

# **Chapter 1**

## **Background of the Project**

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It is generally considered that the civil war that broke out in 1992 in Bosnia and Herzegovina left the bigger damage in the Federation of Bosnia and Herzegovina (hereinafter referred to as “Federation”) than in the Republic of Srpska (hereinafter referred to as “Srpska”). However, the war resulted in numerous casualties and serious economic damage to both sides. Despite that fact that the war ended 5 years ago, a lot of landmines are still laid in Srpska and the Japanese government, the government of other countries and NGO have been supporting in removal of landmines and teaching programs about landmines in school. However, even now there are many people who catch landmines by accident, especially there are many casualties among children and farmers. The population of disabled caused by traffic accidents and/or diseases is also increasing in Srpska.

Presently rehabilitative services for disabled are carried out only at the Institute for physical medicine and rehabilitation “Dr. M. Zotovic” in Trapisti and the 6 regional hospitals that have a rehabilitation department. Concerning the regional level rehabilitation system, Family Medicine Teams organized by the health centers (“Dom Zdravlja”, hereinafter referred to as “DZ”) and the health posts (Ambulanta) provide with home visiting care for the limited areas, though most of these institutions are not equipped with facilities and equipment necessary for rehabilitative care. Therefore, the patients and their families who need rehabilitative care have to go to the 6 regional hospitals with a rehabilitation department scattered over the country in order to receive continuous treatment, though it is physical, mental and economic burdens on them.

Under the current situation, the Government of Srpska plans to establish Community Based Rehabilitation Centers (hereinafter referred as “CBR center”) throughout the country in order to set up a network of rehabilitation system possible to provide continuous and effective rehabilitative care. According to the amendment of the concerned law, CBR centers will be established in DZs and 5 centers have been set up so far.

In the Federation, projects for improvement of rehabilitation facilities for war victims supported by the World Bank and the technical assistance of Queens University of Canada have been implemented successfully. 38 CBR centers throughout the country have been already established in the Federation and they have been providing the patients with the effective rehabilitative care. On the other hand, most CBR centers in Srpska are still in poor condition due to the delays of the economic recovery and the assistance from

donor countries and, thus, there are great disparities between the Federation and Srpska concerning improvement of CBR centers.

Under the above circumstances, the government of Srpska has requested to the Government of Japan to implement the Project for Improvement of Community Based Rehabilitation Center in Bosnia and Herzegovina (hereinafter referred as “the Project”).

## **Chapter 2**

### **Contents of the Project**

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### **2-1 Basic Concept of the Project**

#### **2-1-1 Objectives of the Project**

The purpose of the Project for Improvement of Community Based Rehabilitation Center in Bosnia and Herzegovina is to improve the treatment capability for those patients who require rehabilitative care within the sphere of their daily lives to be achieved by carrying out the renovation works on the facilities and by improving the equipment in the CBR centers which bear the central burden of the local rehabilitation services in Srpska. Then, along with easing the mental, physical and economic burdens on the patient and the patient's family caused by traveling, this Project also aims to make it possible for the patient to receive continuous treatment and, furthermore, with the close cooperation between the CBR centers (including the Family Medicine Teams) and the primary health care institutions such as DZ and Ambulanta, it should also improve the community-based health care, support the returns to society of the patients within the whole region and assist the development of the local communities.

#### **2-1-2 Concept of the Project**

##### **(1) Basic concepts**

17 CBR centers that this Project targets are the outpatient rehabilitation facilities, which are affiliated with the DZs located in each municipality. The beneficial areas of these CBR centers are larger than those of the DZs and are set up so that they may also take in patients from neighboring municipalities. Consequently, if the CBR centers are equipped with the necessary equipment and the spaces for CBR center are renovated through this Project, the treatment and training functions, which have worsened due to the obsolete equipment currently in use, should be greatly improved and, with new equipment and facility renovation being supplied, an improvement of the level of the rehabilitation services can be expected. Therefore, the CBR centers will be able to provide adequate medical services to those patients who require rehabilitative care in question and the regional differences in the levels of treatment should be declined.

