was living there with his mother. He was about 5 years old when, playing with friends, he fell from a tree and became paraplegic.

There is sad custom in such poor area for disabled children. When a father realizes that his son, due to any type of disability, will not be able to do any work, and therefore in the family balance it turns out to be only one more mouth to feed, he has to abandon him in the forest to his fateful fate. Although it is a barbaric and unforgivable practice, we must realize how much this harrowing choice is dictated by the absence of alternatives and the instinct for survival: a family cannot afford to feed and care for him for all his life, so rather than starving other members of the family group, they are forced to sacrifice him.

Well this risked being the sad end reserved for Mtoto, after his injuries. Luckily his mother, in order to save him, "kidnapped" him in the night and they escaped together finding refuge and help in the mission.

I went the next day to the house where Mtoto and his mother live, to get to know this child and try to bring him some joy with some gifts. When I entered I was amazed by the happiness he showed in seeing us. He was lying on the bed and could only move his head and the upper part of the trunk, but he smiled, he looked very happy. It really shocked me how less sadness and discouragement were in him. Cynically I thought that perhaps he did not realize the situation.

Talking to the abbot I discovered that as much as he had managed to escape momentarily to death his destiny was not so bright. There was no way to help him resume a life similar to the one before the accident and, even worse, he began to present bedsores that his mother and abbot tried to treat as they could but, given the limited availability of medicines and therapies, they risked getting worse.

Returning to the quote by Ryszard Kapuscinski the unmotivated happiness I perceived from him continues running inside me a long after I left that place. I felt like I had to do something about it.

A couple of years passed but then, when the moment of choosing the courses to follow for the master's degree had come, this "film of memory" that had been running inside me from then, gave me inspiration. I delivered a personalized study plan in which I collected all the teachings of healthcare system management to specialize me on the subject.

Then I contacted Tiziana, president of Golfini Rossi ONLUS, which had already started a macro-project to improve the dispensary in Mvimwa and make it a valid health center, proposing her to design and build together a rehabilitation center for disabled children, to put alongside the monastery and the new health center, as my thesis project.

The luck assisted me because I found that there were already a colleague student of management engineering at Politecnico di Milano, Alessandra Soldati, and her advisor working with Golfini Rossi ONLUS for her thesis.

In September 2020 I formally joined the team and I began to work with them on the analysis and drafting of the project for the realization of the Rehabilitation Centre of Mvimwa.

1.2 *CONTENTS OF THE THESIS*

In the following chapters the are reported various information extrapolated during the different working phases:

- Research on the world of NGOs and development cooperation
- Research on the Italian cooperation in Africa, the actors and their healthcare projects
- The characteristics of Tanzania and his healthcare system, with main diseases and causes of death
- The structure of Golfini Rossi ONLUS and it’s work with Mvimwa Abbey
- The organization of mine work in Golfini Rossi ONLUS and the steps of the developed work
- The situation of the final project
- Expected results and future developments

References are reported all together at the end of the thesis. This because it is really discursive and descriptive, the data and the information reported are usually recovered from

different sources and rearranged. Precise data and short citations by the way are commented with their source in the text.

2 INTERNATIONAL DEVELOPMENT COOPERATION AND NGOS

Since the early 1980s the field of international relations has largely been dominated by debates about the concept of international cooperation. Risen in importance after the Second World War, it is today one of the main tools used by countries to provide different kinds of international relations. (Rich, Potter & Bobenrieth, 1997)

The inception of international cooperation generally refers to the introduction of the Marshall Plan in 1947 by US foreign Minister George Marshall. The plan, also called "European Recovery Plan" had the aim to economically rebuild Europe after the Second World War and create the United Nation Organization and the Bretton Woods Institutions (the World Bank and the International Monetary Fund). (Boon, 2012)

The reasons for the introduction of the Marshall Plan were both for national security and commercial considerations. On the one hand, the USA's national interests in stopping the expansion of communism in Easter Europe. On the other hand, the benefits gained from the reconstruction of a free Europe for American business. (Degnbol-Martinussen & Engberg-Pedersen, 2003)

International cooperation is a broadly concept that can be described as "the global teamwork by the countries of the world towards joint action in areas of mutual interest and sustainable development". (Boon, 2012)

Today, the term is used to generally describe the flow of long-term financial resources between developed and developing countries. Since there are fields of international cooperation that are not only related to development, from this moment the focus will be only on development cooperation.

2.1 *DEVELOPMENT COOPERATION*

Development cooperation is defined as "the activity that aims explicitly to support national or international development priorities, is not driven by profit, discriminates in favour of developing countries, and is based on cooperative relationships that seek to enhance developing country ownership." (Alonso & Glennie, 1989)

To define an activity of development cooperation four criteria needs to be met:

1. "*Aims explicitly to support national or international development priorities",* related to the willingness of reaching common agreed goals, mainly the Sustainable Development Goals and other international or regional development agreements.
2. *"Is not driven by profit",* since not-for-profit organizations accepts to work on those fields in which the traditional organizations fails, accepting a lower profit.
3. *"Discriminates in favour of developing countries"* meaning the aim to create new opportunity for those states. A list of developing countries in updated every three years, based on the indicator "per capita income", which distinguishes between poorest and poor countries and other two groups of middle-income countries. (Klingebiel, 2014)
4. *"Is based on cooperative relationships that seek to enhance developing country ownership",* so based on non-hierarchical relationships between worldwide actors that pursue to complement resources and capacities.

Most of the assistance provided by development cooperation actors goes to Africa, especially the Sub-Saharan part, which represents the 37,9% of the activities in 2010.

2.2 *OBJECTIVES OF DEVELOPMENT COOPERATION*

According to the Organization for Economic Co-operation and Development (OECD), the objectives of development cooperation, and more in general of international cooperation, regard the economic, social, political and environmental side. (Boon, 2012)

They can be classified in four main groups:

1. "Promotion of economic well-being": The 1995 Copenhagen Declaration and Program of Action set forth the goal of eradicating poverty in the world, through decisive national actions and international cooperation "as an ethical, social, political, and economic imperative of humankind".

2. “Integration of Developing Countries into the World Economy”: Developing countries faces severe challenges in position their self in the international market. The difficulties in selling their product makes them marginalized and not taken into consideration during decision-making at international forums.
3. “Ensuring social development”: The goal of international cooperation is not only related to the economic field, but also the social one. It aims to promote universal primary education in all countries; gender equality and the empowerment of women by eliminating gender disparity in primary and secondary education; the reduction of mortality rates for infants and children under the age of five.
4. “Environmental Regeneration and Sustainable Development”: The current trends in the loss of environmental resources, such as forests, fisheries, fresh water, climate, soils, biodiversity, stratospheric ozone, the accumulation of hazardous substances, desertification, and other major negative impacts, have to be the hearth of some programs of cooperation.

2.2.1 Interests Of Development Cooperation

Carrying out an international cooperation activity can arise from various reasons and interests, especially for who will provide the necessary resources for the development. In particular, the main reasons can be articulated in two fields: moral and humanitarian on the one side and political and economic on the other side.

Concerning the first, the idea that “a person who is well endowed and well situated has a definite obligation to help people who are poor and have poor access to resources” explains the reasons behind the human interest of development cooperation (Degnbol-Martinussen & Engberg-Pedersen, 2003). As for individuals, the same concept has to be applied between rich and poor countries. Multilateral cooperation through the United Nation has from the start been rooted in moral and global security motives. To them, also activities carried out by NGOs aid can be associated to mainly moral interests.

Nevertheless, it has to be considered that in the international market the purely moral and humanitarian motives are rare and, often, givers are driven also by a self-interest. In this perspective, political and economic interests play an important role in the field of international cooperation, which represent a tactic source for choosing beneficiary countries. Since the beginning, the former colonials have concentrated their activities to maintain privilege access to resources and markets in the decolonized areas.

Today, many firms benefit from establishing international relations in order to take advantage of the resources provided by the host country. (Degnbol-Martinussen & Engberg-Pedersen, 2003)

The motives and interests defined focus on the perspective of the country that provide the assistance. For the point of view of the emerging country, the interests are quite clear, but the importance of development cooperation varies from country to country. The dependence on such activities is linked to the country's economic strength: the lower this is, the more the dependence on aid will be high.

2.2.2 Actors Of Development Cooperation

International development cooperation involves a very broad number of actors. Generally speaking, they can be distinguished between Governmental donors and non-governmental or private donors.

The first group include three different clusters of actors. The so-called traditional donors, which have joined to form the OECD's Development Assistance Committee (DAC), is composed by 24 members, 23 states and the Commission of the European Union, the World Bank, the International Monetary Fund (IMF) and the United Nations Development Programme (UNDP). Traditional donors provide 70 to 90 per cent of global development cooperation funds. Secondly, the Arab donors are active in the development cooperation since the 1970s, which includes Kuwait, Saudi Arabia and the United Arab Emirates. Furthermore, Arab donors have made large amounts of development investment by comparison with their economic strength. The last group is represented by the so-called "emerging donors", among them China, India, Brazil, Chile, Venezuela, Mexico and South Africa. Emerging donors usually stress the mutual benefits of cooperation, focusing mainly on infrastructure projects. (Klingebiel, 2014)

Concerning non-governmental and private organizations, generally part of the "civil society organizations" group, include both the third-party organization and private foundation, mainly pure philanthropic donors. Among them, many successful projects have been undertaken by NGOs, which dedicate themselves and their resources to development goals and finance their activities with private donations or from members' contributions. (Gibson, Andersson, Ostrom, & Shivakumar, 2005). NGOs will be better described in the sequent chapter.

As important as the actors involved, is the connection between them, since it affects the sustainability of the projects developed.

The International Development Cooperation Octangle, or "Octangles" demonstrates the realistic and complex tangle of relationships involved in the international cooperation. *(figure 1)* (Gibson et al., 2005)

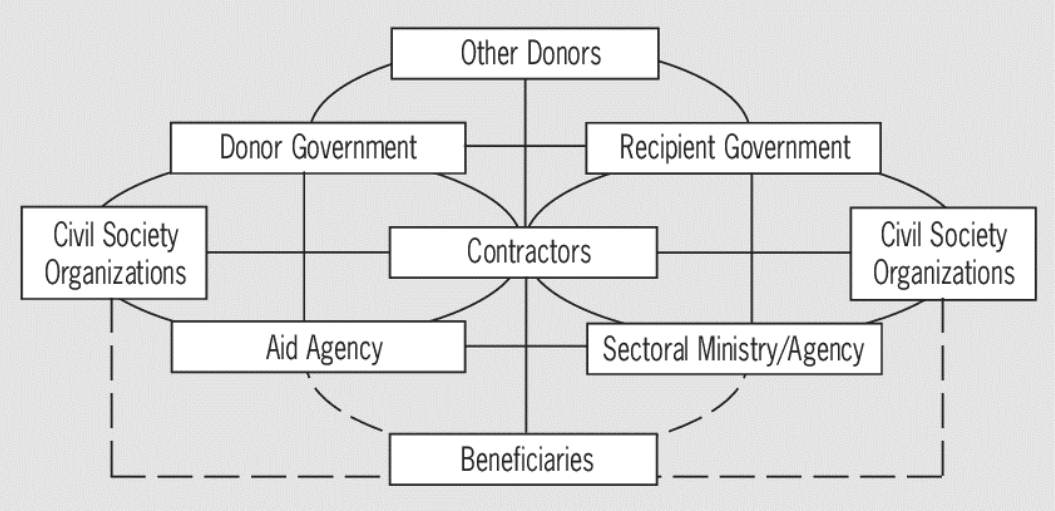

Figure 1 - International Development Cooperation Octangle

2.3 *THE WORLD OF NGOS*

NGO, acronym for non-governmental organization, are entity of a private nature, independent from government. They are typically non-profit organizations and many of them are active in humanitarianism and social sciences, created in accordance with the internal rights of a State.

They are characterized by being independent of both states and international organizations, although they can collaborate with institutions at European and international level.

In the international arena, the first mention of NGOs took place in Article 71 of the Charter of the United Nations which states that:

The Economic and Social Council may make suitable arrangements for consultation with non-governmental organizations which are concerned with matters within its competence. Such arrangements may be made with international organizations and, where appropriate, with national organizations after consultation with the Member of the United Nations concerned.

This article enshrined and legitimized the consultative function of non-governmental organizations. The UN is therefore the first international organization to provide in its Charter stable forms of consultation, with non-governmental organizations.

The consultative status of NGOs was also confirmed in Resolution No. 30F/1951, adopted by the Committee of Ministers, executive body of the Council of Europe which recognized the role of "international utility" of non-governmental organizations and subsequently in Resolution no. 35/1972

Most NGOs are run by volunteers, such as small ones and local non-profit organizations.

On the contrary, large international NGOs use paid staff to carry out their activities, as they need specific skills.

There are different models of NGOs all over the world:

- Volunteer NGOs;
- NGOs that organize cooperation projects in emergency situations by sending specialized personnel;
- NGOs that participate in and support projects in developing countries by sending volunteers to the territory;
- NGOs specialized in studies, research and training of a developed country personnel to developing countries personnel;
- NGOs operating in developed countries carrying out information activities on development and international cooperation issues.

Currently the most famous non-governmental organizations deal with environmental issues, protection of minorities or human rights but there are also NGOs that deal with philosophical or political themes.

Among the best known non-governmental organizations we find for example Save The Children (1919), Doctors Without Borders (1971) which operates in the field of humanitarian aid, WWF, in the environmental field, Amnesty International (1961) active in the support of human rights.

2.3.1 Characteristics of NGOs

Non-governmental organizations are made up from individuals, groups, or associations belonging to different States who, through the creation on a voluntary basis of an institutionalized structure, act at international level for the pursuit of a non-profit-making goal.

The carrying out of an associative activity, with the participation of physical or legal persons having different nationalities or registered office in different States, who take the initiative for the establishment of a stable structure, causes NGOs to assume an international focus.

While international intergovernmental organizations, including the United Nations, are constituted, through the conclusion of an agreement, by States, with universal purposes, NGOs operate, in almost all cases, in a specific field. They have a structure, with a head office in a given State, which, through various divisions, carries out an activity in the interest of subjects or associations located in various States.

If the creation of an international organization takes place through an international agreement, NGOs are constituted in the forms proper to the domestic law of a State chosen by the founders. Following a clear proliferation of both these types of societies also the number of interaction between them is increased in numbers in recent years.

International law lacks a universal act identifying the characteristics of NGOs. Although it is possible to trace elements which, either through the intervention of legal writers or through the examination of certain international acts which are not endowed but of a universal binding nature, make it possible to clarify the common elements for the purpose of classifying an association between NGOs. In particular:

- NGOs must have a Statute, adopted by means of an act or an administrative contract governed by national law.
- They must have a stable structure and a permanent body, a common aim, achieved through transnational activity, shared by individuals or associations located in different States.
- Furthermore, they must not pursue any direct profit-making aim, not by targeting to distribute a profit among the members, but by using the revenue (e.g. the proceeds of real estate assets) for the pursuit of the NGO's objective.

NGOs can be classified into simple organizations (formed only by individuals), composed (members made up of groups of individuals) or mixed (individuals and associations). In most cases they are subject to the legislation of a State, generally specified in the founding act or in the Statute.

2.4 *ITALIAN COOPERATION IN AFRICA*

With a population of 1.2 billion inhabitants and a continuous demographic growth, Africa has long been an absolute priority of Italian foreign policy. Its relationship with the Continent is based on an equal partnership, oriented to share development and to face together the multiple global challenges. (Ministero degli A.E. e della Cooperazione Internazionale, n.d.).

The recent transformations of the Country opened up important opportunities for strategic, historical, geographical, economic and cultural nature reasons. It is proper to underline how this relationship goes beyond political choices but is based on multiple initiatives of the Italian Development Cooperation.

Italy's foreign, trade and cooperation policy in Africa has been fluctuating over the 20th century, with highs of generous development cooperation during the 80's, to lows due to the unsuccessful international humanitarian intervention in Somalia, to the drop in aid to development which fall to minimum levels compared to all advanced economies. In 2013, with the launch of the "Italy-Africa Initiative", the relationship was reborn, also as a support to those Italian companies that were looking with interest at the growing potential of emerging African markets, with respect to the drops induced by the economic crisis on the national one. (International Affairs Department, 2021)

Among the different and many goals of the Italian Cooperation, the development of the country's health system represents one of the main topics, especially in the Sub-Saharan Africa's countries. In this perspective, the Italian Agency for Development Cooperation (AICS) has consolidated and enhanced its already significant commitment to achieving health and well-being for all populations, in line with the Sustainable Development Goal n. 3 United Nations' Agenda 2030. The Italian strategy is based on universal access to services, on the strengthening of health services, from primary centers to national reference structures, on the control of infectious and chronic diseases, on the promotion of early child development and nutrition. (Guallichico, 2020).

2.5 *HEALTHCARE PROJECTS IN AFRICA*

An analysis of different projects of international cooperation in Africa in the healthcare sector has been carried out. First of all, from web research have been identified the main NGOs operating in the country, with a focus on projects in the health sector. To them, also foundations of private and public companies, having an interest in working in developing countries, were analysed.

Secondly, additional actors were identified from a list of all the Non-governmental Organizations active in Tanzania, provided the Italian Embassy in Dar Es Salaam.

The organizations analysed are described below. In addition, will be reported for each actor the strategy in undertaking international cooperation projects in Africa. In this paragraph there are the actors involved in health care projects in Africa (Eni Foundation, Ospedale Pediatrico Bambin Gesù, COPE, CCM, Africa Mission, CUAMM – medici con l'Africa).

In paragraph 2.5 the focus zooms on those who provided a project related to rehabilitation aspects and the creation of rehabilitation centres (Comunità Solidali nel Mondo and OVCI la Nostra Famiglia). In addition the most relevant projects for the perspective of this thesis and useful for the development of the healthcare project of Golfini Rossi Onlus in Tanzania are highlighted in table where the place, the period, a brief description, the results obtained, and the financiers and donors involved are reported.

2.5.1 ENI Foundation

With its foundation, Eni started to work in Africa in 1954.

For Eni, the main goal is to achieve complete carbon neutrality by 2050 and African countries have the potential to become large producer of green hydrogen, which could be transported in Europe via existing pipelines.

In this perspective, the company's mission is aligned with the UN's Agenda 2030 Sustainable Development Goals, especially goal n.7 and goal n.13, respectively "Ensure access to affordable, reliable, sustainable and modern energy" and "Take urgent action to combat climate change and its impacts".

Through the development of international cooperation programs, Eni is able to intensify agreements with the African continent, so as to benefit from both sides of this relationship.

The Eni Foundation was created in late 2006 and operates in six countries across two continents: Ghana, Mozambique, Angola, the Republic of Congo, Indonesia and Myanmar.

The challenge being tackled by the Eni Foundation particularly concerns developing countries, where: the percentage of children and adolescents is mostly high. Children are more vulnerable due to difficult living conditions, they often do not have access to healthcare, education, proper nutrition or adequate hygiene and sanitary conditions, and are subject to violence and abuse.

- Ghana: Healthcare Mother and Children Project. The Eni Foundation implemented a project to support the work of local health authorities in the three coastal districts of Jomoro, Ellembele and Ahanta West in western Ghana. Approximately 300,000 inhabitants live here, predominantly located in rural and isolated areas, of which more than 80,000 are children aged 10 or under and 70,000 are women of childbearing age. The aim was to improve services for mothers and children at both district and regional level. The project lasted from November 2012 to May 2017, and cost approximately €8 million.
- Mozambique: Natal Care Project. The Eni Foundation worked to improve the healthcare services on offer in Palma, one of the 17 districts of the city of Pemba in the Cabo Delgado region. With 60,000 inhabitants and an economy based on fishing. The main causes of infant mortality in the city are malaria, diarrhoea, pneumonia, malnutrition and HIV. The direct beneficiaries of this initiative were pregnant women and newborn children. The project lasted five years, from 2013 to 2017, and cost € 5 million and 230 thousand.
- Angola: The Kilamba Kiaxi Project. The population of the municipality of Kilamba Kiaxi in the city of Luanda is approaching 2 million, with approximately 240,000 children aged five and under. To help improve the health of mothers and children and reduce the rates of preventable illnesses and conditions caused by malnutrition, the Eni Foundation strengthened the healthcare network and improved access to services. The project lasted three years, from 2009 to 2012, and cost approximately €6.2 million
- The Republic of Congo
    - Salissa Mwana project: Kouilou, Niari and Cuvette are three extremely isolated and difficult to access rural regions of the Republic of Congo. Through its Salissa Mwana project, the Eni Foundation sought to improve healthcare, and particularly children's healthcare, in these areas, for example through vaccination programmes for the most common conditions. By the end of the programme, an impressive 30 health centres in the area had been stocked with equipment. The project reinforced basic

healthcare services (such as treatment, immunisation, preventive medicine and prenatal and postnatal consultation), trained healthcare professionals and raised awareness of prevention among the local population. The project lasted four years, from 2007 to 2012, and cost approximately €10 million.

- Kento Mwana project: Without preventive measures in place, the transmission rate of the HIV virus from an HIV-positive mother to her child can exceed 30 per cent. Through the Kento Mwana project, the Eni Foundation aimed to use preventive methods to reduce that to 2-3 per cent: from offering medical advice to pregnant Congolese women to providing access to free, voluntary screening. The project covered the Kouilou, Niari and Cuvette regions, which were also involved in the Salissa Mwana project. The cornerstone of the initiative was an advanced laboratory dedicated to the diagnosis of HIV infection established by the University of Genoa at the Hôpital Régional des Armées di Pointe Noire, with Eni's support, during the pilot phase of the programme. The project lasted four years, from 2009 to 2012, and cost €3,2 million.

2.5.2 Ospedale Pediatrico Bambino Gesù

On behalf of the Salviati dukes, in 1869 born in Rome "The Bambino Gesù Paediatric" Hospital, as the first true Italian paediatric hospital.