Furthermore, through this Project, many local habitants who at present cannot go to rehabilitation facilities for financial reasons, even though they have been diagnosed as needing some treatment, or those patients who are directly referred from the DZs to the secondary and/or tertiary medical facilities with the department of physical therapy such as

the Institute for physical medicine and rehabilitation “Dr. M. Zotovic” in Trapisti will be able to benefit from the continuous proper services at the CBR centers within their daily lives. The patients who used to be referred directly to the upper rehabilitation facilities will be examined at the CBR centers first. Also, the CBR centers will play a crucial role as a “filter” to screen the patients and will send them to suitable level of the rehabilitation facilities. As a result, more patients will feel ease to visit CBR centers and the appropriate treatment and training to the patients will be provided accordance with the disability, which is expected to contribute to normalizing the flow of the patients and, as a result, the tight medical costs.

## **(2) Conclusions - Investigation of request**

The initial request regarding this Project was to establish CBR center in 17 DZs and to procure the equipment: 76 items (Level 1) and 69 items (Level 2, 7 items fewer than Level 1). During the site survey, an amended request concerning the projected facilities was made, but finally the number was fixed on 17. Furthermore, there was no reason to set up any differences among the respective CBR centers, the equipment list based on Level 1 was prepared and examined.

During the site survey, in order to review the facilities targeted for establishing CBR centers, the Study Team collected the necessary information and materials covering items such as: the order of priority for the targeted facilities, the condition of the facilities, a survey of what renovation work would be needed, a survey of the condition of the existing equipment, verification of the content of the equipment to be supplied, the administration budget, the personnel plan and so on.

### **The Identification and Selection of the Targeted DZs**

The Ministry of Health and Social Welfare of Srpska (hereinafter referred to as “the Ministry of Health”) plans to establish CBR centers in 22 places throughout the country in order to set up a network of rehabilitative care, similar to that in the Federation, and intends to provide rehabilitation treatment for disabled people, including war victims. Srpska has already established 5 CBR centers (Priedor, Gradiska, Prinjavor, Doboje and Banja Luka) and needs to establish a further 17 centers to complete the network. With regard to 17 centers, the number and proposed sites were selected by taking into consideration such details as the population density of each region, the total area and the population that will be benefited, whether or not there are any rehabilitation facilities

nearby, as well as the distance from the nearest facility which has a rehabilitation program.

After further discussions within the Ministry itself about the priority of the centers, they added to the original 13 centers [Novi Grad, Laktasi, Derventa, Zvornik, Vlasenica, Sokolac, Visegrad, Sipovo, Sarajevo (Kasindo), Teslic, Srbinje (Foca), Trebinje, Gacko], a second request for two more facilities, Samac and Kozarska Dubica, and then as a third request they added two more, Kotor Varos and Srbac (regions where the demand for rehabilitation treatment is rising due to an increase in the population as recently the Croatian and Muslims, who used to live there, are now starting to move back), and so put in a demand covering a total of 17 facilities. Furthermore, during the period of the site survey, the site at Srbinje was also struck off the list because they could not offer the space for the CBR center (Ugljevik was included instead) and thus the final request was decided during the site survey.

As a result of this, the facilities included in the final request are the following 17 DZs: Novi Grad, Kozarska Dubica, Srbac, Laktasi, Kotor Varos, Derventa, Samac, Zvornik, Vlasenica, Sokolac, Visegrad, Ugljevik, Gacko, Trebinje, Sipovo, Teslic and Kasindo.

### **(3) Equipment**

The Ministry of Health plans to establish CBR centers in 22 locations around the country and to provide the appropriate rehabilitative care in each region. If the service level of 17 CBR centers will be improved under this Project, a framework for the rehabilitative care system can be formed similar to that of the Federation, as a result, the supporting system that helps the disabled people to get back to normal life will be encouraged. With this idea in mind, the priority of the equipment was examined on the premise that the equipment would be used effectively and the final priority equipment list was made.

Among the DZs targeted under this Project, there are some facilities, which already have a rehabilitation department (7 DZs). The most of the equipment of these DZs were manufactured in the former Yugoslavia or Slovenia over twenty years ago and so is considerably obsolete and in need of renewal. On the other hand, 10 CBR centers will be newly established and equipped under this Project. Even at these facilities, doctor specialist of rehabilitation or physiatrist comes from the medical facility at neighboring municipality once or twice a week and consults the patients without any equipment. It was, however, confirmed that at these facilities a plan was in place to make these doctors

who were coming in part time fully in charge of CBR centers when opened and so there would be no confusion when they actually started (see **Table 2-1**).