Following the structure of the Hôpital des Enfants Malades in Paris, in 1924 it was donated to the Holy See, becoming in effect the Pope's Hospital. Originally named "Caro bambino", was then renamed by Pope John Paul II as "Bambino Gesù".

The Hospital has always been characterized by its commitment on an international level. In fact, since the '80s it has promoted many cooperation projects in 12 countries in the world, Jordan, Cambodia, Tanzania, Central African Republic, Ethiopia, Libya, El Salvador, Paraguay, Ecuador, Haiti, Russia, South Korea. These activities concern the support of international research and care agreements, the reception of the neediest children suffering from serious illnesses and training session in the paediatric field.

The purpose is not only to treat children on site but is above all to transfer scientific and clinical skills, through the training of doctors and local health personnel, so that they will be able to provide independent care and assistance.

The international programs are based on specific contracts with the local government or the health institution, which include both on-the-job training sessions carried out by Italian hospital operators and residential training periods in Rome for local staff.

Only in 2019 the hospital was able to transfer knowledge in more than 20 paediatric specialties. The choice of which are the best skills to transfer depends on the specific Country, determined in particular after an analysis of local needs.

The results obtained by the Bambino Gesù Paediatric Hospital are therefore guided by a sense of responsibility, which can be summarized in the words of Pope Francis: "We must never forget that the value of the successes achieved is measured by the ability to improve the quality of care and assistance. Children, young people and their families are and must remain at the centre of every activity of every process and of every initiative that is undertaken. "

In Itigi city in the Singida Region of Tanzania from 2012 they activated a collaboration with St. Gaspar hospital. The initial project aimed to co-manages the Department of Paediatrics of the Hospital (about 2500 square meters). The second project aims to transfer to medical personnel of the African hospital, knowledge and skills on specific therapeutic, diagnostic and assistance paths in the field of plastic and maxillofacial surgery. Assistance also consist in provide second opinion in radiology and for the reading of CT scans. The goal is to train a doctor from St. Gaspar Hospital who wants to stay in Itigi through a period of residential training at the Bambino Gesù Paediatric Hospital and two on-the-job training missions a year.

2.5.3 COPE - Cooperazione Paesi Emergenti

Cooperazione Paesi Emergenti, COPE., is an international non-profit and voluntary organization founded in Catania in 1983. The main objective is to create models of more just and supportive relations between the North and the South of the world.

It is currently present in Africa with 3 offices in Tanzania (Dar es Salaam, Nyololo and Nambehe), 1 in Madagascar (Ambanja), 1 in Guinea Bissau (Cacheu region), 1 in Tunisia (Tunis) and 1 in Senegal (Dakar).

One the one hand, at national level, the NGO deals with fundraising, information, awareness raising and training activities, in particular on Global Citizenship Education at national, regional and local level in collaboration with other local associations. In the international field, on the other hand, through cooperation, projects are carried out in the

health, agricultural, educational and social fields, with the aim of building economic models that reduce inequalities in the distribution of global wealth and overcome barriers and prejudices at the origin of conflicts and discrimination.

The organizational structure of the projects follows a specific philosophy:

- The implementation of interventions that can have a direct impact on the living conditions of the communities in which one operates.
- The training of local staff to ensure an autonomous and sustainable management of interventions over time.
- The use of appropriate technologies, that is, to be easily managed by local technicians without triggering further dependence mechanisms from abroad.

The vision of the Organization is based on the "desire to build a world in which every person can enjoy fundamental rights including the right to food, health, education and a dignified life, promoting the self-development capacity of each people."

In Tanzania they developed 2 main project:

- Sisi Ni Kesho Project, the meaning in Swahili is “We are the future”, actuated from 2004 to 2007, in Nyololo in Iringa region. The project welcomed orphaned children of one or both parents (usually because of HIV), aged between 0 and 5, providing them with the care and assistance necessary for their growth and subsequent reintegration into their family of origin or adoptive families. The main activities regarded care and assistance of hosted new-borns, training of the 8 nurses (mamà) on the subject of infant health, and monitoring of children during reintegration into families of origin or adoptive.
- Kituo Cha Afya Project, developed together with Sisi Ni Kesho. The project consisted in the realization of a hospital in an area with very low health coverage (Nyololo in Iringa). Internally to the hospital, the government program dedicated to maternal and child health has been implemented, which provides for vaccinations and check-ups for pregnant women and for children under the age of 5, and the program of mobile clinics in neighboring villages where it deals with the control of pregnant women, immunization, child growth and HIV / AIDS counseling. The POLE POLE rehabilitation center inside the hospital, realized thanks to the co-funding of Filo Diretto Onlus is addressed to children’s disabilities and includes monitoring, treatment of minor disabilities and transport in specialized centers for the most severe disabilities.

2.5.4 C. C. M. - Comitato Collaborazione Medica

“Comitato Collaborazione Medica”, C.C.M. is a Non-Governmental Organization founded in Turin in 1968 by a group of doctors and medical students. In January 2021, was completed the merger between C.C.M. and Amref Health Africa, a non-profit organization founded in 1957. In particular, both associations are aimed at development cooperation activities in Africa, in order to promote and guarantee the right to health for all.

CCM, engaged in the African continent for over fifty years, it carried out programs not only in the health sector, but also in education for world citizenship, health training courses, activities to promote fair policies, health protection actions and inclusion of vulnerable groups. It brings skills, care and assistance to the most isolated human contexts both geographically and socially. Amref Health Africa, instead, mainly focused on the health plan, has an international network active in 35 African countries with over 160 health promotion projects.

The aim of the new organization is to increase and make sustainable access to health for African communities, through the training of health personnel, investments in public health and a wider offer of innovative services.

The projects later considered has been implemented before the merger of the two associations, which is why the history of the Organization before 2021 will be considered.

Currently present in Burundi, Ethiopia, Kenya, Somalia, South Sudan, Uganda and Italy, the main areas of intervention concerned:

- Health of mothers, children and adolescents
- Fight against malnutrition
- Fight against major pandemics
- Surgery, emergency medicine and traumatology
- Water and hygiene

The NGO considers *"health in its complexity as the general well-being of the individual and the community"* for this reason it promotes collaborations and synergies with realities in the non-profit sector, public institutions, universities, companies and foundations by bringing together experiences and skills from different areas.

Their projects actuated in Sud Sudan since 2013 and Etiopia since 2016 have the aim of universal and equitable access to quality health service, and so to improve the accessibility and quality of Primary Health Care Unit services, ensuring the continuum of care to the community from the hospital level. The services were strengthened both from an infrastructural point of view with the availability of health equipment, and through the training and continuous supervision of operators. The intervention also improve the strengthening of the patient reference system, from communities to first-level health facilities, through the activation of protocols, communication mechanisms and the transfer of urgent cases to qualified facilities.

2.5.5 Africa Mission

In 1972, a group of lay Christians from Piacenza founded the Africa Mission movement, with the aim of living their faith by helping the troubled populations of the Third World and Eastern Europe.

Ten years later, two members of the Movement founded "Cooperation and Development", an NGO that becomes the operational tool of Africa Mission, through the implementation of cooperation projects and development plans.

Mainly active in Uganda, they carry out community awareness works, support for missionaries to the local Church and associations involved in the work of promoting life. The goal of the non-profit organization is in fact "to support and promote human development in the poorest countries in the world by promoting the dignity of the human person in all its aspects, carrying out emergency interventions in support of local realities".

In Italy, it is engaged in training activities to raise awareness of solidarity issues, development education, promotion of national and international volunteering. In Uganda, the development programs concern various sectors of social life, including the sectors of water, health, socio-educational and agricultural-zootechnical.

Africa Mission Cooperation and Development Onlus follows six principles:

1. The centrality of man and the recognition of his dignity as an absolute value
2. The enhancement of man in the entirety of him
3. Solidarity as a duty of sharing, of justice, of equity
4. The principle of subsidiarity to enhance the priority role of the individual within the society in which he lives

5. The principle of partnership as recognition of the value of comparison and collaboration between the various social organizations, as an affirmation of the value of diversity and of the fact that every culture, however different, has an intrinsic quality to communicate
6. The principle of sustainability, which requires you to catch up with those who walk more slowly, that is, to carry out projects that local communities are able to continue independently with their own strengths and abilities.

In Uganda Africa Mission built a dispensary to guarantee the right to health for the most vulnerable populations of Karamoja, and to support health structures for the promotion and protection of health in Karamoja region, to increase the accessibility, equity and quality of basic health services.

2.5.6 CUAMM - Medici Con L'africa

Founded in Padua in 1950, Medici Con L'Africa CUAMM is the first NGO in the health field recognized in Italy and the largest Italian organization for the promotion and protection of the health of African populations.

To date, more than 2000 operators, including doctors, paramedics and technicians, have served in African countries, especially sub-Saharan Africa, for an average duration of about 3 years.

The main commitment of the Organization concerns the accessibility of health services to the entire population, especially the poorest and most marginalized. Through long-term assistance projects, aimed at the development of health structures and training of health personnel, the population is also actively involved in the initiatives. Mothers and children are offered treatment and prevention programs for the main infectious diseases, HIV / AIDS, tuberculosis, malaria.

The two main purposes of the NGO regards:

- Improve the state of health in Africa, in the belief that health is not a consumer good, but a universal human right for which access to health services cannot be a privilege
- Promote a positive and supportive attitude towards Africa, that is the duty to help raise interest, hope and commitment for the future of the continent in institutions and public opinion.

The organization is active today in 8 countries of sub-Saharan Africa (Angola, Ethiopia, Mozambique, Central African Republic, Sierra Leone, South Sudan, Tanzania and Uganda) with long-term health care projects for hospitals, small health centres, villages and universities.

In Tanzania they carried out 2 projects on child care and malnutrition in Iringa and Njombe regions. One is Mother and Children First that aims to reduce maternal and perinatal mortality, offering free and qualified assistance during childbirth, both in the Tosamaganga hospital and in the Iringa District Council to improve obstetric assistance and emergency services, basing them on quality and equity. The goal is, in fact, to increase the number of women who choose to be assisted free of charge by qualified health personnel during childbirth. The second takes care of child malnutrition. Doctors with Africa CUAMM trains and supervises 1,019 community health workers (CHWs), in order to increase answer the demand for health services, to promote assisted birth and the screening of the nutritional status of communities. The work of the CHWs also supports the health authorities of the two Regions and districts most involved in the fight against malnutrition in children under the age of 5.

Also a project against HIV in Shinyanga region was developed from 2015: it involves the Bugisi health centre to which the inhabitants of all 35 villages in the area (75,000 people) belong. The goal is to increase the number of people who get tested for HIV and are put into treatment. Work is underway to strengthen counselling and testing services; better management of antiretroviral drugs; the prevention of the transmission of the virus from mother to child; the improvement of laboratory services for diagnosis; the staff training.

At the level of the reference territory, work is being done to increase the number of visits also to the villages and for raise awareness and involve the beneficiary population more by increasing awareness of the disease.

2.6 *REHABILITATION PROJECTS IN AFRICA*

In the next paragraphs an analysis of the most relevant agencies that undertook projects about rehabilitation of people with disabilities is highlighted.

There are several different typologies of rehabilitation, but as predictable, those projects focus on rehabilitation of disabilities, which among the others is the most relevant and problematic issue in Africa.

There is dramatic custom in rural and poorest areas of Africa regarding the disabled people and in particular children. When a child has a heavy form of disability and for that will not

be able to work and to be active in the community, he is only seen as a new mouth to feed by the family that cannot take care of him. So that he is abandoned by his own parents, to his sad and usually fateful fate.

Although it is a barbaric and unforgivable practice, it's important to realize how much this harrowing choice is dictated by the absence of alternatives and the instinct for survival: a family cannot afford to feed and care for him for life, so rather than starving other members of the family group are forced to sacrifice him.

The objectives of this ventures, like ours, are to reduce this custom and to make the disabled people able to be actively participant in the community life, being able to practice a work.

Some of the projects are very similar to the idea of the rehabilitation centre we want to create in Mvimwa and those are highlighted in tables where the place, the period, a brief description, the results obtained, and the financiers and donors involved are reported.

2.6.1 Comunità Solidali Nel Mondo ONLUS

Initially born from the commitment of young people to carry out civil service in various countries of the world, "Comunità Solidali nel Mondo ONLUS" became a non-profit organization in 2007, with its headquarter in Rome.

It operates in the countries of the South: from South Africa to Latin America, also passing through the southern territories of the more developed countries.

The founding of the association has guaranteed the launch of activities in favour of children with disabilities in the countries of sub-Saharan Africa, the activation of projects in favour of minors and rural development and aid to micro-entrepreneurship of small farmers and indigenous populations in rural areas of Ecuador and Bolivia.

The Organization bases its work in response to the needs of the most fragile sections of the population, with an important focus on children with disabilities. Over the years Comunità Solidali Nel Mondo ONLUS has developed projects following pillars of Community Based Rehabilitation (CBR) methodology, "a multisectoral approach that aims to achieve and maintain maximum independence, full physical, mental, social and professional capacity and full inclusion and participation by all aspects of the life of people with disabilities ". CBR approach will be better explained in the paragraph 5.3.

The purposes pursued by the Organization concern exclusively social solidarity, such as:

- Social assistance to the marginalized and the poor of all continents by promoting their integral development of the person;
- Promotion of development cooperation and humanitarian aid for the populations of developing countries, to improve their living conditions at all levels: social, economic, cultural, working, health, educational, respecting culture, values and creative spirit of each;
- Promotion of solidarity, social justice, peace, globalization, cooperation between peoples, gratuity and voluntary work, respecting the local environment, the cultural and religious roots of each population.

In Tanzania the Inuka CBR Centre was inaugurated in 2011. It was a small center used for the care and rehabilitation of children with disabilities. Today it has become an important reference for two entire regions, Njombe and Mbeya, in the south-west of Tanzania and, in 2019, it was recognized by the Tanzanian Government as a "Rehabilitation Hospital" under the management of the Diocese of Njombe, owner of the structure. So that he Inuka CBR Centre became part of the network of health facilities in Tanzania. In 2020 the Centre offered its services to over 950 people.

The Inuka model certainly represents a "best practice" in the African country, in particular because of the very effective methodology of Community Basis Rehabilitation (CBR) of which they are promoters. The person with disabilities has multiple needs, in addition to rehabilitation, to which they offered concrete answers through an integrated approach. Activities were promoted to school inclusion for children who, until then, attended different classes. The income-generating activities supported in recent years, such as the oil mill and the agricultural farm, have made it possible to overcome social stigma and have favored inclusion in work contexts and in the communities to which they belong.

Kila Siku in swahili means every day and Kila Siku CBR was the third centre opened by Comunità Solidali Nel Mondo ONLUS. Inaugurated in Dar es Salaam on February 14, 2020, in the suburban district of Kawe, one of the most populous in the southern area of Dar es Salaam, which with 6 million inhabitants is the largest metropolis in Tanzania. The structure is adequately equipped to give “kila siku”, every day, concrete, meaningful and qualified answers to the needs of hundreds of children with disabilities. But the centre is also the first place where families will find help and support to participate in the rehabilitation of their children with disabilities. Here every day people come to do rehabilitation and every day, they return to their homes. Caring for the disabled is in fact a commitment of the family and of the whole community. Behind every disabled child,

however, there is almost always a woman, a mother, often alone, who every day has to face enormous difficulties, and so also for her Kila Siku CBR offers support and training with its psychologists and social workers.

In Dar es Salaam, which has 6,000,000 inhabitants, there are about 340,000 disabled people. Disabilities arise due to pathological and non-pathological events, but always develop and worsen due to the lack of access to therapies and rehabilitation. Inside the Rehabilitation Center there are: a gym, named after Giancarlo Fratocchi, four medical offices, coordination offices, a training room for basic operators and soon also a second gym to accommodate many more children. To manage the Center, there are the Sisters of Ivrea, with the support of Comunità Solidali Nel Mondo ONLUS and the presence of volunteers in Civil Service.

Below are reported 2 table with the schematic descriprion of this 2 projects, who were detailed analyzed for the creation of Golfini Rossi ONLUS rehabilitation centre project.

INUKA CBR PROJECT	
PLACE	The Inuka village in the Njombe region of Tanzania
PERIOD	From 2011. Active at the moment.
DESCRIPTION OF THE PROJECT	The project aims to improve the life of children and adults with disabilities and all other patients with rehabilitation needs. The hospital provides high quality health and rehabilitation services through a specialized and multidisciplinary team. The services provided are physiotherapy, occupational therapy, speech therapy, psychological and nutritional counselling, production and delivery of assistive devices. About the latter, services regard diagnosis and treatment of acute and chronic illnesses, early detection and referral to specialized care, preventive care and health education. In addition, in 2014 a laboratory for the production and application of orthopedic aids was built and started with the aim of facilitating more effective motor rehabilitation, with greater results in functional recovery and the acquisition of autonomy.
FINANCERS AND DONORS	Financers: – Conferenza Episcopale Italiana (CEI) – CESC Project
ACHIEVED RESULTS	Results of 2019: – 2800 children with disabilities taken care of – 1080 patients attended weeks of intensive treatments – 1800 individual rehabilitation treatments for adults – 750 orthopedic treatments – 6300 outreach treatments – 450 supportive devices delivered

KILA SIKU PROJECT	
PLACE	The Kinondoni district in Dar Es Salaam region of Tanzania
PERIOD	From 2019-
DESCRIPTION OF THE PROJECT	The project aimed to improve the quality of life of the disable children and their families, inspired by the Community Based Rehabilitation logic. A multidisciplinary team is operating within the center, made up of various professional figures trained during the project: physiotherapists, educators, social workers, pedagogues and health personnel. Inside the Rehabilitation Center are present: – A gym – Four doctors' offices – The coordination offices – A training room for basic operators – Afterwards, a second gym to accommodate many more children.
FINANCERS AND DONORS	Financers: – Agenzia Italiana Cooperazione allo Sviluppo (AICS)
ACHIEVED RESULTS	Results of 2019: – 360 home treatments – 2,500 individual treatments – 120 trained parents – 10 trained operators

2.6.2 OVCI La Nostra Famiglia

"Organismo di Volontariato per la Cooperazione Internazionale (OVCI) La Nostra Famiglia" is a NGO, born in 1982 from the commitment of the two promoters: the "Gruppo Amici", a free association that is committed to spreading the spirit of fraternity and it promotes the cause of canonization, together with the Association "la Nostra Famiglia", dedicated to the care and rehabilitation of people in developmental age with disabilities.

Recognized by the Italian Ministry of Foreign Affairs and registered with the Agency for Development Cooperation since 2016, it is inspired by the Blessed Luigi Monza, stating that "*good is done well", and according to a motivation of social solidarity; a "human solidarity - because human is the field in which it is implemented - but at its root it is divine command", to promote the professionalism and training of local operators because "what matters to us is man, every man, every group of men, to the point of understanding the whole of humanity* ".

The Organization, as well as in Italy, is active in China, Ecuador, Morocco, Sudan, South Sudan, Brazil and Palestine.

OVCI was created above all to carry out initiatives that develop the human and social promotion of citizens of developing countries, with particular regard to interventions in favour of the disabled, promoting training and the development of autonomy; secondly, to support a testimony of social awareness, urging public opinion to be aware and responsible in the face of human problems and in particular of developing peoples.

It carries out development cooperation projects to respond to the numerous reports of needs, in particular of Rehabilitation, for people with disabilities in developmental age.

The main proposed interventions concern:

- Rehabilitation
- Training
- Social care
- Basic medicine
- Global Education

The Osratuna Rehabilitation Centre, they created in Sud Sudan aims to improve rehabilitation, health and educational services for children with disabilities. The services offered are physiotherapy and occupational therapy, as well as speech therapy interventions for children with deafness and language disorders.

Children are also followed for the educational part with a pre-school service organized at the Center and placement in primary school in government and private schools in the County of Juba.

The main activities are the Usratuna pre-school management and the integration in local schools, rehabilitation center management, orthopedic workshop management, health center management and staff training.

USRATUNA REHABILITATION CENTER PROJECT	
PLACE	The Juba city in Sud Sudan
PERIOD	From 1984
DESCRIPTION OF THE PROJECT	The project aims to improve rehabilitation, health and educational services for children with disabilities. The services offered are physiotherapy and occupational therapy, as well as speech therapy interventions for children with deafness and language disorders. Children are also followed for the educational part with a pre-school service organized at the Center and placement in primary school in government and private schools in the County of Juba. The main activities are: Usratuna pre-school management and school integration in local schools, rehabilitation center management, orthopedic workshop management, health center management and staff training.
FINANCERS AND DONORS	Financers: – Agenzia Italiana Cooperazione allo Sviluppo (AICS) – Confederation swisse – United Nation World Food Program (WFP) – The Curch of Jesus Christ
ACHIEVED RESULTS	In 2014: – 350 children benefited from rehabilitation services – 200 children were referred to Uganda for surgery – 30 children were followed in pre-school and 73 during the school inclusion process In 2018: – An Orthopedic Workshop was set up for the production and repair of aids and orthoses for people who belong to the Center (average production of more than 300 devices per year).

2.7 *ANALYSIS OF ACTIVITIES AND BENEFICIARIES OF COOPERATION PROJECTS*

	CHILDREN	**MOTHER & CHILDREN**	**ENTIRE POPULATION**
PRIMARY HEALTHCARE	The Salissa Mwana project Sisi ni kesho – noi siamo il futuro project Care of child malnutrition project	Mozambique natal care project Healthcare mother and child project The Kilamba Kiaxi project Mothers and children first project	Universal and equitable access to quality health service project Dispensary – health care project St. Kizito hospital support project
DISABILITY	Kituo cha afya project Usratuna rehabilitation center project Kila Siku project		Inuka CBR project
HIV/AIDS		The Kento Mwana project Kituo cha afya project	Ight against HIV in Shinyanga region project
STAFF TRAINING	The Salissa Mwana project		The Kilamba Kiaxi project St. Gaspar referral and teaching hospital formation project Strengthening the primary care system for the country population project
INFASTRUCTURE		Healthcare mother and child project	The Kilamba Kiaxi project Kituo cha afya project

In the analysis of the actors previously described seventeen projects were identified, and now they are examined to explain the crucial role of international cooperation in the healthcare sector. All programmes cover different areas of intervention and different countries in the African continent.