**Table 2-1 The Condition of Each Rehabilitation Department**

CBR Center	Existence of Rehabilitation Facility	Hydrotherapy Equipment	Physiotherapy Equipment	Therapeutic Exercise Equipment
1 Novi Grad	Yes	No	Yes	No
2 Kozarska Dubica	Yes	No	Yes	Yes
3 Srbac	Yes	No	Yes	Yes
4 Laktasi	No	No	No	No
5 Kotor Varos	No	No	No	No
6 Derвента	Yes	Yes (not in use)	Yes	Yes
7 Samac	Yes	No	Yes	Yes
8 Zvornik	No	No	No	No
9 Vlasenica	Yes	Yes (not in use)	Yes	Yes
10 Sokolac	No	No	No	No
11 Visegrad	No	No	No	No
12 Ugljevik	No	No	No	No
13 Gacko	Yes	No	Yes	Yes
14 Trebinje	No	No	No	No
15 Sipovo	No	No	No	No
16 Teslic	No	No	No	No
17 Kasindo	No	No	No	Yes

The space prepared for CBR centers varies from 120m<sup>2</sup> to 300m<sup>2</sup> and, thus, the agreement has been obtained from the Ministry of Health to concern the equipment plan depending on the patient needs and the width of the facility after renovation.

The types of equipment to be procured include: hydrotherapy, physiotherapy, therapeutic exercise, evaluation, positioning and the other equipment (see **Table 2-2**).



**Table 2-2 Equipment List**

No.	Equipment	Q'ty	No.	Equipment	Q'ty
<b>HYDROTHERAPY</b>			<b>THERAPEUTIC EXERCISE</b>		
1	Whirlpool Bath	11	26	Treatment Table	101
<b>PHYSIOTHERAPY</b>				Sponge Pillow	
2	Ultrasound Therapy Unit	17	27	Massage Table	16
	Treatment Heads of Ultrasound Therapy Unit- various sizes			28	Therapeutic Couch
3	Microwave Therapy Unit	16		Holders for the Hands, accessories to Therapeutic Couch	
4	TENS	32	29	Training Ball Set	17
5	Paraffin Bath	16	30	Tilt Table	5
6	Hot Pack Unit	17	31	Ankle and Leg Exerciser	5
	Hot Pack, medium & large size			32	Leg Press
7	Interferential Therapy Unit	31	33	Exercise Stairs	14
8	Magnet Therapy Unit	16	34	Treadmill	10
9	Electrostimulator	17	<b>EVALUATION</b>		
10	Cryotherapy Unit	11	35	Percussion Hammer	34
11	Laser Therapeutic Instrument	16	36	Hand Dynamometer	34
<b>THERAPEUTIC EXERCISE</b>			37	Goniometer	34
12	Overhead Frame	17	38	Anthropolomer	17
	Wrist Roll	17	<b>POSITIONING</b>		
	Shoulder Wheel	17	39	Wedge & Roll Set (small & large)	17
	Chest Pully	34	<b>OTHERS</b>		
	Wall stall bars	17	40	X-ray Film Illuminator	17
	Overhead Training Bed	17	41	Instrument Cabinet	34
	Tape, Fixation Set for the couch			42	Stethoscope
13	Parallel Bars	16	43	Medical Refrigerator	17
14	Posture Training Mirror	16	44	Computer	17
15	Dumbell Set	17		Printer of Computer	
	Dumbell Rack			45	Posters for the Physical Medicine, I-V
16	Musclomatic Weight Set	17	46	Ultraviolet Lamp	17
17	Training Bar Set	17	47	Infrared Lamp	17
18	Wooden Block Set	16	48	Invalid walker	85
19	Aerobike	17	49	Wheel Chair	85
20	Quadriceps Table	15	50	Crutch	170
21	Grip Exerciser Set	17	51	Spiro Analyzer	17
22	Grip Exerciser Putty Set	17	52	Portable ECG-3ch	17
23	Cart for the equipment	51	53	Massager	17
24	Mattress for Exercise	85	54	Vehicle for Patient Transportation	17
25	Medicine Ball Set	17			

### **Procurement policy of computer**

The records of the patients who come to the rehabilitation department are kept in a ledger called “Protocol”. Within this ledger, the name of the patient, details of treatment, frequency of treatment and the name of the doctor in charge are briefly recorded. However, the data management of the medical records for each patient and other information is insufficient, and with accurate medical histories and precise figures for the number of patients coming for treatment who require rehabilitation hard to obtain, it is difficult at present to carry out effective and suitable treatment and guidance.

To solve this situation, the computer will be procured with the software for making database on the assumption that Srpska side will create and popularize an administrative system that can manage patient details and database. Arranging statistics concerned with rehabilitative care as mentioned above helps to grasp the situation about patients who need rehabilitation, and aims to be reflected to the medical policy applying the results.

### **Procurement policy of vehicles for patient transportation**

At present, the transportation for home visiting care being carried out at the DZs is either an ambulance vehicle, the car of the patient’s family or that of a neighbor. Furthermore, if the ambulances are called out for emergency case, the home visiting care is often canceled. Because of this, in many cases the area covered for home visiting care is limited to the areas close to the clinic. However many patients who require medical treatment at their homes live in rural areas. Although there is a health post in these regions, it is very limited, being able to deal only with illnesses that can be dealt with by very simple diagnosis and treatment. Moreover, many of these regions are in the mountainous places of the country and, as the roads are in a poor condition, the accessibility to medical services is generally limited.

This is exactly the same situation that patients needing rehabilitation. In order to receive treatment, many patients who want to go to the CBR centers are forced to rely on ambulances, the family car, a neighbor’s car or public transport such as the infrequent bus services. Furthermore, the current situation for patients who cannot use these means of transportation such as those in mountainous regions and the outlying districts is that they can only wait at home until they can get an opportunity for treatment, even if the need for immediate treatment has been confirmed.

To improve the access conditions to the rehabilitation services, the validity of the procurement of the vehicle for patient transportation was analyzed. According to the

result, all CBR centers were recognized to necessity for procurement of a vehicle. For example, Kasindo where has relatively advanced public transportation services (mainly buses) possesses a narrow service area, but large quantity of the population and patients. Although the public transportation services in urban areas are well developed, the way of transportation from mountainous regions to DZ is a public bus that runs only in the morning and evening. The transportation at the farther mountainous regions (40-50km away from DZ) is more limited, and using taxis is the great economic burden for patients, so they are in a position whereby they cannot get to the hospitals. In expectation that the above situation will continue in Kasindo, a vehicle for patient transportation should be delivered, and as well a vehicle is necessary to be procured to the CBR center in Laktasi, because of the same situation being recognized in this region.

Concerning Srbac, Zvornik and Gacko, there are no transportation services in the mountainous and farming areas, so the procurement of a vehicle gives the people there chances to go to the CBR centers for receiving continuous rehabilitation services and also to be provided with home visiting care.

With regard to the CBR centers except the above-mentioned centers they possess a wide service area and a large number of the patients because of the huge population of beneficiaries. Therefore, there is a high necessity of procuring a vehicle for home visit care and transportation for those who live in the farming and mountainous areas. Moreover, if transportation of the patient is possible by procuring a vehicle for CBR center, patients in the farming and mountainous areas will be able to receive continuous and effective rehabilitation.

Furthermore, after procurement of a vehicle, each CBR center should operate the vehicle following the service plan. The vehicle shall be utilized patient transportation to CBR center, or movement of doctors, physiotherapists or nurses to conduct home visit care. Cost for maintenance and operation of the vehicle shall be burdened by each DZ same as the cost related to ambulance because the service is related to rehabilitation care.

Therefore, in order to both use the equipment and facilities provided under this Project to maximize their capacities and to establish the foundations for a network of rehabilitative care in Srpska, by avoiding any regional disparities in the service provided, it would be favorable to deliver vehicles for transporting patients to all CBR centers.

Consequently with regard to the type of vehicle to be provided, as a vehicle that will be mainly used both to pick up patients at home and those without transport means, as well as carrying Family Medicine Team, it should be a one-box type van which opens at the

back (with a ramp attached) so that wheelchair-bound patients can use it without any difficulties. Furthermore, taking into consideration the need to cut down on running costs, equipping them with diesel engines should be procured.