As interest of this thesis, below is described the target classification, based on are the activities carried out and the beneficiaries involved reported in the table of the previous page.

Three main categories of beneficiaries were identified. On the one hand, some projects addressed the whole community, independently from age and sex. On the other hand, some programmes focused their attention on a specific category, such as children, approximately with an age between 0-5, and mother-children.

The areas of intervention covered instead five dimensions: general improvement of primary health care, focus on disability and creation of rehabilitation centre; prevent HIV/AIDS; training staff and develop infrastructure for the health sector.

The first area of interest regards the improvement of primary health care. In this field, three programmes address as target beneficiaries' children.

Eni Foundation, with "The Salissa Mwana" project, supported children in rural areas, increasing the capacity of the healthcare centres so to reduce childhood illnesses. "Sisi ni kesho – noi siamo il futuro" by C.O.P.E. focused on 0-5 years orphaned kids, providing care and basic assistance. The same aging target has been addressed by the "Care of child malnutrition" project of CUAMM, with screening activities nutritional status to fight against malnutrition.

Other four projects instead focusing on mother and children.

The first three, Mozambique natal care", Healthcare mother and child" and The Kilamba Kiaxi project, still financed by Eni Foundation, aimed to improve quality of medical services for mother and children. The first one in order to reduce neonatal, infant and maternal mortality. The second to improve knowledge of hygiene and health issues. The third, among others, to generally expand the service. The CUAMM project "Mothers and children first", as the first cited, pursue to reduce maternal and perinatal mortality, through the offer of free assistance during childbirth.

To conclude the first classification, three programmes address the entire population for improving the primary health care.

“Universal and equitable access to quality health service” of Comitato Collaborazione Medica and “The Dispensary - health care” project by Africa Mission aim to enhance the accessibility and quality of health services for the whole community. Lastly, through the management of the “St. Kizito hospital” by CUAMM, all inhabitants have access to good quality services at the lowest possible price.

The second area refers to disability and rehabilitation centres, with three projects focused on children and one related to the entire population.

The POLE POLE rehabilitation centre of the **“**Kituo cha afya**”** project mainly treats children minor disabilities. The “Usratuna rehabilitation centre”, carried out by OVCI La Nostra Famiglia, is instead a broader centre, aiming to improve rehabilitation, health and educational services for children with disabilities. Lastly, the “Kila Siku” project of Comunità Solidali Nel Mondo mean to enhance the quality of life of the disable children and their families.

The “Inuka CBR” is the only project considered that do not focus only on children but treats also adults with disabilities and rehabilitation needs.

HIV/AIDS represents one of the main diseases in Africa. In this area, two projects focus on the transmission between mother and children.

As last area of intervention of Eni Foundation, “The Kento Mwana” project works for the reduction of the HIV/AIDS transmission from mother to child to 2-3 percent. The “Kituo cha afya**”** project, beyond the rehabilitation centre, provides programmes for HIV/AIDS counselling.

The last project, “Ight against HIV in Shinyanga region”, covers instead the whole population. The pursue is to increase the number of people getting tested for HIV to put into treatment and spread awareness of the disease.

A number of projects are focused on the third classification, formation of local personnel and staff training. Only one program is specific for children as target.

“The Salissa Mwana” project, as already explained, supports children in rural areas. Among others, the goal is to enhance the knowledge of local healthcare workers regarding vaccination and prevention.

In the same classification, three training programmes are carried out to cover the entire population.

“The Kilamba Kiaxi” project improves technical and management skills of healthcare staff in gynaecology, paediatrics, nutrition and biology. The Ospedale Pediatrico Bambino Gesù is well known for transfer skills to African personnel. The “St. Gaspar referral and teaching hospital formation” project is specified in share knowledge and skills on specific therapeutic, diagnostic and assistance paths in the field of plastic and maxillofacial surgery. To conclude, “Strengthening the primary care System for the country population” project of C.C.M offers services through the presence and training of qualified personnel, such as nurses, midwives and clinical officers.

The fifth and last category refers to infrastructure, in particular those missions in the field of build or rebuild hospitals or provide transportation resources. No project has the only objective of improving the infrastructure of a territory, but they are portions of much larger projects. For this, all those now mentioned have already been analysed in other categories.

Here the distinction of the three types of beneficiaries refers to target of the services provided by the specific program.

In “The Healthcare mother and child” project, a focus on developing infrastructure played a key role. Eight Community-based Health Planning and Services compounds were built. Ten health centres were renovated and supplied them with equipment, water and electricity. Four ambulances and an ambulance boat were donated. Lastly, a new prenatal block was created in the hospital.

In the “Kilamba Kiaxi” project, new health infrastructures and a nutrition therapy centre were developed. The “Kituo cha afya” project consisted in the realization of a hospital in an area with very low health coverage. Both hospitals and centres addressed the entire population.

3 OBJECTIVE OF THE THESIS AND METHODOLOGY

This chapter describes the goal of the thesis and the methodology used to achieve it. As already mentioned above, the problem of lack of care for disabilities in the poorest areas of Africa and in particular in those of Tanzania is known and easily imaginable and noticeable.

In the territories of influence of the Monastery (district of Nkasi and Sumbawanga) the children with physical disabilities who attend public primary schools are 450, while in secondary schools there are 70. A number strongly reduced even for abandonment of studies. In fact, the data of children who do not attend compulsory schooling are not available, this phenomenon very present in rural areas is due to the fact that data research on children in rural areas are made in the schools, rarely researchers goes village to village to collect data; this drastic reduction, however dramatic, is therefore not only linked to the fatality of disabling diseases in this age group. It is consequently necessary to take into account a greater number of possible patients who will need treatment.

There are very few rehabilitation centres in Tanzania and, for the law, they are not recognised as health care centres, so that they can not receive public provisions of medical products and medical aids, neither the health care workers paid by the state. In this perspective the realization of the Mvimwa Rehabilitation Centre side by side with the Mvimwa Health Centre, and the project of his ampliation, provides the possibility to ask for all the requirement together to the state, and so higher probability to have economic and provision support.

In the territory of Rukwa there are no specialized centers, and the only motor rehabilitation facilities, however not very efficient, are in the Regional Hospital of Sumbawanga.

The recruitment of physiotherapists is critical, as there are very few professional figures throughout the country. To become a physiotherapist there are 2 possible ways: a 4-year degree, or a 3-year diploma. Throughout Tanzania the graduated are about 100 students a year. To make a comparison Italy has a similar population (about 60 million inhabitants) and an area that is less than a third, but every year 1,200 physiotherapists graduate in Italy.

The goal of this project is precisely to give support and rehabilitation to disabled people in the area. With a process that starts from prevention and early diagnosis, to reduce future cases and that ends long after the patient leaves the center, with the presence of an educator and a job start-up center. This project will provide skills to regain autonomy and the possibility of being actively reintegrated into the community and the world of work to people who would otherwise remain inexorably marginalized.

3.1 ***METHODOLOGY***

The best way to put in act a so enterprising project, as the one explained before, was to work with an NGO that operates in that area and which has the desire improve the health care provision there.

So that I started an internship with Golfini Rossi ONLUS, a very young ONG that I came in touch with years before and with which I already made a week of volunteering in Tanzania in 2018. I followed with them another project on improving a well nutrition in Mvimwa Monastery area and I was deeply touched by that experience, that place and the people known there.

This section explores the methodology and the steps followed to design the final project. It can be divided in 4 different steps:

1. The first phase can be defined as research. The work begins with wide research on data about Tanzania, information about health care system, present diseases and occurrences. Then in order to be more focused on the project we aimed to start, to find possible barriers and best practices, it was important to study different previous attempts, implemented by other agencies. Then all the agencies and the projects founded were analysed to extract useful information and contacts;
2. The second step was the consulting phase in which we contacted some agencies and structures similar to the one we want to create, asking for information, practices, possible risks and barriers. Then with a clearer idea of how to develop the project, we contacted different expert for the different fields, asking them for a review of the idea, suggestions and corrections;
3. The third phase was the designing phase in which the project, now completed in all the parts is written down, with budget forecasts for all his aspects, ready to be presented.
4. The last phase of projecting before to start acting in Tanzania is the fundraising. The project is presented to the different donors or lenders, both private and associations. This last phase is not already started at the moment in which I write the thesis but the project is almost done and ready to be shown, to receive donations and to gain public calls.

3.1.1 Phase 1 – Research

In this first phase a wide work of research had been done.

First of all, a great deal of research has been done to focus precisely on the context in which we are going to operate. An analysis of Tanzania from a physical, political, demographic, and religious point of view has been carried out with this aim in place.

Moreover, although it was quite foreseeable that the demand of rehabilitation care for disabled people would be much greater than the supply, data were sought concerning the main diseases present and the organization of the national health system.

This information is given in section 4 "Analysis of the context: Tanzania".

Research has also been carried out regarding the rehabilitation process and the creation of rehabilitation centers, both in developed and developing countries. In order to have a clearer idea of what could have been implemented and what could not. Above all it was necessary because it is not the specific field of specialization neither mine nor of the other people of the team. This information is given in Chapter 5 "Project of Rehabilitation Centre".

Subsequently, the research moved on to international cooperation to analyze more specifically the "market" and the other organizations that operate there. In addition, during this phase we went in search of the projects they carried out in the health sector and specifically in rehabilitation.

First of all, a web research identified the main NGOs operating in the country, with a focus on projects in the health sector. To them, also foundations of private and public companies, having an interest in working in developing countries, were analyzed. Secondly, additional actors were identified from a list of all the Non-governmental Organizations active in Tanzania, provided the Italian Embassy in Dar Es Salaam.

Eight companies were analyzed in detail. Their strategy and their projects are reported in paragraphs 2.4 and 2.5.

- Eni Foundation
- Children's Hospital Bambin Gesù,
- COPE – Emerging Countries Cooperation
- CCM – Medical Collaboration Committee
- Africa Mission
- CUAMM – doctors with Africa

- Solidarity Communities in the World ONLUS
- OVCI Our Family

Seventeen projects regarding health care were identified, analysed and categorized on two axes: beneficiaries and areas of intervention.

Three main categories of beneficiaries were identified. On the one hand, some projects addressed the whole community, independently from age and sex. On the other hand, some programmes focused their attention on a specific category, such as children, approximately with an age between 0-5, and mother-children.

The areas of intervention covered instead five dimensions: general improvement of primary health care, focus on disability and creation of rehabilitation centre, prevent HIV/AIDS, training staff and develop infrastructure for the health sector.

The detailed analysis and description is reported in paragraph 2.6.

3.1.2 Phase 2 - consulting

The second phase of the work began with several discussions and video calls, within the Golfini Rossi ONLUS team and the professional figures who support and help the association, to debate the project and start planning the common idea, adding details and sharing opinions.

Two associations OVCI La Nostra Famiglia and Comunità Solidali nel Mondo ONLUS were then contacted. As described in paragraph 2.5, they have already implemented projects very similar to our and they could have given us guidelines to follow, best practices and warn us against possible obstacles and complications.

The contact with OVCI La Nostra Famiglia was made in video call, with Luca Rossetti, the head of their projects in South Sudan, including Usratuna Rehabilitation Centre, and Manuela Vittor, physiotherapist who worked for 14 years in the field and now deals with human resources for OVCI La Nostra Famiglia. Information on this association, its projects and the Usratuna Rehabilitation Centre project description is given in section 2.5.2.

During the call were exposed two main points. The creation of the different areas of the center and the most recurrent diseases, those cured better and more frequently.

The situation in South Sudan has always been particularly dangerous, at the beginning of the project there was also the civil war. The work in the center was divided into 3 areas, they had an operating room, an hospitality room for children and a rehabilitation room were

usually the patient were treated after surgery. Subsequently, even with the stabilization of the situation, a pre-school was opened for those children who had to stay for a long time in the center and a dispensary to treat the other pathologies.

In addition, they have also erected an orthopedic workshop in which they build the medical aids necessary for the patients of the rehabilitation center. The tools produced are provided according to the economic capacity of the family. Depending on its financial availability, the price of the equipment could be paid in full, reduced or even given free of charge. For this reason, the workshop is not economically self-sustainable, it is therefore financed through OVCI funds and consequently with donations.

For what concerns the most present diseases it was explained that they are:

- polio, very present at the beginning of the project but then almost disappeared;
- infantile cerebral paralysis, usually caused by cerebral malaria and meningitis;
- tetraparesis,
- hemiparesis,
- diplegia and dystonia,
- motor delays,
- obstetric paralysis,
- down syndrome,
- post injection paralysis, with injections for malaria,
- hydrocephalus,
- spina bifida,
- labiopalatoschisis.

After a long series of e-mails and exchanges of information, even the contact with Comunità Solidali nel Mondo ONLUS was resolved in a videocall in which all the participants of the Golfini Rossi Onlus project, had the opportunity to discuss and ask for information to the executors of the Inuka CBR Project and Kila Siku CBR Project.

Details on the association and projects can be found in section 2.5.1 while information provided during the video call are given below.

The figures of Comunità Solidali nel Mondo ONLUS who participated in the meeting are here reported:

- Azzurra Cori, head of the Kila Siku center in Dar Es Salaam, with the civil service has participated in cooperation projects since 2010.

- Federica Castellana, she is a physiotherapist in charge of the rehabilitation center of Mbeya.
- Thierry Muccifora, he is an electronic engineer and deals with the administrative part of the association from Italy, precisely in Rome. He also spoke on behalf of the president of the ONLUS Michelangelo Chiurchiù, who was not available at that time but who controls all the projects, he is an expert in the field of rehabilitation and inclusion.

The topics debated during the call focused on 4 main areas:

1. The method by which they operate in the centers.
2. The great criticality represented by the impossibility of being recognized as a health center in Tanzania.
3. The minimum set of professional figures and equipment necessary for the activation of a center similar to theirs.
4. The major disabilities they have encountered and cared.

Their centers are based on the CBR methodology, it is a multisectoral approach that aims to achieve and maintain maximum independence, full physical, mental, social and professional capacity and full inclusion and participation by all aspects of the life of people with disabilities. CBR approach will be explained in detail in paragraph 5.3.

According to the pillars of this method, the disabled person is not abandoned to himself or in a center that takes care of him, but the whole community is responsible for taking part in his process of healing and integration in everyday life.

The disabled child goes to the center every day with his family to take part in rehabilitation. Each patient is first evaluated by physiotherapists who create an individual rehabilitation plan based on his characteristics and needs. The plan is then shared with the Community Rehabilitation Workers (CRW) who help them in carrying them out. The community rehabilitation workers are not graduated professional figures but have followed courses and are instructed in accompanying patients, in monitoring them and in making them perform the exercises correctly.

In the Inuka center there is an event called "intensive rehabilitation week", in which families and patients stay for one or two weeks in the center and learn everything there is to know and do to take care of the disabled.

The social worker has relations with schools, both to enter patients, and to train teachers to their needs, while the psychologist supports and helps patients together with their families.

The greatest critical issue they encountered in the implementation of the rehabilitation project was that of not being recognized by the state as a healthcare center and, therefore, not being able to make claims for reimbursements and insurance, as well as state personnel. At the moment only national health centers and dispensaries are recognized, the rehabilitation center individually is not considered as a healthcare center.

The minimum set required for the commissioning of a rehabilitation center is rather basic and cheap. The elementary and fundamental figure in the center is the physiotherapist flanked by an occupational therapist. However, due to the very low presence of these professional figures in the center, most of the operations will be carried out by the so-called Community Rehabilitation Workers. The Community Rehabilitation Workers are usually women who are instructed by physiotherapists and occupational therapists, to assist the patient in the rehabilitation process and in the execution of the exercises and practices necessary for his healing. For an effective work in the center, a physiotherapist and an occupational therapist are needed, lined by 8 community rehabilitation workers, but for the activation just a physiotherapist and 4 CRW are enough.

The basic necessary equipment is even more simple: mattresses and pillows covered with leather, easy to be washed, large pieces of sponge, effortlessly bought locally and then cut in shapes as needed by the patient. Espaliers, parallels, walkers and postural chairs can easily be built by local carpenters.

The greatest disabilities that have been found are mostly motor, but also juvenile cerebral palsy, tetraplegia, hypotonia, spasticity, hemiplegia, diplegia and spina bifida. Hydrocephalia is often operated with stents.

The most frequently treated intellectual and behavioral disabilities instead is autism.

The whole process of designing the steps and putting into practice of the project was supervised by Dr. Anna Mazzucchi, neurologist and neurorehabilitation teacher in Università degli Studi di Parma, with great experience in neurological rehabilitation in international cooperation. In particular, in the last phase of the creation of the project she helped us to complete it not only focusing on the phase carried out in the center but with a wider view also on what happens before and after. These aspects will be analysed in detail in Chapters 6.2, 6.3 and 6.4.

Two major areas of intervention will be developed to take care of the patient even before it becomes necessary to enter the rehabilitation center: prevention and early diagnosis.

Instead, downstream of the therapy course performed in the center, the patient must be supported by an educator. This latter, based on the abilities and disabilities of the individual, will accompany him in the following period, in the normal path of everyday life, if necessary, making him understand what he is able to do in the community and how, depending on age, he can be inserted in the different classes of different schools or in the world of work.

In addition, she have treaded heavily on a key aspect that she experienced in other activities of international cooperation in rehabilitation centres: the real aim, rather than the correction of movements to make them visibly right, is to make an individual able to recover his autonomy. It is not strictly necessary that he is completely correct in his movements, but is essential that he can perform them himself, even with the help of special aids tailored to make up for his disabilities. For this, great importance has been given to occupational therapy, a rehabilitation discipline that uses assessment and treatment to develop, recover or maintain the skills of daily life.

3.1.3 Phase 3 - designing

In this phase the project is complete and described in all its aspects, reported in chapter 6 "Mvimwa Rehabilitation Centre" and budgets are defined for each part of it. At the time of writing the thesis, the project team is completing this phase so it cannot be reported in full, especially with regard to budgeting, but in the definition of the methodology this is the order to follow of the phases and in the short future also this part will be completed.

The whole project can be divided into 3 areas of intervention:

- the first concerns all the activities that were thought out before there was an actual need for the patient to enter the center. We will call this area "act before". These are prevention and early diagnosis. In particular we talk about babies, most of the prevention work can be done in the period of gestation, in the stage of childbirth and in the care and nutrition of the baby. In the same way in this phase of the first months of life through the control of different signals it is possible to recognize disabling pathologies and intercept them early.
- The second area is that of the activities that take place within the rehabilitation center. In detail here will take place the visits, the exercises practical for rehabilitation, hospitalization and assistance. In the overall plan also the sessions with specialized professional support figures as occupational therapists and

psychologists. In this area will also be addressed all patients post orthopedic surgery, that are been operated in the surgery room of the Mvimwa Health Centre. At the same time the patients visited in the centre rehabilitation who need an intervention will be directed there, and then return to the center for the rehabilitation phase.

- The third area of action is the one that follows the exit of the patient from the center and will be called "act after". When the patient is discharged from the center, an educator will support him and he will have the tasks of assisting and accompanying him in everyday life.

The Mvimwa Rehabilitation Centre will then be assisted by 2 other structures that will complete the service of the center:

- The hostel, i.e. the temporary hospitality rooms. In these places patients will be hosted together with their carers, who are not hospitalized in the center. This space is necessary to avoid the phenomenon of abandonment, and to give the possibility to those who go to the center from distant areas, not to have to go home every day.
- The orthopedic workshop, a laboratory will be built in which the necessary aids will be produced for the patients of the center. Flanked by the monastery's carpentry school, aids will be produced and provided to patients according to the family's financial availability, if necessary free of charge.

3.1.4 Phase 4 – fund raising

For Henry Rosso, founder of one of the most important American fundraising schools, fundraising is not the science of find funds, but it is the science of the financial sustainability of a social cause. The donation is the result of a voluntary exchange between subjects who share the same goal, which comes at the end of a strategic design activity, not improvised, which involves the whole organization and not just its function or one of its units.

For NGOs, fundraising is often the most important, if not the only form of income.

As far as Golfini Rossi ONLUS is concerned, the funds necessary for the realization of the activities derive either from donations from private individuals or from participation in public, state or church tenders, in favor of international cooperation projects. It is precisely towards these two possible opportunities that the fourth and final design phase will be concentrated, before the actual realization of the project.

The fundraising activities of Golfini Rossi ONLUS are at the moment mainly aimed at private donors and companies. The biggest founds came from institutions, like Caritas Antoniana, Fondazione Mediolanum, Avis Torino, Fondazione Happy Child and Gift Matching Unicredit program. They allowed in recent years an acceleration of implementation on specific project segments.

Even this phase, however, has not yet been implemented, at the time I am writing the thesis, but it is planned for the near future. Only some aspects have been defined and some evenings of presentation of the project have been organized with partners and with entrepreneurs who may be interested in participating or in helping the association economically.

3.2 *GOLFINI ROSSI ONLUS*

Figure 2 – Sumbawanga primary school children (Tanzania)

Golfini rossi ONLUS was founded in October 2015. The name of the association was chosen in reference to the uniforms of the children of some African primary schools. It is a non-profit organization, which pursues the aims of social solidarity in support of the realities that are in conditions of poverty and fragility, in particular in favor of African territories, through volunteering and international cooperation. The areas of focus are health, nutrition, instruction, training and economic development.

The Association has been listed since 2020 in the Register of Organizzazioni della Società Civile (OSC) of the Agenzia Italiana per la Cooperazione allo Svilppo, and collaborates with various Institutions and Universities, both Italian and African. It acts on the territory of Tanzania in close collaboration with the African Benedictine Abbey of Mvimwa, a strategic partner with which it shares values, objectives and action plans, and which acts as a hospitality hub for the volunteers of the non-profit organization whenever the need arises.

Golfini Rossi ONLUS has organized, over the past six years, a series of activities in different sectors assisted by the chairs of the partner universities and through the sending and coordination of hundreds of volunteers, including among students and graduates of the faculties of medicine, nutrition science, biology, agro-economics and engineering.

This has allowed, through the agreement with the Monastery of Mvimwa, to develop important projects to alleviate the conditions of misery in which more than 23,000 inhabitants living in the 10 neighboring rural villages live, offering health and educational services, and encouraging local economic development. In fact, the basis has been created to facilitate the implementation of the initiatives in a structural way.

The following are some concrete achievements implemented:

- Construction of a modern and efficient maternity ward with qualified African staff trained in Italy;
- Launch of a "mobile clinic" to reach the villages and carry out basic and advanced health screenings on site;
- Construction of a canteen at the dispensary with an educational kitchen to teach new mothers and fight against child malnutrition;
- Introduction of new technologies (dryers powered by solar panels) to start food safety and food processing projects (in collaboration with Strathmore University of Nairobi, the Università Campus Bio-medico di Roma and CREA specialists);
- Promotional activity at the Regional Hospital of Sumbawanga to start on a large scale the production of "pappa di Parma", a solution on a scientific basis promoted by the Center for Food Technology of Università di Parma again to prevent early childhood malnutrition;
- Purchase of a building that will host a specialization school, in which will be kept courses for a postgraduate/post-diploma health training school;
- Multiple maintenance interventions of the primary school: creation of dormitories and local library. It is also in progress the construction of a canteen for 400 children;

- Launch of 30 micro-enterprises (6 months of training and assignment of professional start-up tools and follow-up;
- Support for distance learning of primary and secondary school students of the Monastery and partnerships with Italian primary schools to promote cultural exchange between Italy and Tanzania;

Talking about the organization of the association, the management is composed by

- Tiziana Bernardi, President of Golfini Rossi ONLUS,
- Bianca Rizzi, employee of Golfini Rossi ONLUS,
- Cristina Masella, Ordinary Management Engineering at Politecnico di Milano,
- Enrico Davoli Surgeon, collaborator of UCBM,
- Don Luca Fantini, electrical engineer and chaplain UCBM,
- Father Lawrence Samson Ntiyakila, Prior of the Monastery and head of the Mvimwa dispensary.

With the help of young people from different backgrounds, undergraduates or doctoral students from the partner universities, Alessandra Soldati, Silvia Fattori, Italio Fantozzi and Riccardo Campeggi.

3.2.1 Mvimwa Abbey

Mvimwa Abbey is located in the Rukwa Region in Tanzania. Here the Benedictine Monastery of Mvimwa has played a social and humanitarian role since 1979, and in the Nkasi District, in which live about 280,000 people, it is a reference for tens of thousands of people living in adjacent rural villages in conditions of absolute poverty. The 100 monks who are part of the monastery are all African and many originating from the adjacent territories. They have diversified formations and titles also obtained abroad, under the guidance of Abbot Pambo Martin Mkorwe and they manage:

- A center of pilgrimage and prayer,
- A dispensary,
- A primary school,
- Vocational schools of tailors, carpenters, and electricians.
- A secondary school with an adjoining college for teacher training
- Agricultural and breeding activities for self-sustening.

Since 2015 Golfini Rossi ONLUS collaborates with the Monastery of Mvimwa supporting it in the process of development of the rural territory in the fields of health and food safety, school, work and economic development, in collaboration with volunteers and scientific partners. Golfini Rossi Onlus bring together institutional partners in the desire for humanitarian and non-profit collaboration in support of the action of the Mvimwa Monastery. They are:

- Università Campus Bio-medico di Roma,
- Università degli Studi di Parma,
- St. Joseph University of Dar Es Salaam,
- Strathmore University of Nairobi,
- Nkasi district, Sumbawanga Regional Hospital
- CREA - Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria.

In this process of partnership in the health sector, the role of the Università Campus Bio-Medico di Roma is decisive. In line with its scientific and value specificities, it has mobilized employees, doctors, nutritionists and volunteer students to give concrete answers to the state of need of this immense territory.

There were many health workcamps, where over 120 students of nutrition and medicine sciences, postgraduates and doctors have brought relief to the population by acting with research, specialist visits and surgical interventions.

To date, 18 degree theses in nutrition and medicine have provided to Golfini Rossi Onlus and to the Monastery qualified input to finalize the interventions.

The partnership with the University of Parma is making possible to start processes of long-term stay in Mvimwa of undergraduates in the field of food technologies. The "Pappa di Parma" is an already tested solutions in other African countries in the nutritional processes and growth of early childhood, fighting against child malnutrition.

Golfini Rossi ONLUS also makes use of a qualified network of over 40 volunteer doctors.

Fundamental is the role of some professionals of the two Italian universities, who have made available skills and fiduciary relationships of their network to support the humanitarian cause.

The fundraising activities of Golfini Rossi ONLUS are mainly aimed at private donors and companies. Some institutions have allowed in recent years an acceleration of implementation on specific project segments. These include: Caritas Antoniana,

Fondazione Mediolanum, Avis Torino, Fondazione Happy Child, the Gift Matching Unicredit program and an UCBM student fundraising program.

3.2.2 Mvimwa Health Centre

The implementation of the current Mvimwa dispensary, legally already recognized as a Health Center, is underway, which will allow a real qualitative leap in the health conditions of the more than 23,000 villagers who gravitate around the Monastery; this innovation will give new tools to structurally affect the development plans of the rural territory of the entire Rukwa Region.

The participants at the healthcare centre project are described below.

The project leader is called Mario Rampini. He is a 41-year-old man with severe visual and motor disabilities who lives with his parents in Cerro Maggiore. Mario is a man of faith, always smiling and joyful, open to learn and welcome, to inspire and mobilize. Mario and his parents are for everyone an example of resilience and above all of great humanity. The "Casa di Mario" in this specific project is a privileged place open to meetings, comparisons, exchanges of experiences between designers and friends, sponsors and facilitators. All united to realize a common dream, which also contemplates that of bringing Mario to Mvimwa to inaugurate the Center.

The management is composed by Tiziana Bernardi (President of Golfini Rossi ONLUS), Bianca Rizzi (employee of Golfini Rossi ONLUS), Cristina Masella (Ordinary Management Engineer Politecnico di Milano), Enrico Davoli (Surgeon, collaborator of UCBM), Don Luca Fantini (Electrical Engineer and Chaplain UCBM), and Father Lawrence Samson Ntiyakila (Prior of the Monastery and head of the dispensary of Mvimwa).

The health coordinator of the Health Center is Enrico Davoli, he is a surgeon with years of experience in the African context, a volunteer of Golfini Rossi ONLUS.

The specialist consultant for the disabled project is Anna Mazzucchi, neurologist and former professor of neurorehabilitation at the University of Parma, for decades engaged in rehabilitation initiatives in developing countries.

The board is joined by young people who have decided to engage with active and significant participation:

- Alessandra Soldati, university student in management engineering Politecnico di Milano. She decided to write her thesis focusing on the theme of telemedicine in Africa, an aspect that will also have a positive impact on the issue of medical consultations on disability.
- Francesca Livia and Miriam Iannizzotto, young graduates in medicine (Campus Bio-Medico di Roma). Immediately after graduation they attended a course for the use of telemedicine systems and organized a specific mission aimed at teaching the use of technologies to the local health personnel of Mvimwa. The service will be active from January 2022, after the ongoing testing phase.
- Italo Fantozzi, young PhD student in Management Engineer (Tor Vergata University of Rome). It has decided to allocate a good part of the month of October 2021 for the development of the feasibility study and the executive plan of the Disabled Center in Mvimwa, working both at the headquarters of the non-profit organization and remotely.
- Silvia Fattori, a young UCBM graduate, specializing in pediatrics (University of Trieste). While waiting to undertake specialization studies in pediatrics, he decided to allocate a large part of the month of October 2021 for the development of the Centro Salute project, both working at the headquarters of the non-profit organization and remotely.
- And at the end me, Riccardo Campeggi, university student in management engineering Politecnico di Milano. I decided to write this thesis focusing on the theme of disability in Africa and motor rehabilitation centres, also with the aim of researching possible solutions for Mvimwa. I am also a basketball player, with the dream of bringing this sport to the African rural territories that I love.

The scientific network supporting the initiatives in Mvimwa is made up of doctors, bio-medical, management and chemical engineers, postgraduates, researchers, professors and students of four Italian universities. They are extremely committed professionals in different institutions and companies, but all motivated to carve out the time possible to contribute to the humanitarian project.

The members and volunteers of Golfini Rossi ONLUS are professionals of the disciplines necessary for the realization of the humanitarian statutory purposes.

The friends of Golfini Rossi ONLUS are people, communities and companies that share values and spirit of solidarity and participate with cash donations or specific professional

goods or contributions. Some participate by making their personal network of relationships available, mobilizing it to achieve the shared humanitarian goal.

Moving on with the development plan, in two years Golfini Rossi ONLUS made possible to have in the dispensary a satellite internet connection, a modern ambulance, a mobile clinic (a blood library donated by Avis and activated by a project with Politecnico di Milano), the analysis laboratory that is now able to connect with the telemedicine service installed in the health centre, the maternity / gynecology department with also a small operating room, the canteen (100 meals a day) with an adjoining educational kitchen to teach pregnant women and new mothers how to combat malnutrition, real social plague, in pregnancy and in the weaning phase.

The telemedicine system has been taken care of in the aspects of study and operational activation by Alessandra Soldati, management engineering thesis student at the Politecnico di Milano, her degree is expected in December 2021. The testing phase is underway to verify the aspects of operation via internet connection and offline, as well as the preparation of local health personnel, but at the moment gives encouraging results. A little paragraph about this project is reported below in chapter 3.2.3.

At the dispensary, by November, an African surgeon will be hired who, together with the already operational health personnel, will allow an acceleration of the development plan. The surgeon will be followed and supported by the health coordinator of the project Dr. Enrico Davoli.

The Monastery is also investing on the university education of its monks. Five of the monks of Mvimwa Abbey have been enrolled this year in universities in Tanzania and India in health disciplines.

For all the other departments that will constitute the Health Center, the project is to proceed with modularity and gradualness, in relation to the funds that will be found and with the precise intention of creating conditions of sustainability and local autonomy.

It is of fundamental importance and urgency to define the II level health facilities in Tanzania for the various specialist areas, also mapping the facilitation relationships of already active humanitarian corridors, for example the partnership with Bambin Gesù Hospital in Rome, which has great experience on international cooperation projects in healthcare.

3.2.3 Telemedicine

The telemedicine project in Mvimwa took shape when was felt the need to constantly and continuously train the healthcare personnel of the dispensary. Especially after the Covid-19 event, it became increasingly difficult to train on spot. Therefore, telemedicine represented a solution to guarantee constant support and training for local staff.

GHT, founded in 2013 by Michelangelo Bartolo, followed the experience of the Disease Relief through Excellent and Advanced Means (DREAM) program of the Sant'Egidio Community, a Christian community born in 1968 on the initiative of Andrea Ricciardi. It offers a medical, open source, free, multidisciplinary tele consult service that makes use of a pool of Italian specialists who lend their free of charge. It is a clear example of a new way to make international cooperation with a high-impact and low-cost.

Communication takes place through a web-based platform, where African doctors can send a request through a dedicated space. Created by Ttre informatics, the platform has the particularity of working also offline, fundamental for health centers with poor access to Internet.

In the platform, there is a specific page for the creation of a tele consult. The upper part is dedicated to patient's data: name, sex and birth date/estimated age. The lower part is given information about the tele consult. At the beginning, is asked to define the level of triage; there are four levels of emergency: white, green, yellow and red.

Since the platform has been created to work asynchronous, there are not emergency consults, however each is assigned a risk-based priority index. Then, is given the possibility to add some medical observation, while is mandatory the main answer.

There is an optional setting called Wizard that adds basic questions for an objective exam, depending on the specialization. Currently there are Wizards for general medicine, cardiology, dermatology and otolaryngology.

When the consult is ended, is chosen the medical specialty of destination. Each request is automatically sorted to a selected group of specialists, which receives an email or SMS that informs about a tele consult and allows to interact quickly between applicants and referrers.

Finally, the answer can be consulted in the software or online through any device. The entire activity is monitored by the Service Center, which provides two help desks: a health service, which intervenes to ensure the conclusion of each request and a technological first and second level to provide assistance to applicants and receivers.

Patient information is stored on the cloud, to create a medical record. Diagnostic or instrumental examinations from electromedical devices installed in remote centres may be attached.

The equipment of each remote health centre is modular and include a portable computer, dedicated exclusively to telemedicine, an electrocardiograph, a saturator, an HD webcam, an ophthalmoscope, an otoscope, an Rx scanner and various other health devices.

Strategically speaking, the use of the platform would be more exploited if located in one of the two regional hospitals, in Namanyere or Sumbawanga, given the greater number of patients rather than the ones in Mvimwa Health Centre. However, the project aims at an expansion and an evolution of the centre itself, which would be helped in the medium to long term by the presence of the platform. In addition, the monks would have more control over the equipment. For this reason, despite a minor initial use of the service, telemedicine was installed inside the health centre.

On August 30th, 2021, the collaboration agreement between GHT and "Golfini Rossi" and African Benedictine of Mvimwa Abbey was signed.

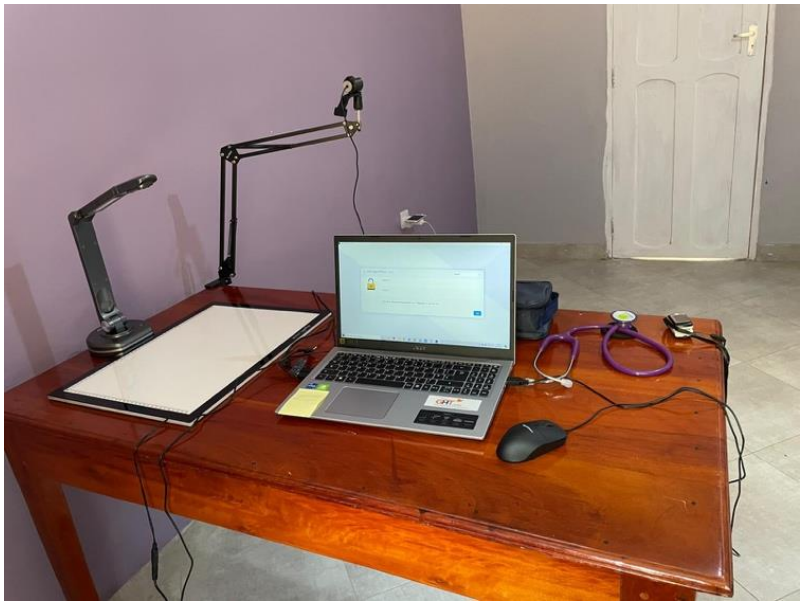

Figure 3 - telemedicine station in Mvimwa Health Centre

3.2.4 Clinic boat

In Kipili, on the shores of Lake Tanganyika, the Monastery runs a small center of formation and spiritual retreat for monks. It is an isolated place, extremely modest as is the rest of the surrounding area. The islands opposite are home to rural villages, totally devoid of any kind of medical and health care and their isolation makes the population even more vulnerable. The design study is underway to equip the Monastery with a clinic boat that can facilitate connections with the mainland but also bring first aid to the inhabitants of the islands.

3.2.5 Mobile dental office

The project "Mimi Na Wewe (that in Swahili means you and me) for a smile" is part of the health development plan designed for a vast rural area in Tanzania.

The distances between villages and the very low presence of connection services make the health service, today exclusively concentrated in dispensaries or hospitals, not sufficient for those who live in rural villages.

If we add to this condition the cost of health services and medicines (scarcely available even in hospitals) and the average per capita income, which is equivalent to less than 1 dollar a day, we understand how critical the situation is.

To the mobile clinic, now represented by a blood library donated by Avis Torino and used for screening activities in the villages, we would like to add a mobile dental practice.

The project "Mimi Na Wewe for a smile" was conceived by Dr. Daniele Rizzi, surgeon and dentist, founding member of the non-profit organization Golfini Rossi ONLUS, who died of covid in December 2020.

Golfini Rossi ONLUS is starting the first contacts with companies specialized in the field of mouth care.

3.2.6 Spezialization school

Figure 4 - Building for Specialization school in Sumbawanga

The Mvimwa Health Centre project will be completed by the launch of a post-graduate specialization school and professional updating in health and nutritional disciplines in Sumbawanga, with which it is intended to ensure continuous training in presence and telematically to all the health personnel of the Health Center and, more generally, to the health personnel of the Rukwa Region. This is a future development project now in a embryonic phase, but Mvimwa Abbey, thanks to an important donation of a benefactor, already has a building that, after the appropriate renovations and extensions, will become an ideal place for study and research.

In the school courses will be designed for the production of galenic drugs, enhancing the skills already available in the traditions of the Monastery, as a first response to the scarcity of drugs.

Funds are needed for the start of the expansion and restructuring works.

For the future management, negotiations are underway with SAFES - Scuola di Alta Formazione e Studi Specializzati per Professionisti, also specialized in the health context and already operating in several countries of the world with cutting-edge web solutions in English and Spanish.

3.2.7 Nutritional projects

Since the birth of Golfini Rossi ONLUS, the theme "food safety" has involved volunteers, postgraduates, undergraduates and researchers from the two partner universities Campus Bio-Medico di Roma and the University of Parma as well as CREA (Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria - Council for Research in Agriculture and Analysis of Agricultural Economics).

Several experiments have been carried out for the use of dryers with solar panels, as a response to issues of food security in rural villages, ecological sustainability and the need to avoid food waste. One of these was the first project I take part to in august 2018 when I went to Tanzania with my family. The Monastery has obtained the license to sell dried products, already being distributed in the city of Sumbawanga.

Multiple tests on the use of the "Pappa di Parma" were made.

The creation of an educational kitchen, inserted specifically in the canteen and near the maternity ward, opens up scenarios of design evolution and systematization of processes and procedures of particular interest.

Some lines of intervention are indicated in the plan:

- raising awareness of the theme "nutrition in pregnancy";
- widespread, capillary and continuous training for the production of "Pappa di Parma";
- curricular training for specific sectors of fish production and start-up of aquaculture production processes, Golfini Rossi ONLUS participated in a public call -waiting for the outcome;
- creation of a new professional profile "Mama Mwanga" for teaching in rural villages also of basic hygiene aspects and nutritional aspects for mothers-children. This project of Mama Mwanga will be deepen described in paragraph 3.2.9.

The multiple institutional channels will favor the application of methodologies useful for systematizing processes with the aim of generating a wide-ranging social-educational impact that, starting from Mvimwa, will be able to affect the whole Rukwa Region. Web portals in English and Swahili, training in presence and via the web in dispensaries, hospitals, diocesan centres, dissemination and promotion through Radio Maria are being projecting.

Negotiations are proceeding with the University of Parma to ensure a regular influx to the Mvimwa dispensary of new graduates, who will collaborate with each other in sequence

with the aim of carrying out long-term projects. The degree courses currently involved in the project are: Food Science and Technology and Human Nutrition Sciences. In January 2022 three young undergraduates from Parma could already go to Mvimwa to consolidate the educational processes for the health staff of the dispensary for the use of the "Pappa di Parma", a mix of local natural nutrients suitable for the weaning phase of newborns and in line with food safety principles.

3.2.8 Disabled Healthcare Centre and Sports for Young People

Disability, in different areas of the rural context, is a drama in the drama due to the scarcity and inaccessibility of infrastructure and cultural barriers still rooted in some territories, which lead families to marginalize or even abandon children.

The care center for the disabled is part of the wider expansion project of the Health Center. A "holistic" principle will be applied to the treatment center for the disabled that will embrace prevention, the clinical, therapeutic, physical, psychological-educational aspect (including family members) but also that of work, play and, in perspective, sport.

The detailed description of the project of the disabled care centre, which is the focus of this thesis, is given in chapter 6 "Mvimwa Rehabilitation Centre". Instead below are described the sporting projects that will proceed in parallel with it and strictly correlated.

In Tanzania, as consequence of the high birth rates and the short expectancy of life (65 years for Data Commons), the population has an average age of 17/18 years. The presence of the primary and secondary school of the Monastery, over 1300 students, and of numerous public schools present in the villages, represents an extremely interesting catchment area to promote processes of integration and socialization through sport.

The project is to build a sports center for young people, including the disabled, equipped with playgrounds, changing rooms and bathrooms, gym and infirmary equipped for first aid and motor rehabilitation in Sumbawanga, within the large complex of St. Maurus Chemical Secondary School.

Coaches in the selected disciplines will be needed to teach sport to physical education teachers and directly to young people. It is useful to provide the support of psychologists therapists and sports equipment suitable for disabled people for the game of rugby and basketball. This aspect will be organized together with the professional figures of the rehabilitation centre of Mvimwa.

The search of funds and donations of equipment from specialized companies that intend to enhance the contribution in their social report or become a partner of the non-profit organization, is in act with already some proposals. Participation in calls for tenders by philanthropic or sports bodies is also possible.

Golfini Rossi ONLUS has long started collaborations with the Parabiago 1948 Rugby Society, whose team plays in Italian Serie A, with the aim of bringing this discipline to rural areas, offering opportunities to young disabled people in the area. A rugby team consists of 13/15 players and the playing field (maximum size 100mx70) can be made on grass, sand or clay.