With regard to the actual provision of the vehicles, a supplier is required that has a representative office in Srpska, with a dealer with workshop for repairs, and an adequate after-service network in place, in order to deal quickly with repairs to damage and carry out regular checks after this Project has been put into operation. Furthermore, the specifications must also take into consideration; such as the country's severe topography, roads with many twists and turns and up and downs, and the snow and the freezing roads in winter.

## **2-2 Basic Design of the Requested Japanese Assistance**

### **2-2-1 Design Policy**

#### **(1) Policy concerning external climatic conditions**

The Republic of Srpska is one of the entities consisting of Bosnia and Herzegovina together with the Federation of Bosnia and Herzegovina. The country is located in the center of Balkan Peninsula and mostly covered by mountainous areas (60% of total land area). Because of the mountainous climate, the weather is changeable and the difference between maximum and minimum temperatures is severe in some regions. Especially in the mountainous districts, the temperature in winter goes down to 30 degrees below zero and they receive snowfall of 50cm. However, the natural climate is unlikely to affect normal efficiency of the equipment procured under the Project and additional measures due to natural conditions are no considered necessary.

Because the roads connecting cities run across the mountain areas, the snowfalls during winter, especially January and February, will delay the schedule of transportation of the materials and procurement of the equipment. Also, the cold temperature will make the cement frozen, which should be avoided.

#### **1) Policy concerning low temperature in winter**

As it is quite cold in winter in Srpska as a whole, though with some diversity in region, it is essential for buildings to be equipped with heating system. From viewpoints of saving energy and providing patients who wear caps, coats and boot outside with convenience, the followings are taken into consideration in facility planning:

a) Windbreak entrance

A windbreak entrance is the entrance room closed by two doors in front and in rear to avoid the cold air coming in from outside directly. The windbreak entrance will be considered regards the fact that they are common and furnished in most buildings in Srpska.

b) Coat hanger and boots cupboard

In winter, patients coming to CBR centers wear coats, hats and boots and they would take them off inside. Therefore, a coat hanger and a boots cupboard will be provided to keep the patients' clothes and boots temporarily for the comfortable rehabilitation and for keeping the rooms clean.

**2) Measures against lightning**

In Srpska, thunder and lightning often occur and tricks buildings and thus, anti-lighting facilities are essential for buildings, even single story houses, so all public buildings are furnished with lightning arresters. This point is also taken into consideration in facility planning.

**(2) Policy concerning procurement from third-party countries**

17 CBR centers targeted for the Project are scattered throughout Srpska. This may lead to delays in getting spare parts and consumables, as well as difficulty in obtaining maintenance and repair services from the relevant manufacturers. As the equipment requires a maintenance or parts replacement by engineer from manufacturer, it is important to choose a manufacturer with the representative office and/or agency in Srpska or neighboring countries. However, Japanese rehabilitation equipment are relatively uncommon in Srpska, so it may be prudent to source some equipment from non-Japanese manufacturers in order to facilitate proper maintenance and procurement of spare parts and consumables - provided, of course, that the equipment satisfies quality and performance standards and suits the needs of the facility in question.

The most rehabilitation equipment to be procured under this Project does not, however, require high-level maintenance techniques. So, the frequent technical troubles do not occur with the equipment. Presently most rehabilitation facilities directly ask representative offices and/or agencies in Yugoslavia or Slovenia for repairs of the equipment in case that the agencies in Srpska cannot repair them. Response of these

agencies is quick enough. As a result, when procuring equipment that requires technical knowledge for repairing and genuine spare parts, it is important to consider the procurement from Japanese manufacturers or manufacturers of third-party countries with representative office and/or agency in Bosnia and Herzegovina, Yugoslavia or Slovenia.