Rugby is a team sport that facilitates the ability to socialize and teaches respect for others. Loyalty is an essential part of the game, it helps to give self-awareness and security. From a motor point of view, being an alternating sport, play phases and recovery breaks, it offers a wide variety of movements that not only contributes to developing multiple motor skills, all parts of the body are involved, but increases the child's interest in play. The risk of incurring in injury is not higher than that of children who play football, and for any injuries the Health Center is equipping itself for first aid interventions.

Finally, the city of Parabiago has started the twinning process with the city of Sumbawanga, the provincial capital of Mvimwa and this aspect could be enabling.

Basketball equally is a particularly aggregating sport, easy to start and for this reason already practiced and much loved in Africa. It is chosen as a vehicle tool to engage, mobilize and attract young people and can be used as a means to promote life skills education in degraded areas of Africa. Particular attention will be paid to gender equality and the direct involvement of young people in the activities.

To implement this project there is the need of coaches, a field 28x15 meters and two baskets. There are 2 possible typologies of basketball matches, the 5 vs 5, that is the most known, but also the 3 vs 3 recently added as Olympic sport. The real challenge is to bring basketball to rural areas, offering opportunities to young disabled people as well.

This specific project was proposed directly by me and for this reason I am particularly fond of it. I think I have all the skills and knowledge necessary to make it happen and I very much hope to be able to implement and complete it, just after finishing the Mvimwa Rehabilitation Centre project.

It is also being considered to create the possibility of offering sport for self-defense. Sports activities useful to mitigate risk factors, a plague strongly present in African rural contexts, in terms of mistreatment and sexual violence.

3.2.9 Mama Mwanga

The Mama Mwanga initiative aims to professionally qualify women in the rural area by training and initiating them to the activity of midwives in their rural village, to assist pregnant women and calving women, as well as their children, when they cannot reach the health facilities.

The project is related to the structural improvement of the maternity ward of the Mvimwa dispensary, the educational kitchens made available, as well as the recently started analysis laboratory and telemedicine system. None the less Mama Mwanga will have a key role in the phase of prevention and early diagnosis thought to complete the project of disabled children in the rehabilitation centre.

The experience of the young midwives will be acquired through a period of on the job training at the Mvimwa Health Centre, enriched with specific training interventions in the classroom and literature in local language.

The training projects concern the prevention of risks related to pregnancy, the management of childbirth and postpartum, the growth of children, so that nutrition, production of "Pappa di Parma" and observation of health factors, as well as basic principles in the field of personal and housing hygiene.

Mama Mwanga is also assigned tasks to intercept and prevent possible pathologies of infants and children as motor difficulties or cognitive delays, and, for less serious cases, will be educated to use useful tools to help children, in particular the game enabling specific movements, remaining in their rural village.

As for the topics covered Mama Mwanga will be instructed to avoid:

- malnutrition of the mother,
- poor management of pregnancy and especially childbirth,
- exposure of the newborn and child to both malnutrition and inadequate environmental supervision (head trauma or other parts of the body from falls, exposure to infections),
- delays in dealing with skeletal malformations,
- delays in neuromotor and language development stages,

- delays in the diagnosis of hearing and vision disorders,
- delays in the diagnosis of epileptic phenomena and related pharmacological treatment.

Mama Mwanga also in her village could have the opportunity to create a zone for the development of psychomotricity. For all children who have psychomotor deficits and who are awkward in movements, an area will be created used with games and paths for the development of psychomotricity.

4 ANALYSIS OF THE CONTEXT: TANZANIA

This chapter is dedicated to Tanzania, with the aim of creating a general picture of the country, from the demographic, cultural, political and health point of view. In particular the demographic, political and cultural aspects are analysed in the first part, then the focus turns into health information. In the second part information are highlighted on health care systems and health statistics, instead the topics of the third are main diseases and causes of death.

This was part of the work done in phase 1 of the project, the research. In this phase a great deal of research has been done to focus precisely on the context in which we are going to operate.

4.1 *TANZANIA*

Figure 5 - Tanzania

The United Republic of Tanzania is constituted by a continental section, Tanganyca, and by a group of islands in the Indian Ocean including Zanzibar, Mafia and Pemba.

The territory borders are: North-West with Rwanda and Burundi, North with Uganda and Kenya, South with Mozambique, South-West with Zambia and Malawi and West with the Democratic Republic of Congo.

It lies East on the Indian Ocean, where the islands of Pemba are found at a short distance from the northern coast, while Zanzibar is more towards north, and in the south the island of Mafia with other smaller islands are found; the federation also includes large parts of lakes Victoria (North), Tanganyca (West) and Malawi (SouthWest).

The capital of the federation is Dodoma, located in the centre of Tanzania, seat of Parliament and administrative centre, while Dar Es Salaam, capital until 1973 which is located on the coast, remains the largest urban, commercial and industrial centre of the country.

4.1.1 Physical Characteristics

Figure 6 - Map of Tanzania

The territory of Tanzania consists mainly of highlands located at various heights between 1000 and 2000 meters above sea level, with a mountainous system of no great elevation, hill and depressions that contain some lake basins (Rukwa, Manyara, Eyasi, Natron). Heights are dominated by imposing volcanic formations, among which the outstanding

complex of Kilimanjaro (5895 metres) in the North-East and a little more towards West, the Ngorongoro.

The climate of Tanzania is tropical, despite the country, is located in the equatorial band between 1º and 11º lats. S, alternate seasons dominate everywhere except for the extreme northern section. The alternate seasons are regulated by the trade winds and by the monsoons coming from the Indian ocean. The rainy season of the southern winter is fundamentally due to the trade winds (with maximum of precipitations between March and May), while the monsoons are responsible of a second rainy season between October and December. Dry or with lower precipitations are the intermediary seasons between June and September and between January and February.

This last period also records the maximum thermal values, that obviously change passing from the coast to the more elevated internal area, mitigated by the altitude (in Dar es Salaam the average of January is of 28 ºC while in Tabora, situated at 1265 meters, is of 22 ºC); the annual thermal excursions in great part of the country are quite narrow (during the southern winter, in the previously quoted locations, the average temperatures are 23 ºC and 21 ºC), while on the highland the thermal difference, between day and night, can also reach 10 ºC. The temperatures related to the percentages of the atmospheric humidity, that can be 70-75% at the base of the reliefs generating unpleasant air, while it is reduced in the inner uplands (55-60%), so much that the air relatively dry and the clear sky make these areas a region among the healthiest of the whole Africa.

The coast records abundant rains, that range around 1100 mm annual in Dar Es Salaam (1500 mm in Zanzibar); on the highlands the quantity of precipitations is variable depending on the altitude and the exposure. This variation of precipitations, often very marked (between wet area and arid plains can average between 1200 mm to 600 mm annual) besides determining a clear environmental distinction it has determined human activities and even ethnic distribution.

4.1.2 Demographic and religious characteristics

From an ethnic point of view, the population of Tanzania is predominantly constituted by groups called bantu, whom established themselves in the country from the very beginning of 1° Millennium b.C. they overlapped the native Khoisanide, of which small residual groups still remain. In the northern regions there are Ethiopian and Niloto-Camitic (Masai)

elements, while along the coastline, where the Swahilis predominate, we still find the effects of some commercial penetrations like Arabic, European and Indian.

Demographic growth had a steeply rise rhythms in the 20° century, when the population increased from 5 million inhabitants in 1935 to the 34,5 million recorded in 2002. The annual growth rate, which until the 1990s was maintained around 2, 8%, tends to decrease (2.04% in 2009). The United Nations estimate Tanzania's 2016 population at 55.57 million.

Average density (43,3 inhabitants/km2) has little meaning, because of the irregular distribution. The population, in fact, is grouped in the coastal plain, on the highlands that surround the Kilimanjaro and along the great roads and railway that connect the port of Dar es Salaam to the great lakes which correspond, for the most part, to the ancient caravan routes, while vast inland areas are almost completely depopulated.

Rural settlement is predominantly in traditional villages, except for the coast line. The urban population represents little more than 25% of the total one, with an only great concentration (Dar es Salaam).

The urban network of the internal regions is exclusively based on the communication axes: this is the case of the new capital, Dodoma, whose role was to rebalance the weight of the coast line in terms of settlement and political power. The other centres do not go beyond commercial and administrative functions.

Concerning religion, data cannot be considered completely truthful, as may rural Tanzanians adhere to elements of their indigenous religious practice. Anyway following the data the most practiced religions are the Christian (almost 6 million Catholics) and the Muslim (clearly prevalent in Zanzibar), each with about 1/3 of the population; furthermore, there are animalist cults and the presence of Hinduism is also substantial.

Swahili and English represent the two official languages of Tanzania. The former is the national language, coming from the composition of different Bantu dialects and Arabic. It is also one of the six official language of The African Union. Being historically linked to maritime trade, it is also diffused in some communities outside Africa. The latter is spoken at higher levels of education and widely used in government offices. Beyond Swahili, others African idioms come from the tradition of the different ethnic groups.

4.1.3 History

At the beginning of the 2nd millennium A.D. on the coasts of Tanzania on the Indian Ocean, Persian and Arab commercial settlements began to emerge.

The cultural interchange between Arabs and Bantu contributed to a large extent to form the present day's culture of the region, and it deeply influenced the Swahili language, today official language of Tanzania.

The trade of resources coming from the African inland (ivory, gold and later also slaves) allowed the settlements Arab-Persian to bloom, turning into real cities.

The relationships between Bantu and Arabs kept on being determinants for the East Tanzania coast for most of the millennium. In 1840 Zanzibar became capital of a powerful sultanate, tied up with the Oman. Arabs brought in oriental Africa their culture, alphabet, literature, Islam and cultivations such as cloves.

Toward the beginning of the XVI century, the Europeans, in particularly the Portugueses, tried a first colonization on the oriental coast of today's Tanzania, being sent away then by the Arabs; the interest of Europe was renewed only toward the XIX century. The good relationships between the sultanate of Zanzibar and Europe allowed German explorers, British and other European powers to give life to a series of exploratory missions in the inside area of African starting from the oriental coast.

In 1848 the German Johannes Rebmann was the first European to see the Kilimanjaro; Richard Francis Burton and John Speke reached the shores of Lake Tanganyika. During this period David Livingstone undertook his famous exploration in the search of the sources of the Nile. Toward the end of the XIX century the different European powers began to consolidate their own positions in the area in colonial optics. In 1884 the German Karl Peters formally convinced different tribes of the Great Lakes region to accept the authority of Germany and after the 1885 Berlin Conference today's continental Tanzania (together with Rwanda and Burundi) became German East Africa. In 1890 the Treaty of Helgoland-Zanzibar was signed, so that Zanzibar became British protectorate. The German administration brought a period of great development, building infrastructures and introducing new types and new techniques of cultivation; at the same time, it was also extremely rigid towards the local population, repressing in the blood, between the end of the XIX and the beginning of the XX century, several attempts of insurrection. At the end of the First World War, German East Africa was occupied by Great Britain. Then when the great war ends, League of Nations assigned to the United Kingdom a large part of the ex German East Africa renamed Tanganyika.

The British Order was turned into fiduciary administration in 1946. After the Second World War, the process would have led to independence began. Among the principal actors of this trial, was the political movement named Tanganyika African National Union (TANU), founded by Julius Nyerere. Then in 1961 the Tanganyika obtained its independence from the United Kingdom under the guide of the TANU of Nyerere. The Tanganyika became republic and entered the Commonwealth in 1962. In 1963 also, Zanzibar obtained its independence and the following year the TANU and Afro-Shirazi Party (ASP), the party of government of Zanzibar, decided to unify the respective countries in a federal republic giving life to today's United Republic of Tanzania. The name "Tanzania" is a word created by the merging of "Tanganyika" and "Zanzibar". The successes and the failures of Tanzania in the post-independence era are related to the figure of Julius Nyerere, who ruled Tanzania until 1985. In his country he continues to be remembered with extreme respect and is still called "Mwalimu", which means "teacher". After reaching their independence, many inhabitants of Tanzania lived scattered in the country organized in small communities.

This situation made it difficult for the government to distribute services such as medical clinics and schools and organize effective agricultural projects. In 1967, Nyerere undertook a policy that he called "villagization".

The villager dwellers were encouraged to form the Ujamaas (family units), villages and small farms. The project reached worthy results in the mid-seventies. In 1975 Nyerere decided to replace all the people that had not taken part to the initial project. At the end of the year, 65% of the inhabitants of the countryside lived inside the Ujamaas.

In many areas, the water supply was insufficient to support the needs of an entire village and the resulting chaos, further worsened by one of Tanzania's worst droughts, which put an end to a further expansion of the project.

The Ujamaas are often referred to as a disaster because the desired results were not achieved, but they were a valid tool to improve the schooling and the health care of the citizens. Around the end of the seventies the Tanzanian economy went into crisis due to many concurrent factors: drought, Ujamaas, prices increase, closing of the border with Kenya, lack of international aid, excess of bureaucracy and the diffused corruption inside the institutions. After his re-election in 1980 Nyerere announced that he would retire at the end of the five-year term. In 1985, Ali Hassan Mwinyi assumed his place as Prime Minister. Until 1990 Nyerere remained President of the Chama Cha Mapinduzi (CCM), the party that was formed when TANU joined the ASP of Zanzibar in 1975.

Under President A. H. Mwinyi, Tanzania turned away from socialism. In 1986 to promote the country's renewal, much work was done to improve the three-year Economic Recovery Plan Project jointly with the IMF, the International Monetary Found. This also included the liberalization of the exchange rate and incentives for private companies. Since then, Tanzania has achieved an annual growth of 4%.

4.1.4 Economic characteristics

Today, after 50 years of independence, Africa still suffers from the strong tribal opposition present at the beginning. Tanzania is still one of the least developed countries in the world.

The economic situation of Tanzania has certainly improved on average since the first years of independence, just as the level of knowledge and health care. The economic stability and policies of this country are an excellent basis for future development.

Tanzania experiences a political and economic stability and has access to a considerable amount of natural resources. The economy is growing on an average of 7%, however this does not affect the general indigence of the country and in inland where 75% of the population lives.

In spite of significant changes that have occurred during the last 20 years of economic liberalization, Tanzania remains an agricultural country. The agriculture represents one third of GDP, Gross Domestic Product, of the Nation. It employs three-quarters of the country workforce and produces the vast majority of exports goods.

Tanzanian agriculture is still inefficient and not up to date, except in some limited areas. During the last years, the economic growth has been driven by sectors such as construction, transports, communications and financial services, linked to the growth of Dar es Salaam and other major cities as well as the modernization of the economy and the realization of important infrastructural projects.

In 2017, according to official NBS data, the economy grew by 7.1%, slightly accelerating compared to 7% in 2016. The most dynamic sectors of the economy were extraction, followed by transport, communications and constructions.

The manufacturing industry has scored a good result with a 7,1%, while the basic sectors (agriculture, breeding, fishing and forests) have grown only 3,6%.

The growth of the extraction sector is driven by natural gas, diamonds and coal. The data concerning transport appears to be due to a resumption of transit traffic in the port of Dar

es Salaam. The constructions represent a strong growing, component, increased from 7,9% in 2007 to the actual 15%, thanks to the government decisions managed during the last ten years.

In during 2007 the construction industry has benefitted by some government orders for the construction of bridges, roads, Dar es Salaam-Great Lakes central railway and residential building.

The growing sectors are traditional ones: food processing, chemicals and cement, wood and paper products.

More crucial is the situation of the primary sector, which still represents 30.1% of GDP. Tanzania was rated by the UN under the Development Program (2010), at the 152th place for Human Development Index (ISU), among the nations at low ISU.

Geographical and climatic conditions limit the cultivated fields to the 4% of the territory, with 1,8 million cultivated hectares during the humid short season and 7 million cultivated hectares during the humid long season. In 2017 rains have been more regular, allowing an increase of the agricultural production (+3,7% in comparison to the +1,4% of 2016) especially for large-scale food products such as corn, sorghum, beans and potatoes. Vice versa, breeding and fishing were decreasing slightly or remaining constant compared to the previous year.

Differently in respect to other African countries, Tanzania does not depend on a single product and has a investments, while serious problems can be created to agriculture and to hydroelectric energy due to the fluctuations of the climate.

4.2 *HEALTHCARE SYSTEM*

Tanzania focused its development strategies on enhancing the social equality of its citizens. Increase the level of health services is essential to increase the quality of life, and to build a solid country. However, the many socio-economic challenges the Government still have to face makes difficult to enforce the healthcare system of the country.

In this view, Tanzania established “The Tanzania Development Vision 2025” in 1995, with the vision that aims to reach a good quality of life for the citizens and identifies in the healthcare sector the main component.

Specifically, the strategy shows five attributes on which Tanzania of 2025 will be based on:

- High quality livelihood: creation of wealth and an equal and free distribution of it. By that year, racial and gender imbalances will have been regressed.
- Peace, stability and Unity: nation enjoying peace, political stability, nation unity and social cohesion in a democratic environment.
- Good Governance: culture of accountability, rewarding good performances and reducing corruption.
- A well education and learning society: enhance the quality of education to be able to respond to development challenges and being able to compete both nationally and internationally.
- A strong and competitive economy: create a resilient and competitive economy to adapt itself to market changing and technological conditions.

Tanzania also created The Second Five Year Development Plan (FYDP II) 2016/17–2020/21: "Nurturing Industrialization for Economic Transformation and Human Development". this is an integration of the Five-Year Development Plan (FYDP) and the National Strategy for Growth and Reduction of Poverty. Mainly focused on growth and transformation and poverty reduction, outlines new intervention to industrialize the country.

The plan, built on three pillars, industrialization, human development and implementation effectiveness, aspires to:

- Build a base for converting Tanzania into a semi-industrialized nation by 2025.
- Accelerate poverty-reducing economic growth and inclusive.
- Improve quality of life and human wellbeing.
- Foster development of self-propelling domestic productive and exporting capacities.
- Promote requisite industrial human skills, production and trade management, operations, and quality assurance.
- Consolidate Tanzania's strategic geographical location through improved environment of doing business to position itself as a regional trade.
- Foster and strengthen plan implementation effectiveness, including prioritization, sequencing, integration and alignment of interventions.
- Emphasize the role of local actors in planning and implementation.

- Assimilate global and regional solidarity agreements, specifically SDGs with the aim of mainstreaming them into the national development planning and implementation frameworks.

4.2.1 Primary health care

As other many African countries, Tanzania's healthcare system is based on the concept of Primary health care (PHC).

Uniced and WHO, in the report "A vision for primary health care in the 21st century: Towards UHC and the SDGs" of 2018 defined that "PHC is a whole-of-society approach to health that aims at ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people's needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to people's everyday environment."

The definition incorporates three related components:

1. Satisfy people's health needs through comprehensive lifelong promoting, protective, preventive, curative, rehabilitative and palliative care, giving strategic priority to key health services targeting individuals and families through primary and population care through the public health functions as a centre elements of integrated health services.
2. Systematically address the broader determinants of health (including social, economic and environmental factors, as well as individual characteristics and behaviours) through evidence-based policies and actions across all sectors.
3. Enable individuals, families and communities to optimize their health, as advocates of policies that promote and protect health and well-being, as co-developers of health and social services, and as self-helpers and caregivers.

PHC proved to be an efficient and effective approach to improve people health and well-being.

In fact, the continuous world challenges, due to economic, environmental, technological and demographic changes, are affecting both health and well-being. PHC allows to consider a wide range of stakeholders at national and sub-national levels to draw strategies able to respond to these challenges.

Moreover, only with a strong emphasis on PHC can be achieved the health-related SDGs.

In reality the realization is challenging. Five areas has been identified as barriers to success for improving PHC services.

1. Public expenditure on PHC: health financing faces many challenges. The main source of finance comes from external donors, while the level of national expenditure in this sector is still too low. This point will be better explained in next paragraph.
2. Human resources for health: not only the number of medical workers, especially the clinical ones, is low compared to the population, but also the existing one is maldistributed. Many staff prefer to work in urban rather than rural areas due to the poor working and living environment in the latter.
3. Availability of medicine: as for medical personnel, the availability of key medicines remains low.
4. Funding of medical supplies: connected to the lack of improvement of funding for medical supplies.
5. Public-private partnership: the concept is ill understood and the definition of public-private partnership in the health and social welfare context differs respect to the commercial sector.

4.2.2 Public/private structure levels of the healthcare system

Health services are delivered following a decentralized system, that falls into three functional levels: National, Regional and District; in addition, a zonal level, similar to the national one. Each district in furthermore divided into divisions, wards, villages and "vitongoji/mitaa" that in Swahili means neighbourhoods and streets.

The structure follows a pyramidal referral system, where each level provides different services.

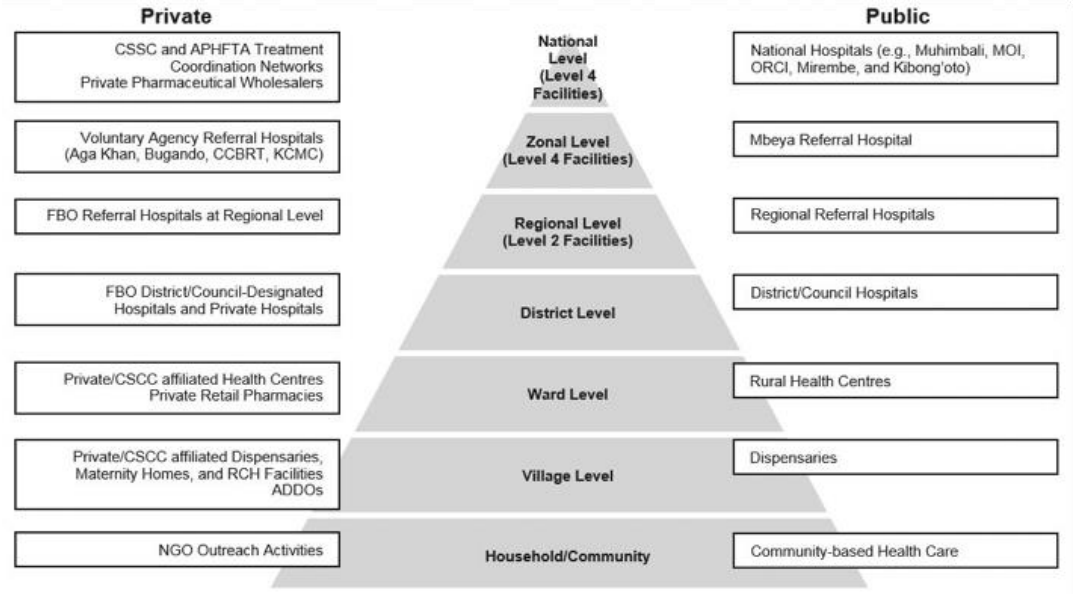

Figure 7 - pyramidal referral system of the healthcare sector in Tanzania

At each level both public and private entities are in charge of providing health services by combining efforts in some instances. Even if is present a private sector, is still the Ministry of Health to regulate the establishment of health facilities and services.

Considering the main three level, the first is the district level. Communities-based health activities are in charge of promotion and prevention to the families in villages, covering an average population of 10,000. Dispensaries and health centres provide preventive and curative services. The difference between this two facilities is that the dispensaries just provides drugs and cares while the health centres can also admit patients. The range is slightly broader, with an average population of 50,000.

Lastly, council hospitals provide health care to referred patients and basic surgical services for about 250,000 people. At the second level, regional referral hospitals are able to provide specialist medical care.

To conclude, zonal and national hospital offer advanced medical care and training courses for medical, paramedical and nurses.

4.2.3 Financing and accessibility of healthcare services

Healthcare services are mainly financed by the Government, with some tax-based funds through local government council tax collection and other earnings but is also very frequent the involvement and participation of voluntary communities.

Over the decades, there has been an increase in the health budget, especially thanks to the reforms actuated in the past years. Health spending US$ per capita moved from 12,6 in 2000 to 36,8 in 2018 (Global Health Expenditure database).

However, most of the funds still are coming from development partners, with an increase of donor dependence to fund the primary health care of the country.

Regardless of the context within which health care has to occur, fundamental to ensuring the health of the nation is the availability of appropriate numbers and quality of human resources for health.

The availability and accessibility of services varies depending on the geographical location. In particular, rural and hard to reach areas are more disadvantages compared to urban areas. An average of 66% of the population live within five kilometres of a health service, moving from 25% in Kagera region to 100% in Dar Es Salaam. Even if the number of infrastructures is increasing, only the 70% are able to provide health services.

4.2.4 Vaccinations

On average in the whole country, 75% of children aged 12 to 23 months receive all basic vaccinations:

- one dose of BCG and measles
- three doses of PTD/pentavalent and polio.

About 2% of children between the ages of 12 and 23 months do not receive any vaccine.

The likelihood of children being vaccinated increases with the wealth of families, from 65% of children in the poorest families to 83% in the richest families. In addition, this probability also increases with the education of the mother. Children in urban areas are more likely to be vaccinated than those in rural areas. Data from United Republic of Tanzania, 2015-16, Tanzania Demographic and Health Survey and Malaria Indicator Survey.

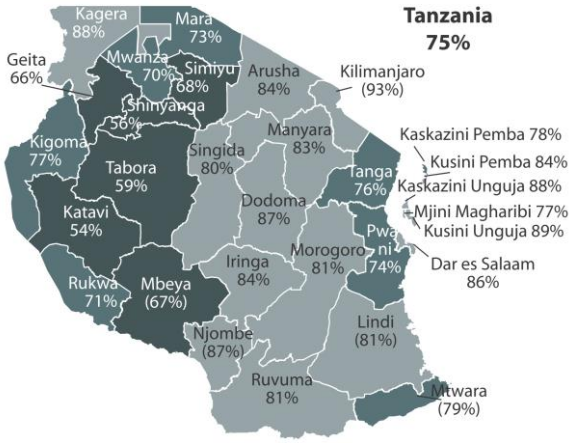

Figure 8 - Vaccination coverage per region.

Percentage of children 12-23 years old with all basic vaccination

According to TDHS-MIS 2015-16, half of the children aged 12 to 23 months received all age-appropriate vaccinations, eight basic vaccinations plus two doses of rotavirus vaccine and three doses of pneumococcal vaccine. Coverage varies according to economic status: from 35% of children in the poorest families to 76% in the richest families.

4.3 *MAIN DISEASES AND CAUSES OF DEATH*

According to the Global Burden of Disease Study, the main diseases, which also represent the main causes of death in Tanzania, are neonatal disorders, lower respiratory infect, HIV/AIDS, stroke, tuberculosis, ischemic heart disease and malaria. Based on their impact as cause of death, they are presented below.

At the end is also reported a chapter on the malnutrition, it is not a real cause of death, but it is a risk factor that can be encountered in the majority of the patients.

4.3.1 Neonatal disorders

The first cause of death in Tanzania is represented by neonatal disorders. They are referring to the disturbance of normal state of body, organs and abnormal function of a new-born. In fact, the mortality trend under-1 age group, even if is decreasing, is still one of the highest in Africa. Respect to 1990, when the value registered was 96.6 deaths for 1’000 live births, in 2019 was 40.4.

Among the most widespread diseases there are about 4% of children under the age of 5 are sick with coughing and rapid breathing, symptoms of acute respiratory infection. Of these children only 55% are taken to health facilities and only 40% receive antibiotics.

12% of children under 5 years of age are affected by diarrhea; less than half (43%) are taken to a healthcare facility

4.3.2 Lower respiratory infect

Lower respiratory tract infections, second cause of death, are any infections in the lungs or below the voice box. It usually refers to pneumonia, but can also consider other infections such as bronchitis, lung abscess and influenza. They are affecting typically babies, infants and elderly adults. As said before there are about 4% of children under the age of 5 are sick with coughing and rapid breathing, symptoms of acute respiratory infection.

4.3.3 HIV/AIDS

HIV (Human Immunodeficiency Virus) is classified as a retrovirus because it endowed with the reverse transcriptase enzyme, which allows the transcription of DNA and RNA.

It has been identified for the first time to the beginnings of the years '80 from Luc Montagnier and Robert Gallo. These researchers isolated and characterized some retroviruses identifying them as potential etiologic agents of AIDS. HIV-1 and HIV-2 viruses are known, with different geographical distribution: the first one is more prevalent and is the cause of pandemic, while the second is found mainly in the central-western area of Africa. Infected lymphocytes suffer alterations and lead to AIDS over time.

AIDS (Acquired Immune Deficiency Syndrome), caused by the HIV virus, is a complex of clinical manifestations resulting from the gradual disappearance of Thelper $CD4^+$ lymphocytes (K. A. Sepkowitz., 2001).

Initially the infected subject is asymptomatic and is a simple carrier, only after a long time the patient will evidence the real illness caused by a serious deficiency of the immune system. In the absence of appropriate therapy, AIDS can lead to death.

The timing of manifestation depends on various factors: host susceptibility, coinfections etc. When many viruses have infected a large number of lymphocytes, the consequence is that their number falls below 200 units. At this point the subject will be susceptible to the attack of any pathogen.

According to UNAIDS data (The Joint United Nations Program on HIV/AIDS) updated to 2017, 36.9 million people worldwide have been infected with HIV, of which only 21.7 million follow anti-retroviral therapy.

In many developing countries, especially those in Sub-Saharan Africa, the problem is still very strong. In 2017, two thirds of the world's HIV / AIDS population lived in this area.

Eastern and southern Africa remains the region most affected by the HIV epidemic, accounting for 53% of people living with HIV globally. In most cases in these regions the infection takes place through heterosexual relationships, especially women and girls continue to be disproportionately affected, it is scandalous that one in three women in the world has experienced physical or sexual violence.

As far as mortality is concerned, however, there has been a significant reduction in the number of AIDS-related deaths, in fact less than one million people die each year from AIDS-related illnesses, this was due to the use of new antiretroviral therapies, which have made it possible to transform AIDS into a chronic disease. Furthermore, three out of four people living with HIV now know their status, and it can be said with certainty that the first step in getting treatment is about the diagnosis itself.

It has been shown that the HIV virus has low contagiousness, this means that to transmit it needs a high concentration of vital viral particles. The main routes of transmission are direct sexual contact, either by blood or by a mother infected with the baby during pregnancy, childbirth or breastfeeding (vertical transmission) as blood, sperm, vaginal secretions and breast milk have the highest viral charge **(**A. Coutsoudis et al., 2004).

95% of children affected by AIDS are born of HIV-positive mothers, the infection can occur: during pregnancy (because the antibodies pass from mother to child through the placenta), during childbirth or breastfeeding. Caesarean delivery is often used to reduce the possibility of infection. It will therefore be of fundamental importance to adopt proper antiretroviral prophylaxis in HIV-positive pregnant women. This fact will reduce the possibility of infection by 30%. Antiretroviral drugs (ARVs) are highly effective for the prevention of maternal-foetal transmission of HIV.

Also if there are encouraging information about prevention and treatment of HIV in the science community, in Tanzania, due to the lack of information and drugs for prophylaxis, the situation is still dramatic.

HIV/AIDS is the third cause of death, and the most common virus present in Tanzania. According to the Tanzania national health portal, in 2020 almost 300,000 tested people,

7,900,000, resulted positive. In 2019, has been estimated that 1.64 million people are living with HIV in the country. Even if the incidence in death is decreasing, moving from the first to the third cause in the last ten years, it still represents one of the main challenges of the country.

The spread in the country is generalized, with picks among key populations and women, which then transmit the virus to their child. In 2016 UNAIDS reported, HIV prevalence for women as 5.8%, compared to 3.6% for men.

4.3.4 Stroke

Stroke, the medical condition in which poor blood flow to the brain causes cell death, is the fourth Tanzania death cause. In the last ten years the incidence of death for stroke has increased of 23,7%, reaching 13’114 or 3,61% of total deaths in 2018.

4.3.5 Tuberculosis

Fifth cause of death, and second infectious disease in the country, is tuberculosis. It is usually caused by the Mycobacterium tuberculosis bacteria. 2019 registered an incidence of 111.2 every 100’000 inhabitants and the 7,86% of the total deaths.

4.3.6 Ischemic heart disease

Ischemic heart disease, the principal component of cardiovascular diseases, also called coronary artery disease, is the term given to heart problems caused by narrowed heart (coronary) arteries that supply blood to the heart muscle. According to the latest WHO data published in 2018 Coronary Heart Disease (CHD) Deaths in Tanzania reached 23’728 or 6.58% of total deaths, which represents the 6th cause of death in the country. Age-standardized CHDs mortality rates showed higher death rates among Tanzanian men compared to women (473 versus 382 per 10,000 population).

4.3.7 Malaria

Malaria is an infection caused by the protozoan of the genus Plasmodium and is transmitted to humans by the biting of female mosquitoes of the genus Anopheles. Infected mosquitoes are called "malaria vectors" and sting mainly between sunset and sunrise. It manifests with very high fever, chills and damage to different organs, and can be deadly. Plasmodia,

through a complex series of successive stages, part of which occurs in humans and part of the mosquito, must pass from man to mosquito to complete its reproductive cycle.

The disease can be found mainly in areas with wetlands and the climate is hot-humid. Widespread today in the tropical regions. Until the first post-war period it was present in southern Europe, in Italy, in North Africa, in the Southern United States.

These Plasmodium require living in the human body, for a certain time, so to survive and reproduce and subsequently, in that of the female mosquito. This happens precisely because in the human organism the protozoan grows, while in the mosquito it reproduces itself. In most cases it is the mosquito itself which, infected by the protozoan, transfers it to the human being by pricking it. However, it is also possible that the infection is transmitted without the presence of the mosquito, as in the case of transfusions with infected blood or the use of contaminated syringes. Furthermore, during pregnancy, the disease can be transmitted from the mother to the foetus through the placenta.

In malarial illness there are three clinical stages: the stage of shivering and cold, that of fever and the stage of sweating. The patient feels a very strong cold sensation, has chills so intense as to have goose bumps and almost blue lips. The body temperature rises rapidly and is so high that it often leads him to delirious.

In the case of children affected by malaria all the symptoms described in the adult are not always present. Fever and chills may be missing. Generally, the sick child can be seized by convulsions, profuse diarrhea, weight loss and can often reach coma.

In World Malaria Report 2017, the World Health Organization (WHO) relates data on malaria in the world in 2016. Globally malaria is still present in 91 countries: the total number of cases has been estimated at around 216 million, with about 445 thousand deaths. The document underlines that although between 2010 and 2016 the incidence rate of malaria in endemic areas falls globally by 18% (from 76 to 63 cases per 1000 inhabitants), starting from 2014 the reduction rate underwent to an end and, in some countries, has even reversed its trend (a similar reversal trend was also observed for the mortality rate). About 90% of the malaria cases in the world and 91% of deaths continue to come from the WHO African Region, in particular 80% of the global weight of this disease is supported by 15 countries, all located in subAfrica -Saharan, except for one, India. So, while in the period analysed for the African Region is reported a decrease of 20%, the Southeast Asian region has recorded a decrease of 48%, and that of the Americas of 22%.

In areas of high transmission of malaria, children under the age of 5 are particularly sensitive to infection, develop severe disease and death.

More than two thirds (70%) of all malaria deaths occur, in fact, in this age group and despite the decreasing of deaths from 440 thousand in 2010 to 285 thousand in 2016, malaria remains one of the main causes of death in the child population. In sub-Saharan Africa, only 19% of malaria-affected children are still able to receive wormseed-based treatment (ACTs)

In Tanzania malaria is the seventh cause of the death., a life-threatening disease. The country is one of the ten with the highest malaria cases, especially in women and children.

Over the last years, there has been an increase in the case incidence and mortality: between 2015 and 2018, it has plateaued at between 122 to 124 per 1'000 population at risks, while deaths fell by about 4% (from 0.4 to 0.38 per 1'000 of the population at risk) during the same period.

4.3.8 Malnutrition

The theme of malnutrition is often confused with that of hunger, especially in the context of the general discourse of "fighting hunger in the world" or "feeding the world". These confusing definitions contribute to perpetuating an inadequate response to malnutrition. It is crucial to distinguish between malnutrition and hunger, as malnutrition requires a response that must go beyond food aid.

Hunger is normally defined as a deficiency in caloric intake – a person who daily consumes less calories than defined as a minimum by the United Nations High Commissioner for Refugees (UNHCR) of 2100 kilocalories is considered as a person suffering from hunger, or undernourished. The typical response to hunger is food aid that contributes to the person's daily calorie intake. Malnutrition, however, is not simply the consequence of the scarcity of food taken. It is a pathology caused mainly by the lack of essential nutrients. Most food aid is an inadequate response to malnutrition either because it provides an insufficient amount of essential nutrients or because it provides them in a way in which they are destroyed by cooking or not properly taken up by the body.

Malnutrition primarily affects children under the age of three, but children under five, adolescents, pregnant or nursing mothers, the elderly and the chronically ill (including those with HIV/AIDS and tuberculosis) are also vulnerable. Children are exposed to the risk of growth problems especially during the first two years of life, when supplemental

foods should be add to breastfeeding. Marasma and other forms of acute malnutrition often appear among children in seasonal cycles, especially during the period between harvests.

Malnutrition is defined in three ways: weight/height ratio of a reference population; brachial perimeter; presence of oedemas (swelling in the feet or face). If food deficiencies continue, children experience growth retardation (insufficient height relative to age). This is referred to as chronic malnutrition.

Malnutrition is associated with 50% of deaths in children under five year. The risk of death is particularly high for children affected by severe acute malnutrition, up to twenty times higher than in a healthy child.

In developing countries, 146 million children under the age of five are underweight, according to the definition of the weight-to-age ratio (one in four children). Sixty million children under the age of five are emaciated (almost one in ten children).

In 2019, the UNICEF published a report about UNICEF's commitment to combating malnutrition, which found that more than 200 million children in the world suffer from some form of malnutrition. According to the latest data in this report published by UNICEF, WHO and the World Bank, about 151 million children suffer from chronic malnutrition, while 50.5 million are affected by acute malnutrition.

In addition, in 2017 malnutrition was the cause of about 3 million child deaths, more than 50% of global infant mortality (5.4 million deaths per year). According to this report, the two continents that are most affected by the different forms of malnutrition are Asia and Africa; 55% of children suffering from chronic malnutrition live in Asia, 39% in Africa; always in Asia the highest percentage of children with acute malnutrition, therefore 69%, 27% in Africa. So it can be deduced that 80% of malnourished children belong to nations located in sub-Saharan Africa or South Asia. Recent studies have confirmed that in the Global South, one in 6 newborns is underweight, i.e. it weighs less than 2.5 kg at birth.

Also in Africa between 2000 and 2018, an increase in the prevalence of obese or overweight children was found by about 44%, especially in the regions of North Africa (Tunisia, Egypt, Morocco, Algeria, Libya), while in the south of the continent the phenomenon mainly concerns Botswana and Zambia.

Although globally the percentage rate of malnutrition has not undergone major changes, standing at 8.9%, with the absolute number of undernourished people that continues to grow for 5 years now due to population growth.

The total scenario of these data leads us to conclude the existence of a huge disparity at the regional level: in fact, in percentage terms, according to the UN report on food 2020, global malnutrition continues to increase, making Africa emerge in first place as the region most affected by malnutrition and most destined to be so in the future, with 19.1% of the population affected by malnutrition. This figure for Africa is more than double that of Asia (8.3%) and Latin America and the Caribbean (7.4%). Based on current trends, it is estimated that in 2030 more than half of the chronically hungry on the planet will be concentrated on the African continent.

In Tanzania the data about nutrition and malnutrition are relatively poor. According to Ministry of health of Tanzania, in 2019 the percentage of infants exclusively breastfed is 85%, going from a 98% in Kilimanjaro region, to 56% in Katavi Region and Pwani Region. In Rukwa region this values stands in a sort of average 72%.

In the whole country the portion of new-born alive underweights, and so with birth weight under 2.5kg, are 5.6%. the maximum value is registered in Lindi Region with 11.8% while the lowest is Simiyu Region and Rukwa Region with 3%.

For the underweight children instead the percentage of occurrence in Tanzania is 40.3%, going from the lowest 13.8% in Kilimanjaro Region to a scary 91% in Rukwa Region. This data show, as predictable, a dangerous situation in the poorest regions, and a little less warrying in those that are more attractive for tourism.

5 PROJEXT OF THE REHABILITATION CENTRE

As described in paragraph 3.1, the procedure to project was divided in 4 phases: research, consulting, designing and found raising. In this chapter we will go in detail in the research made, so in the first phase, but relative only to the proper aspects of rehabilitation and rehabilitations centres.

In the first part there is a description of what is precisely rehabilitation and motor rehabilitation.

In the second is reported the founding regarding the creation of rehabilitation centers. A deep focus was made on Community Based Rehabilitation (CBR), and community based rehabilitation centres because was evident that this was the best practice to implement an efficient and effective rehabilitation centre in developing countries.

5.1 *REHABILITATION*

Rehabilitation is the third pillar of the health system, alongside prevention and treatment, for the completion of activities aimed at protecting the health of citizens.

Rehabilitation is a process during which a person with disabilities is brought to achieve the best possible level of autonomy on the physical, functional, social, intellectual and relational level, with the lowest restriction of his operational choices, even within the limits of his impairment.

Rehabilitation treatment is typically recommended after an accident, trauma or injury that has impaired certain motor skills or functionality; it also has different modes of application, depending on the type and severity of the disease.

A distinction can be made between:

- rehabilitation health activities: which include evaluative, diagnostic, therapeutic interventions and other procedures aimed at overcoming, containing or minimizing disability and limitation of activities (moving, walking, talking, dressing, eating, communicating, working, etc.);
- social rehabilitation activities: actions and interventions aimed at guarantee to the disabled the maximum possible participation in social life, in order to contain the condition of disability.

Physiatry, which is the branch of medicine that deals with studying the different types of rehabilitation, recognizes these as the main ones:

- Kinesitherapy: by definition, kinesiotherapy is "therapy through movement", and therefore aims to treat the disease through movements. Performed mainly by physiotherapists and kinesiologists, it is a type of manual and individual physical rehabilitation. It aims to dissolve stiffened muscle tissues, which compromise physiological joint mobility. This type of therapy is associated with postural rehabilitation and massage therapy.
- Rehabilitation in water: this type of rehabilitation is having great success and is currently very frequently used as both pre and post-surgical therapy. The benefit of carrying out the movement while in the water is due to the decrease in the force of gravity, which allows for more delicate and less stressful movements. In addition, water offers a more gradual resistance and a consequent greater uniformity of muscle tension. This allows the muscles to gradually get used to the movement. In water therapy does not require expert swimmer skills: all exercises take place in shallow tanks.
- Functional rehabilitation: this rehabilitation has a clear objective; it is to identify and resolve movement alterations through the adjustment of dysfunctions of the musculoskeletal system. It is called functional because it tries to activate the functionality of the muscle structures that serve to stabilize the spine every time you perform movements. And stabilization serves above all not to stress the joints and thus avoid disc degenerations, arthrosis, osteophytes and other lesions on the joint structures. In this type of rehabilitation, skin stimulation or locomotion reflexes are used, but also functional exercises that evoke the positions taken by children during the first year of life.
- Postural rehabilitation: it is indicated to prevent and treat back pain first. The specialist will use personalized motor exercises to help the patient to have a greater awareness of their body and to become aware of the postures that the upper and lower limbs assume in space.
- Neurological rehabilitation or neuro-motor rehabilitation: the main goal of this therapy is that people with disabilities resulting from injuries of the nervous system can be increasingly independent and autonomous. To achieve this goal, the patient follows a multidisciplinary and comprehensive rehabilitation path that tends to improve functions, decrease symptoms and enhance the sense of well-being of the patient and his family members. This type of rehabilitation is especially indicated

for patients who have or have had spinal lesions, lesions in the brain, outcomes of stroke, Parkinson's, multiple sclerosis and polio after-effects. This therapy will be analyzed in detail in the next paragraph.