### **(3) Policy concerning operational, maintainable, and managerial capability**

There are 37 physiatrists, more than 100 physiotherapists and nurses working in rehabilitation facilities in Srpska at present. As still more number of medical staff will be required when opening of CBR centers, the Ministry of Health is carrying out the study and training courses for medical staff including doctors, physiotherapists and nurses. The Ministry of Health intends to conduct an operational system with 54 physiatrists, 128 physiotherapists (54 senior and 74 normal physiotherapists). Although detailed personnel plan of these doctors and physiotherapists should be decided in the near future, the Ministry of Health plans to place 5 or 6 staff to 1 CBR center, concretely 1 doctor, 2 or 3 physiatrists and 2 or 3 nurses in each center. Final decision will be made on the basis of staff number required from each DZ and number of patients. No problems concerning medical personnel, thus, are envisaged in each CBR center.

Physiatrists and physiotherapists will obtain knowledge of utilization of equipment and the effect use of the equipment at training facilities. Therefore, operational training when delivery of procured equipment will be enough provided at the time of installation. Local medical personnel should have no problems operating the newly supplied equipment.

Concerning maintenance staff of equipment, except repair of equipment requiring special technical knowledge of engineer from manufacturer, it is confirmed that engineers stationed on the premises in each DZ have sound ability and skill of simple maintenance and repairing of procured equipment.

### **(4) Policy concerning scope and grade of equipment**

#### **1) Policy for equipment**

The grade and specifications of the rehabilitation equipment procured will be essentially identical to the existing equipment at the facilities. If the new equipment is superior to existing equipment or is new to the facility, due care must be taken to ensure that the equipment is both consistent with the role and function of the facility and required in terms of the type of rehabilitation services provided and relatively easy to operate without requiring intensive training.

Moreover, referred the equipment in CBR centers in the Federation, the grade of the equipment will be considered.

## **2) Policy for supply of spare parts and consumables**

As consumables of the equipment procured under this Project, i.e. paraffin wax, gel, etc. can be substituted for products of other manufacturers, which is possible to obtain from local agencies. These agencies supply consumables to Institute for physical medicine and rehabilitation “Dr. M. Zotovic” in Banja Luka and other medical facilities with rehabilitation departments, and also provide them with maintenance and repair services. They have no problems with technical level of engineers and quick service response.

The appropriate amount of spare parts and consumables should be supplied under the Project to ensure proper operation following the installation of the equipment and to maximize equipment performance

## **(5) Policy concerning inland transportation**

The equipment will be unloaded at the port of Koper in Slovenia and transported through Croatia to Srpska by truck, which is the appropriate route for transportation to Srpska.

This Project shall deliver equipment to the 17 CBR centers scattered throughout Srpska. All equipment both procured from Japan and third-party countries will be unloaded at the port of Koper and transported to Banja Luka by truck. Then some equipment will be sorted into containers for distribution to 17 CBR centers. Delivery schedule will be coordinated with the progress of renovation and installation works.

By the reason that the country is very mountainous and road condition is not good, transportation should be completed before winter in order to ensure smooth delivery of equipment to each facility. When equipment is to be delivered during winter, contingency plans need to be drawn up to deal with potentially poor road conditions.

## **(6) Policy for the period of the execution of the Project**

In srpska, country is mostly covered by mountainous area. Moreover, width of the roads is narrow, in addition, roads in mountainous area are in poor condition. In winter, thus, transportations of equipment and materials for construction by trucks are anticipated delaying by freeze on the roads and heavy snowfall. In order to finish installation of

equipment smoothly within the planned schedule, completion of facilities renovation as planned is a necessary precondition. Most DZs need the renovation works for own facilities. Due consideration should be given to avoid unsecured quality of content of renovation work, trouble in delivery of necessary construction materials or delay of schedule, owing to snowfall or low temperature. Therefore, it is necessary to conduct the renovation of facilities and installation of equipment avoiding the coldest season.

### **1) Procurement plan**

The period of time allotted to the Project is one fiscal year. However, the timing of procurement, delivery and installation of equipment should be carefully examined to prevent delays, including procurement from third-party countries. Given the large number of CBR centers and the long distances involved, the timing of installation is most important factor. In order to ensure that equipment is installed quickly and efficiently, it will be necessary to divide 17 CBR centers into 2 parts: north part near Banja Luka and south part near Sarajevo. A team for each part will be in charge of 8 or 9 CBR centers and 2 teams will conduct the installation works simultaneously.