- Pelvic floor rehabilitation: in this case the physiotherapy treatment deals with the re-education of the pelvic muscles, through a series of exercises that help to become aware of this anatomical part, to improve its tone. This exercises are called "Kegel exercises". Rehabilitation consists of becoming aware with muscle contraction and relaxation of the pelvic floor; TENS therapy or biofeedback therapy can also be very useful for this purpose.

5.2 *NEURO - MOTOR REHABILITATION*

Nuero-motor Rehabilitation is aimed at the recovery of motor or neuro-motor functional abilities reduced or lost due to illness or traumatism and the maintenance and recovery of functions that are weakening during chronic diseases, especially orthopedic-traumatological, rheumatological, neurological and geriatric.

In patients, motor and neurological pathologies, including damage to the central and peripheral nervous system, can cause movement difficulties, which result in the impossibility of carrying out normal actions of daily life, such as eating, dressing, washing, getting up from a chair or walking. Neuromotor rehabilitation aims to guide the patient towards the recovery of these functions, with the aim of obtaining the best possible degree of autonomy.

The main objective of rehabilitation is, therefore, to restore in the subject a health condition, defined by the World Health Organization (WHO), as "a state of complete well-being, physical, psychic and social and not just simple absence of disease".

The taking charge of the patient to achieve such goal must be as complete as possible, allowing him to regain not only strength and precision in the performance of the motor act, but also autonomy, favoring reintegration into the social context and the recovery of residual functionality.

Usually the rehabilitation of a patient takes place in several stages. During the first meeting, the physiotherapist identifies together with the patient the limitations that most hinder the natural development of daily life (such as walking or working) and analyzes the nature of this motor impairment (lack of strength, lack of mobility, lack of balance, etc.). The physiotherapist therefore proposes a rehabilitation program, consisting mainly of specific

exercises and any passive manipulations. In the following sessions, in addition to carrying out the program, progress is constantly monitored, so that the program itself can be adapted during the work.

5.2.1 Bobath Concept

The Bobath concept is a reference rehabilitation approach in physiotherapy with regard to neuromotor rehabilitation.

This method aims to analyze the altered pattern with the "problem-solving", directing the evaluation and intervention towards subjects with functional movement disorders and postural control disorders, secondary to lesions of the central nervous system.

Following a careful examination of the residual capabilities of the subject, the aim is to implement a "proprioceptive reconditioning" that allows a control of the tone through certain postures. Further pillars of this approach can be identified in the proposal of facilitation of normal movement through the execution of straightening and balance reactions for the progression towards the recovery of motor skills and the use of inhibitory patterns of reflex activity at the base of the characteristic patterns of hypertonia.

An example of the application of this method is the "Exercise of inhibition of the hyperactive muscles of the shoulder". In this exercise the therapist positioned in front of the patient pulls the shoulder to himself, placing one hand on the shoulder blade and at the same time gives pressure to the chest with the other, in such a way as to adjust their relative position. With the patient sitting on the table, the therapist maintains the position of the patient's limb at 90° and adjusts the position of the girdle. It is important that the lower limb is flexed, with the foot pronate and the sole well fixed on the supporting floor when the elevation and extension is performed on the upper limb, so as to avoid associated reactions of spasticity.

Figure 9 - Excercise of inhibition of the hyperactive muscles of the shoulder

5.2.2 Proprioceptive Neuromuscular Facilitation – Kabath Method

The Kabath technique was born through the observation of the movements of sport and dance, in which a component of diagonality that manifests itself in the execution of rotary movements was noticed. From this finding it has been shown that in the execution of the motor act, the muscles are not activated individually, but in groups according to complex movement patterns. These patterns are primarily composed of movements that combine flexion-extension, adduction-abduction and rotation; among these movements, Kabath found the so-called "basic schemes" which constitute "the alphabet of movement".

Through the execution of these diagonal-spiral patterns it is possible to place muscle groups in maximum elongation, following certain lines of force until reaching a maximum shortening. It has been shown that maximum elongation and the achievement of maximum elasticity significantly improves the recovery of strength. According to this principle, a deficit function can be stimulated, going to activate a global complex of movement with a mechanism similar to the irradiation of reflexes. It is used especially in those pathologies that cause flaccid paralysis.

Irradiation of reflexes is a feature related to the withdrawal reflex. The withdrawal reflex (nociceptive flexion reflex or flexor withdrawal reflex) is a reflex intended to protect the body from damaging stimuli, in practice moving away from a part of the body, when a noxa, an action that brings damage or disturbance, is applied to that part of the body. The typical example is the nail sticking into the foot that create the reaction of withdraw the limb, and there is therefore a response of the flexor muscles contracting. In reality not always are the flexors that are activated, if for example a piece of burning coal is took in the hand the reflex consists in opening the hand to let it fall and then you make an extension of the fingers. The irradiation of the reflexes occurs when, applied the noxa, not only there is a reflex response in the area where it is applied, but there is also an involvement of the proximal zones to it. Going back to the previous example when you have a burning coal in your hand, you not only open your hand but also withdraw your arm.

An illustration is the scheme of adduction – intrarotation and extension of the elbow, useful to recall the global pattern of the shoulder muscles, such as the small and large pectoral. The therapist must exercise with the position of the hands a careful control of all the components of the movement, in fact with the proximal hand he applies a continuous resistance and with the distal one he guides the movement. This exercise is shown in figure 10.

Figure 10 – adduction - intrarotation and extension of the elbow

5.2.3 Cognitive Therapeutic Exercise – Perfetti Method

At the end of the nineties, the neurologist Carlo Perfetti elaborated the cognitive theory of Rehabilitation. The theoretical cornerstones of this approach allow to define rehabilitation as learning in pathological conditions, within which the body becomes a receptor surface that through movement and cognitive processes, knows the world around it. The rehabilitation intervention is implemented with the proposal of the "Cognitive Therapeutic Exercise".

In the "Exercise" the tool of the rehabilitator is identified, which has the task of structuring a suitable context for each patient in such a way that he can collect significant information. With the attribute "therapeutic" is addressed the focal elements of the affected disorder, which constitute its specific pathological. Finally, the term "cognitive", refers to those processes that allow the relationship with the outside world, such as perception, attention, memory and language.

The exercises are programmed according to the element of the specific motor that the patient must learn to control and are divided into exercises of the first, second and third degree.

- First degree exercises: the patient keeps his eyes closed and releases the motor component at the therapist's expense, in order to turn his attention to the cognitive problem. They are primarily aimed at contrasting dysfunctions related to hypertonics, such as the abnormal reaction to stretching.

- Second-degree exercises: the patient collaborates in the movement. They aim is to achieve the control of the appearance of irradiation phenomena.
- Third-degree exercises: the patient tries to organize motor strategies autonomously in order to counteract the loss of elementary patterns.

An example of a first-degree exercise is that for the dorsiflexion of the wrist: In this exercise, through the recognition of spheres with different heights below the wrist, the achievement of the prehension of objects is finalized. The exercise, as a first-degree exercise, is performed by releasing the motor component at the expense of the therapist and requiring the patient to exclude the visual channel.

5.3 *CBR – COMMUNITY BASED REHABILITATION*

CBR is a strategy within general community development for the rehabilitation, equalization of opportunities and social inclusion of all people with disabilities.

CBR is implemented through the combined efforts of people with disabilities themselves, their families, organizations and communities, and the relevant governmental and non-governmental health, education, vocational, social and other services.

The major objectives of CBR are:

1. To ensure that people with disabilities are able to maximise their physical and mental abilities, to access regular services and opportunities, and to become active contributors to the community and society at large.
2. To activate communities to promote and protect the human rights of people with disabilities through changes within the community, for example, by removing barriers to participation.

CBR programs have an overall positive and significant impact on the health, education, livelihood, social participation and empowerment of participants with disabilities, especially after some years of CBR activities. This 5 are the dimensions of the CBR Matrix presented by WHO in 2010. Each dimension has different levers to activate in order to pursue a positive impact on that dimension.

Community based rehabilitation and habilitation initiatives are currently being implemented in over 90 countries throughout the world, mostly in developing countries, to empower persons with disabilities so that they can fully enjoy their human rights and advance their status in society.

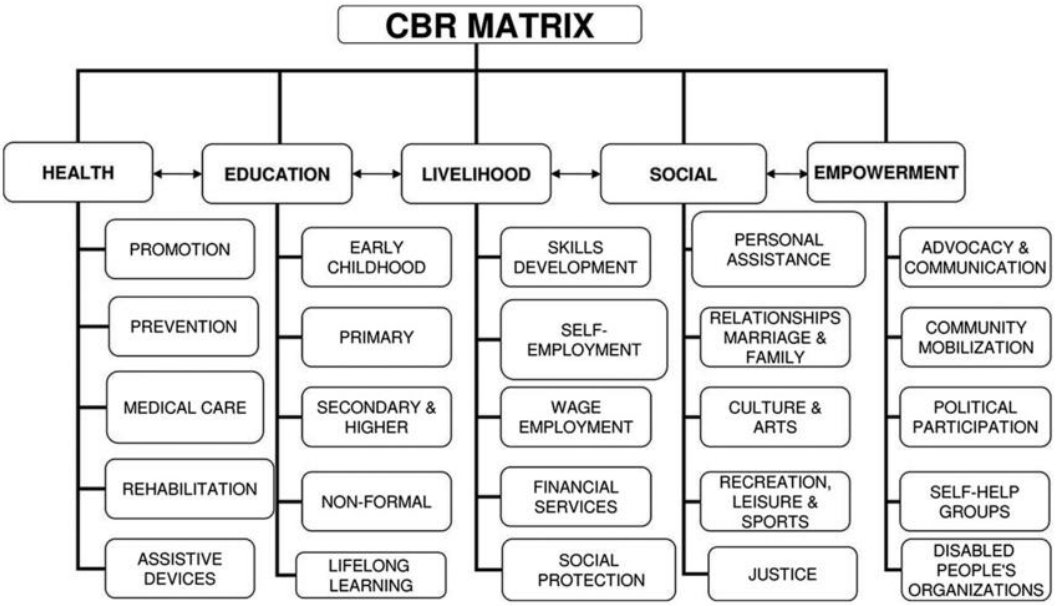

Figure 11 - CBR Matrix, WHO 2010

They are implemented through a combined effort of persons with disabilities, their families and communities and the relevant Government departments dealing with health, education, vocational training and social and other services.

The ultimate goal of community-based rehabilitation and habilitation is to facilitate community-based inclusive development by, for and with persons with disabilities and their communities.

As such, it is a comprehensive and multisectoral community-based approach that is implemented to contribute, in practical terms, at the community level, to the implementation of the Convention on the Rights of Persons with Disabilities and to support the realization of the Millennium Development Goals and other internationally agreed development goals.

With this approach, the concept of community-based inclusive development hinges on three aspects, according to which all development initiatives should:

- be community-based and inclusive of persons with disabilities;
- be centred on disabled persons and the community;
- address the needs of persons with disabilities, their families and their communities.

5.3.1 Concept of disability

CBR paradigm changes the perception of the concept of disability and rehabilitation: the emphasis placed on human rights and action to address inequalities and alleviate poverty, and on the expanding role of DPOs (Disabled People's Organizations)

Disability is an umbrella term for impairments, activity limitations, and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (WHO 2001; WHO 2011).

People with disabilities (PWD) therefore include those who have long-term physical, mental, intellectual or sensory impairments resulting from any physical or mental health conditions which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others (UN 2008).

Disability is no longer viewed as merely the result of impairment.

The social model of disability has increased awareness that environmental barriers to participation are major causes of disability. The International Classification of Functioning, Disability and Health (ICF) includes body structure and function, but also focuses on 'activities' and 'participation' from both the individual and the societal perspective.

Rehabilitation services should no longer be imposed without the consent and participation of people who are using the services. Rehabilitation is now viewed as a process in which people with disabilities or their advocates make decisions about what services they need to enhance participation. Professionals who provide rehabilitation services have the responsibility to provide relevant information to people with disabilities so that they can make informed decisions regarding what is appropriate for them.

5.3.2 Community Base Rehabilitation Pillars

Living independently and being included in the community is the fundamental aim at which community based rehabilitation aims for each patient.

- Autonomy refers to the ability to live in community with little or no help from others albeit with assistive technologies
- Independence is understood as the ability to take decisions and be responsible for their consequences according to personal preferences and environmental

requirements, even if someone else's help and support is needed. The idea of independent living includes family and community support, residential support services, respite services, information and advice.

The need for support services is determined by individual functioning, health conditions, stage of life cycle and environmental factors.

5.3.3 Accessibility as a barrier to independent living

Accessibility must be framed in terms of not only physical access, but all barriers that either restrict or prevent persons with disabilities from participating in society, including access to information and attitudinal behaviors.

Access must be viewed as multidimensional and cross cutting, which spans a broad range of support and services including access to education, employment, health, family, social and recreational participation.

- Physical environment is often a barrier to the physical mobility of persons with disabilities, in particular the absence of adequate transportation, ramps and special parking facilities.
- Architecture design often serve to restrict access to buildings, private and public spaces and services, including courts of law, police stations and polling stations.

Based on the results of needs assessments and resource availability, community-based rehabilitation and rehabilitation programmes often focus on three specific priorities:

1. promoting community-based, inclusive development that assists in mainstreaming disability in key development initiatives and, in particular, poverty reduction;
2. supporting stakeholders to meet the basic needs and enhance the quality of life of persons with disabilities and their families by improving access to the health, education, livelihood and social sectors;
3. encouraging stakeholders to facilitate the empowerment of persons with disabilities and their families by promoting their inclusion and participation in development and decision-making processes.

6 MVIMWA REHABILITATION CENTRE

In this chapter all the components of the Mvimwa Rehabilitation Centre, will be explained in detail as they were designed according to the project. This stage of description takes place in the middle of phase 3, i.e. "designing phase".

For each specific aspect of the project, the possible alternatives have been studied and verified during the process and it will be described here how the team decided to face and implement them.

Disability, in different areas of the rural context, is a drama in the drama due to the scarcity and inaccessibility of infrastructure and cultural barriers still rooted in some territories, which lead families to marginalize or even abandon children. Usually, in fact, children with disabilities in the poorest areas of Tanzania are seen as an unbearable burden for families who cannot afford to have an extra mouth to feed and that cannot help them in any way in the future, they are therefore abandoned to their fateful fate.

The care center for the disabled is part of the wider expansion project of the Health Center. A "holistic" principle will be applied to the treatment center for the disabled that will embrace prevention, the clinical, therapeutic, physical, psychological-educational aspect (including family members) but also that of work, play and, in perspective, sport and reintegration into the community. The reintegration is intended both in education perspective and in working perspective. To achieve this goal, the guidelines of the CBR, Community Based Rehabilitation, described in detail in chapter 5.3, will be followed.

In the coming years, priority will be given to consolidating the processes for the management of motor disability and related rehabilitation, as well as the stimulation and rehabilitation of cognitive functions.

There are 450 children with physical disabilities who attend public primary schools in the territories of influence of the Monastery (Nkasi and Sumbawanga districts), while in secondary schools there are 70, a number greatly reduced even for abandonment of studies.

In fact, the data of children who do not attend compulsory schooling, a phenomenon still present in rural areas, are not available; this drastic reduction, however dramatic, is therefore not only linked to the fatality of disabling diseases in this age group but also to the abandonment of studies.

It is difficult to have clear data on children not collected in schools but in villages, so that it is necessary to take into account a greater number of possible patients who will need treatment.

In the territory of Rukwa there are no specialized centers, and the only motor rehabilitation facilities, which are not very efficient, are in the Regional Hospital of Sumbawanga. The recruitment of physiotherapists is critical, as there are very few professional figures throughout the country.

Throughout Tanzania the graduated are about 100 students a year. To make a comparison Italy has a similar population (about 60 million inhabitants) and an area that is less than a third, but every year 1,200 physiotherapists graduate in Italy.

The nearest qualified center, which best responds to our model, is located in Mbeya, created by the Italian association Comunità Solidali Nel Mondo ONLUS, 322 km from Sumbawanga and 380 km from the Monastery of Mvimwa, home of the dispensary. To have an idea of the time required to go there, assuming to have a car seven hours are needed, and an unspecified and unpredictable time if the patient has to move by public transport and on foot.

For the execution of the project we have made contact with OVCI La Nostra Famiglia and Comunità Solidali Nel Mondo ONLUS. Comunità Solidali Nel Mondo ONLUS has already opened three centers similar to ours, two of which in Tanzania, one in the Dar Es Salaam area and the second one it's the already mentioned in Mbeya. The request of interview had the aim to have a best practice to follow and information about the incidence of cases, which are data very difficult to find in rural areas like ours, and the major critical issues encountered. The information provided by these talks made in the phase of consulting are reported in paragraph 3.1.2.

The construction of this center is very important given the absence of similar facilities in the area and the large number of possible patients, who at the moment have little hope of being treated.

At the time of writing the thesis, the project team completed successfully the design part and started doing the budgeting of all the aspects of the project. So that the budgeting cannot be reported, but in the short future also this part will be completed.

Same situation must be considered for the found raising phase. Even this phase has not yet been implemented, at the time I am writing the thesis, but it is planned for the near future. Only some aspects have been defined and some events of presentation of the project have been organized with partners and with entrepreneurs who may be interested in participating or in helping the association economically.

6.1 *STRUCTURE OF MVIMWA REHABILITATION CENTRE PROJECT*

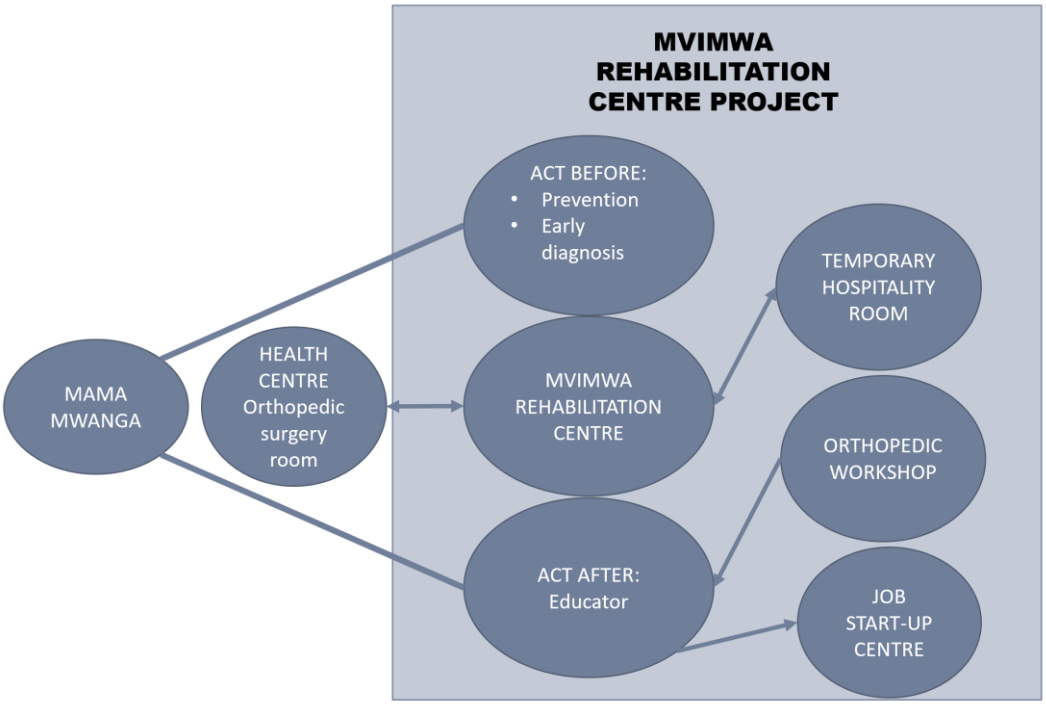

Figure 12 - Mvimwa Rehabilitation Centre Project structure

The whole project can be divided into 3 areas of intervention:

- the first concerns all the activities that were thought out before there was an actual need for the patient to enter the center. We will call this area "act before". These are prevention and early diagnosis. In particular we talk about children, most of the prevention work can be done in the period of gestation, in the stage of childbirth and in the care and nutrition of the baby. In the same way in this phase of the first months of life through the control of different signals it is possible to recognize disabling pathologies and intercept them early.
- The second area is that of the activities that take place within the rehabilitation center. In detail here will take place the visits, the exercises practical for rehabilitation, hospitalization and assistance. In the overall plan also the sessions with specialized professional support figures as occupational therapists and psychologists. In this area will also be addressed all patients post orthopedic surgery, that are been operated in the surgery room of the Mvimwa Health Centre. At the same time the patients visited in the rehabilitation center who need an intervention will be directed there, and then return to the center for the rehabilitation phase.

- The third area of action is the one that follows the exit of the patient from the center and will be called "act after". When the patient is discharged from the center, an educator will support him and he will have the tasks of assisting and accompanying him in everyday life, teaching him to carry out daily actions independently and to actively enter in the community and in the world of work. In the case of children and young people of school age, the educator will also have the task of placing them in the appropriate school and class according to the characteristics of the individual, instructing the teacher on how to interact with him. There is already a job start-up center at the monastery's vocational schools, which can be implemented to meet the specific needs of disabled people leaving the center and who will have to be included in the world of work. Precisely for the disabled people, some production activities have already been identified within the monastery complex and the health center, such as the production of soaps and creams.

The Mvimwa Rehabilitation Centre will then be assisted by 2 other structures that will complete the service of the center:

- The hostel, i.e. the temporary hospitality rooms. In these places patients will be hosted together with their carers, who are not hospitalized in the center. This space is necessary to avoid the phenomenon of abandonment, which we will talk about later, and to give the possibility to those who go to the center from distant areas, not to have to go home every day. The way can be very long in time considered the distances to be covered by foot or by public transport, not particularly efficient in the area.
- The orthopedic workshop, a laboratory will be built in which the necessary aids will be produced for the patients of the center. Flanked by the monastery's carpentry school, aids will be produced and provided to patients according to the family's financial availability, if necessary free of charge.

In next sub-chapters the areas described above will be explained in detail.

6.2 *THE REHABILITATION CENTRE*

The final perspective is to create a rehabilitation center for the recovery of patients with orthopedic problems and psycho-neuromotor diseases. The center will be flanked by a laboratory for medical aids, a temporary hospitality building and will work in direct contact with the operating room and the health center.

The primary idea of this step was to create a center in which to accommodate children with disabilities, who are usually abandoned by their family, to heal them, give them all the skills and equipment to become independent and finally help them reintroduce themselves into society. The idea then expanded to include in the same center rehabilitation aimed at treating orthopedic problems in adults, post-traumatic and to rehabilitate post-orthopedic surgery patients from the Mvimwa Health Center. Finally, once the center is in operation, staff will be instructed and trained for the treatment of psycho-neuromotor diseases, congenital and genetic syndromes.

The center will lay the foundations of the project and operation on the model of the CBR Community Based Reahabilitation, whose goal is to combat inequality and change the attitude towards people with disabilities. CBR was introduced by the World Health Organization in 1980. It is an intra-community strategy to generate development for rehabilitation, reduce poverty and equalize the opportunities and social inclusion of all people with disabilities. CBR programmes consider as a fundamental basis the improvement of the quality of life of people with disabilities through their participation within the community and society and at the same time the participation of them in the rehabilitation process. It is also based on the search for the best approach from the point of view of cost-benefit, with a view to improving the well-being of the patient with disabilities (for more details see chapter 5.3).

Precisely following this approach of maximizing the cost-benefit ratio the primary focus of our rehabilitation project is to give disabled children the opportunity to achieve independence and therefore the possibility of being an active part of life in the village, with the opportunity to work study and perform the basic actions in complete, or at least as complete as possible, autonomy. For this reason, occupational therapy plays a very important role in the center's project.

Allowing a disabled person to perform the actions necessary for daily life, such as washing, walking and eating independently, gives him the possibility of not being seen within society as a burden, an extra mouth to feed, but still a possible worker within the family group. The

fundamental idea will be to provide the disabled with the care and equipment necessary to achieve this goal.

From the physical point of view, the centre will include:

- The premises for motor rehabilitation: evaluation rooms and an area equipped for rehabilitation from orthopedic and motor problems, with educated staff, physiotherapists, occupational therapists, psychologists, social workers and health workers (CRW community rehabilitation workers).
- An area dedicated to the hospitalization of patients who need care and control. In the case of children it will be necessary that during the stay in the center a family member is always present, first of all to avoid the phenomenon of abandonment, but also to instruct the relative in the practices that will be necessary in the long term, to keep the patient in good health and that must be carried out independently once discharged and returned to their home. This area will be needed for those requiring rehabilitation cares that cannot be provided in a day-hospital and for those patients who need a 24-hour check-up.

6.2.1 Rooms for rehabilitation

The structure for motor rehabilitation will be built within block 6 of the Health Center, and will be made available to all people in charge for motor care. Block 6 will be 400 square meters and the cost is estimated at 80,000 euros.

While waiting to have the new premises, spaces have been identified that are still suitable for the purpose in the current dispensary.

Figure 13 – fully equipped rehabilitation room

The basic and fundamental figure in the center is that of the physiotherapist assisted by an occupational therapist. Because of the very low presence of these professionals in the centre most of the operations will be carried out by the so-called Community Rehabilitation Workers. CRWs are not graduate therapists, but are health figures trained to perform the specific task required. Usually they are women and they are instructed by physiotherapists and occupational therapists, to assist the patient in the rehabilitation process and in the execution of the exercises and practices necessary for his recovery.

The path within the center provides that each patient is first evaluated by physiotherapists, who create an individual and personalized rehabilitation plan based on his characteristics and needs in accordance with the support occupational therapist. The plan is then shared with CRWs who help them in carrying out the exercises.

In Tanzania for the recognition of physiotherapist there are 2 different ways, the physiotherapy degree that lasts 4 years, and physiotherapy diploma that lasts 3 years. In the initial phase of the project it would be better to have a physiotherapist who has obtained the degree, having a longer preparation he would have developed more skills.

The skills necessary to ensure the Mvimwa Rehabilitation Centre economic sustainability and ensure continuity in the motor rehabilitation processes, will be provided through training investments aimed at monks of Mvimwa Abbey who already practice the profession of doctors and nurses. In addition, the collaboration with the large health centers of the territory (the Regional Hospital of Sumbawanga and the public hospital of Namanyere in the District of Nkasi), signatories of health memoranda with the non-profit organization and the Campus Bio-Medico di Roma, will be further strengthened.

In addition, the rehabilitation centre will be recognized as an unit of the health centre and for that it can receive the public founds reserved for the health centres. The greatest critical issue for a rehabilitation centre in Tanzania is that of not being recognized by the Country as healthcare centre. In this way they are not able to make claims for reimbursements and insurance, as well as state personnel. At the moment only national health centers and dispensaries are recognized, the rehabilitation center individually is not considered as a healthcare center.

The enrollment of a novice from Mvimwa in the physiotherapy degree course at a University in Mbeya is being considered, where the Monastery also has a guest-house for religious.

The start of motor rehabilitation activities, which will necessarily be gradual, must also include follow-up programs to verify the effectiveness of the therapies.

Basic equipment for motor rehabilitation will be needed, for which Golfini Rossi ONLUS is looking for funds and donations by specialized companies that intend to enhance the contribution in their social report or become a partner of the ONLUS.

In a regime working phase of the center, a physiotherapist and an occupational therapist are needed, lined by 8 community rehabilitation workers, but in the activation phase just one physiotherapist with 4 CRW is enough.

The basic necessary equipment is even more simple: mattresses and pillows covered with leather to be washed, large pieces of sponge, easily bought locally and then cut in shapes as needed by the patient. Espaliers, parallels, walkers and postural chairs can be built by local carpenters.

More specific and expensive rehabilitation equipment can be added later to improve more and more the service and care offered by the center. For these equipment that can hardly be found or built on site, partnerships or donations from external privates favorable to the project are being considered.

Some associations have already declared themselves willing to provide us with the necessary equipment to set up the rehabilitation rooms, negotiations are underway and we are trying to arrange donations and shipments in the best possible way.

6.2.2 Temporary hospitality rooms

Temporary hospitality rooms for at least 10 disabled children and 1 family member each are provided for in block 6 of the Health Center. Children, under the guidance of a psychologist and a physiotherapist, will be able to receive health and rehabilitation care, but also attend the pre-school or primary school of the Monastery for the necessary time.

The presence of a child psychologist or neuropsychiatrist and a physiotherapist can be co-managed with Sumbawanga and Namanyere Hospitals. Active participation in the process of caring for a family member is a necessary condition to avoid abandonment and discharge of responsibility, and to train the family member in the necessary care.

Psychological care, however important it may seem given the situation, is essential as it helps the family and the community to change their point of view on the disabled. In fact, this should no longer be seen as an extra mouth to feed within the family and that can not make contributions. The vision that must be taught is that one of the CBR and of WHO, namely that disabled people must have equal rights as the able-bodied, they must not be

isolated or discriminated in any way and they must be involved in community life to the best of their ability.

The imminent settlement of the Nomadelfia Community in the territories of Mvimwa could be a further enabling factor for the temporary reception of children and their families. This profoundly Christian community has declared itself more than willing to host those who need it for the time they required for the care in the center and therefore. The possibility to stay in a neighboring area would allow them not to have to make long and difficult journeys on foot daily.

To this end, the Community of Nomadelfia has already incorporated into the architectural project of their settlement, rooms and bathrooms with the necessary facilities for the disabled.

A second temporary hospitality site for young disabled people and one family member is being evaluated in Sumbawanga, to allow them to attend secondary school and receive rehabilitation care. This second hospitality site could take advantage of the gym and rehabilitation room planned within the St. Maurus Secondary School Sports Center.

6.2.3 Workshop for medical aids

The overall project of the center includes the creation of a laboratory in which the necessary aids will be produced for the patients of the center.

At the Monastery there has been a qualified school for carpenters for years. In the training course dedicated to the profession, the teachings for the production of possible wooden aids (crutches, support seats, walkers, backrests, etc.) will be included.

The training programs (train the trainers) and the technical drawings for the production of the aids will be made available by doctors and volunteer bio-medical engineers of the Golfini Rossi ONLUS network. The aids will then be produced at the carpenters' school and will then be provided to patients according to the family's financial resources, if necessary free of charge. In the future they could also be produced to be provided other dispensaries or treatment centers.

Golfini Rossi ONLUS is looking for the project leader for this specific area, also through possible humanitarian collaboration with companies in the sector.

In these days a perspective of collaboration with Roadrunnerfoot, aleading company in the field of technologies for disabilities, has opened. The collaboration could lead to the start

at the Monastery of technological production activities, not only carpentry, aimed at giving concrete response and relief to the many disabled people present in the refugee camps from Rwanda, Uganda and Congo, hosted in the border territories of Tanzania.

6.3 *ACT BEFORE*

Two major areas of intervention will be developed to take care of the patient even before it becomes necessary his entrance in the rehabilitation center: prevention and early diagnosis.

It is clear that simply caring for the disabled, trying to restore their autonomy as much as possible, is not enought. In addition, most disabilities are consequences of bad habits during the gestation phase and during the first years of life.

There is no type of rehabilitation that can restore the quality of life to a disabled child who has lost some of it due to a someone else's mistake. Avoiding these faults as much as possible is even more relevant. That is why the "Mvimwa Rehabilitation Centre" project is not limited to operating within the center but also takes concrete actions outside, trying to disseminate knowledge and information that can save or radically improve the living conditions of future generations.

6.3.1 Prevention

For what concern the prevention, most disabling diseases of children have causes that can be found in the period of pregnancy. The genetic component is the rarest cause as well as one of the few on which we can not act effectively. The only aspect on which information can be made about to try to reduce the occurrence, is the genetic mutation as a result of children between relatives.

As for the causes of disability in pregnancy, the most frequent is malnutrition of the mother. In some developing countries there is a subsidy given by the state to pregnant women in order to reduce this phenomenon, which obviously can have serious consequences on the child. Unlikely Tanzania is not one of them at the moment.

Other causes can derive from the mother who is not healthy, if the mother is suffering from HIV for example, the child could be born with brain problems; the abuse of alcohol and drugs, which result in intellectual delays of the child; but also incorrect nutrition during pregnancy may have dramatic results. Many times these mistakes are made by mothers for

ignorance, so that an organized information path must be provided to avoid, when possible, these dangerous practices.

Parish priests and monks can easily be instructed in this regard. In fact, these already hold pre-marital courses and with the right education they could easily insert useful information into those courses to prepare the future mothers on correct practices and behaviors to be held during the gestation period.

The most frequent cause of disability, however, is damage from childbirth. Birth damage is an impairment of the function or body structure of the newborn due to an injury suffered during birth. Damage from childbirth can range from mild bruises and lacerations to permanent injuries or disabilities. The causes of birth damage vary greatly: birth damage can be caused by conditions such as hypoxic-ischemic encephalopathy and lack of oxygen to the fetus, impact trauma during childbirth, premature birth, infections or health conditions in the mother, medical negligence and more. Just one minute of postpartum hypoxia is enough to affect the future health of a newborn.

In order to reduce this serious plague, there is the necessity to create a childbirth support network. In rural areas it is rare that all women can be assisted by a doctor during the delivery, and the practice of giving birth at home is widespread. The training of obstetric staff is therefore necessary. A one-year course in the hospital may be sufficient for the education of midwife to assist the deliveries in her own village.

Midwives will be trained in the Mvimwa Health Centre, by local staff. These women will be selected one per village and will be instructed not only to supervise the births, but also to recognize possible complications and dangerous situations, so as to refer the patients in danger to the health center, before it is too late.

In fact, in the center there is the maternity and gynecology department with an adjoining operating room for the most serious cases, as well as teams of surgeons and obstetricians.

This figure will be the Mama Mwanga, related to another project explained in detail in paragraph 3.2.9 an in the next paragraph.

6.3.2 Early diagnosis

Early diagnosis is another fundamental aspect that can make a difference in cases of childhood disability. To act on this problem, there is a need for support to minimize the developmental delay.

The equipment necessary for the early diagnosis of disease related to hearing and vision, as well as motor problems, are cheap, very simple to find and use.

For the monitoring of the evolution of a child there is a scale that shows step by step the different abilities that a child must develop and the alarm bells that can indicate, beyond a certain threshold, the risk of a delay at the developmental level.

Moms can be trained for childcare and to monitor their developmental situation, but it is very complicated to train them all well enough. This gives us the possibility to insert a figure, the "Mama Mwanga", which in Swahili means "Mother Light" or "Mother who illuminates".

Mama Mwanga is a parallel project that is in developing phase for two years that aims at the formation of a woman per village, Mama Mwanga precisely, that is the one who will illuminate the growth path of young mothers and their children in the rural villages around Mvimwa.

The project aims to professionally qualify the women of the rural area by training them and starting them to the activity of midwives, to assist pregnant women and women giving birth of rural villages who cannot reach the health facilities.

Mama Mwanga is also assigned tasks to intercept and prevent possible pathologies of infants and children (malnutrition, motor difficulties, cognitive delays) and, in less serious cases, give her useful intervention tools to help them.

As for the topics covered Mama Mwanga will be instructed to avoid:

- malnutrition of the mother,
- poor management of pregnancy and especially childbirth,
- exposure of the newborn and child to both malnutrition and inadequate environmental supervision (head trauma or other parts of the body from falls, exposure to infections),
- delays in dealing with skeletal malformations,
- delays in neuromotor and language development stages,
- delays in the diagnosis of hearing and vision disorders,
- delays in the diagnosis of epileptic phenomena and related pharmacological treatment.

This figure will therefore be essential not only in the field of early diagnosis but also in that of prevention explained in the previous chapter. More detailed information about the Mama Mwanga project can be found in section 3.2.9.

6.4 *ACT AFTER*

Following the course of therapy performed in the center, the patient is not abandoned to live his own life but is supported by an educator. The latter, according to the abilities and disabilities of the individual, will accompany him in the following period, supporting him in the first phases of his reintroduction in society, in the normal path of everyday life, if necessary, making him understand what he is able to do in the community and how, according to age, he can be included in the different classes of the different schools (pre-school, primary or secondary) or help him in the steps of the job start-up center.

The job start-up centre for young people, disabled and not, is already present at the monastery's vocational schools.

Some productive activities have been identified that could easily be carried out by young people with disabilities, compatibly with the overall state of health. In particular, new courses will be activated for the production of soaps and creams, including curative, enhancing the characteristics of natural products easily available in the territory (moringa oil, papaya peel, etc.). To this end, the Faculty of Pharmacy of the University of Parma, with specific research, has developed formulas for soaps and creams for the treatment of scabies (a skin disease very frequent in rural villages).

After the courses, young disabled people will have privileged access to the world of work that the Monastery itself wants to implement through a production line of soaps for the domestic market. This evolutionary phase avails itself of the advice of Professor Pietro Canepa, professor of chemical engineering at the Università di Genova.

The design feasibility study is concluded, while the process analysis for the start-up of the activities is underway.

7 CONCLUSION AND FUTURE DEVELOPMENT

The beautiful project undertaken together with Golfini Rossi ONLUS has profoundly influenced my vision of the world and of my future work.

However, it is clear that this project, although well developed, is only in its initial stages. It is evident that a year and a half of internship work cannot be enough to complete a project of such magnitude, importance and quality. Nor can a thesis be enough to describe all the aspects around which this idea was created and will be realized.

The certainty, however, is to have started a path that could radically improve the lives of hundreds or maybe thousands of people. And it is equally certain that Mvimwa Rehabilitation Centre Project does not end with this thesis, nor even my commitment with Golfini Rossi ONLUS.

The missing phases will be completed by me or by those who will take my place in the association, following the idea of continuous and incremental improvement, on which the ONLUS has always based its initiatives.

In the first semester of 2022 the budgeting phase will be completed and also the fundraising. The effective start of the realization of the project is planned in September 2022. By this date the purchase of the requirements will be made. The agreements and the contract with the State for the provision of funds and personnel will have been signed and the research and training of local workers can begin.

The inauguration of the center is scheduled for the new year, and therefore for January 2023.

For that date it is expected that there will be the professional figures necessary for the start-up, namely a physiotherapist and 4 trained community rehabilitation workers. There will be all the necessary equipment described in the previous chapters, these will be provided through partnerships and shipped from Italy, or will be purchased on site from local producers. In specific the basic ones that will be necessary for the activation will be purchased in Tanzania and will be made with specific characteristics in wood. Later the more specialized and technologic equipment provided from Italy will be carried.

All the structures have already been built, a study has been made on the division of spaces and it has been decided which activity to dedicate them to. However, they are temporarily empty, so before the start date of the center they will have to be furnished and, if necessary, filled with the necessary equipment for the specific task of the room.

The rehabilitation rooms must therefore already be set up by the date, while the offices of the professional support figures, occupational therapist and psychologist, can be completed later.

The temporary hospitality center must be set up as soon as possible. At the inauguration date, the center may not offer hospitality to all the families of the patients, who will therefore have to go to the center every day if necessary. There will still be the possibility of hosting some patients and family members in case of strict need, in the rehabilitation center, or in the health center, or in the adjacent structures, but it would only be a temporary situation. As awareness of the effectiveness of the center in the population increases, so will the number of patients who will ask to be treated, and the arrangement previously described will no longer be sufficient. It is therefore good to consider completing the temporary hospitality premises in a short time just after the inauguration of the centre.

Parallel projects, on the other hand, will be developed later and after the start-up of the rehabilitation centre. The complete "Mvimwa Rehabilitation Centre Project" that has been described in this thesis expects to be functional in all its parts by the year after, so with the beginning of 2024.

As for the strategic organization of the center, like all the other initiatives of Golfini Rossi ONLUS, the fundamental idea is to instruct the monks or other local figures, so that the project will be self-sustainable, without the intervention of the association.

On a practical level, it has not yet been calculated how much financial commitment will be required from the ONLUS and how much will come from the State and the Monastery. But it is expected in a threshold of 3 years from the commissioning of the "Mvimwa Rehabilitation Centre" that it will be able to function autonomously, with requests of economic support only in cases of extraordinary necessity.

For the start-up and management in the early stages, as for the other projects in Mvimwa of Golfini Rossi ONLUS, Italian professional figures will be sent on site. They will support the local ones, instruct them and supervise the correct functioning of the operations.

The mechanism will be the typical of the organized workshops, in which the staff will be selected between those who work for the association and those who will be available to leave, based on the needs of specific knowledge of the topics.

In the end I am very happy with how this work has been carried out, the experience I had in Golfini Rossi ONLUS, what we achieved together and what we will achieve.

This project has taught me a lot both in terms of personal interactions and work skills.

Having the opportunity to do something concrete that will improve the lives of so many children makes me proud of my present and optimistic for my future.

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CAP 2 - INTERNATIONAL DEVELOPMENT COOPERATION AND NGOS

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ACRONYMOUS

ABBREVIATION	DESCRIPTION
AICS	Agenzia Italiana Cooperazione e Sviluppo
CBR	Community-Based Rehabilitation
CCM	Comitato Collaborazione Medica
CEI	Conferenza Episcopale Italiana
CHD	Coronary Health Disease
CHW	Community Health Workers
COPE	Cooperazione Paesi Emergenti
COVID-19	Coronavirus-19
DFID	Department for International Development
DREAM	Disease Relief through Excellent and Advanced Mean
EA	EuropeAid
FAI	Foundation Assistance Internationale
GDP	Gross Domestic Product
GHT	Global Health Telemedicine
ICT	Information and Communication Technology
IMF	International Monetary Fund
LMIC	Low-Middle Income Country
MAECI	Ministro degli Affari Esteri e Cooperazione Internazionale
NGO	Non-governmental/profit organization
OECD	Organization for Economic Co-operation and Development
OVCI	Organizzazione Volontariato per la Cooperazione Internazionale
PHC	Primary Health Care
SAM	Sever Acute Malnutrition
SDG	Sustainable development goals
UCBM	University Campus BioMedico
WHO	World Health Organization

Ringrazio la mia relatrice, la professoressa Cristina Masella, per avermi aiutato in tutto il progetto, per avermi supervisionato, affiancato e spronato nello svolgimento di questa tesi.

Ringrazio Golfini Rossi Onlus, Tiziana, Bianca, Alessandra, Silvia, e tutte le persone che ci hanno affiancati, per avermi dato la possibilità di mettere in pratica il mio progetto, aiutandomi in ogni ambito. Li ringrazio inoltre per lo stupendo lavoro che compiono ogni giorno, l'impegno e la dedizione che dimostrano, e la passione che mi hanno sempre trasmesso.

Ringrazio la mia famiglia, i miei genitori, per il loro amore per i viaggi, perché senza di loro non avrei mai potuto provare le emozioni e vivere le esperienze che mi hanno spinto a lavorare a questa tesi; li ringrazio per avermi spronato, indirizzato e supportato durante tutto il mio percorso universitario.

Ringrazio mio fratello per essere stato un supporto e uno stimolo continuo a migliorare.

Ringrazio tutti i miei amici e le mie amiche, quelli veri, che mi sono stati vicini nei momenti di difficoltà e che hanno sempre creduto in me.