### **2) Renovation work plan**

A climate of regions near the Adrian Sea located in Southeast Srpska is strongly receiving the influence of the Mediterranean climate and temperate. On the other hand, some regions of mountain area become 20 degree in below zero in winter season. The sites to be renovated by this Project scattered throughout the country, so that the climate conditions of each site are greatly different. Most of the renovation work is conducted inside of the building, so at anytime the construction can be started. But in the area where the lowest temperature in winter become 20 degree in below zero, the work conducted outside of the building or some works which uses water such as concrete placing should be started from Spring. The commencement time of the renovation work should be set up one month after the contractor is decided. The commencement time of the foundation work after dismantlement work conducted at Novi Grad, Teslic, Kotor Varos etc. should be set to avoid the severe winter period. Concerning about the policy to set up other overall construction terms of works, the construction work should be done at Laktasi and Trebinje in winter, because in these two sites, the temperature does not become extremely low. Also, in the sites where the work conducted outside of the building is a little such as Derventa and Ugljevik, the construction work should be set up in winter.



As mentioned above, the construction process that is not influenced by the temperature, such as dismantlement removal construction etc. conducted the mountainous sites, or sites located in cold area shall be planned in winter. Each construction process shall be dispersed to shorten whole term of construction works and to ease construction management and the contractor side management.

### **3) Construction plan**

#### **a) Organizational plan**

The supervising system of the consultant consists of 1 supervisor from Japan, staying mainly in Banja Luka, and some local staff staying in Banja Luka and Sarajevo. From the point of view of communication, traffic and geological reason to each site, the Banja Luka office will be responsible for the supervising of north area and Sarajevo for east south area. All inspection of the construction on the consultant is conducted from these two base offices.

As organization of supervising work, under Japanese staff placed in Banja Luka, 4 local engineers employed by the local consultant company or the major construction company, which have some experiences working with foreign assistance, shall be arranged to control each responsible region.

#### **b) Arrangement of site construction**

According to the investigation of local construction sites, the abilities of local companies are enough to implement the small-scale renovation work at each site. However, facilities to be renovated are 16 and scattered throughout the whole country. Thus, it is impossible to finish all works within the specified term by one local company. Therefore, several local constructors should execute the renovation works. Though number of local constructors in charge of the renovation works depends on their abilities, two or more local constructors are the most suitable to execute construction works in each region.

## **2-2-2 Basic Plan**

### **(1) Total concept of the project planning**

Under this Project, 76 items of rehabilitation equipment including hydrotherapy equipment, physiotherapy equipment, therapeutic exercise equipment, evaluation equipment, positioning equipment and other equipment were identified as necessary for the

provision of rehabilitative care services to the locals by the relevant CBR centers. Appropriateness and priority of procured equipment were confirmed on the basis of careful consultation with the Ministry of Health, directors and doctors of DZ. This Project also has given due consideration to grade and specification of the equipment, taking into account of the condition of facilities, current situation of existing equipment, technical level of medical personnel, post-installation maintainable system and operational and managerial capability.

Most of the equipment will be delivered to replace existing equipment and newly procured. The Study Team confirmed the installation space in each CBR center, therefore, problems associated with installation space are not anticipated. For effective use of procured equipment, it is important to secure spaces for the equipment suited to each therapy room as well as to make each facility convenient for disabled person. However, the CBR centers are located in existing facilities and their spaces are different. The main concept of CBR center is to provide the same level of the rehabilitative services to people all over the country. Taking this idea into consideration, there is possibility of making differences in quantity of the equipment for some CBR centers, owing to their limited space in facilities, this Project drew up equipment plan in order that all centers will not have serious gap in terms of services.

Spare parts and consumables will be supplied together with equipment to cover the requirement of normal operations and upkeep, maintenance and inspection and repair work. The quantity will be calculated on the basis of the anticipated frequency of use to avoid problems at start of operation. Also the need for equipment servicing programs, procurement systems for spare parts and consumables and ongoing supply systems will be considered.

On the Site Survey, the Study Team visited all facilities possible to establish CBR centers and investigated the current conditions of the facilities. The purpose of investigation was to judge the appropriateness of facility as CBR center, possibility to secure space of installation and contents of necessary renovation works. As most facilities, though there was difference in level, were not equipped with a washroom or a slope considered for usage of a wheelchair user and a disabled person, these facilities needed the renovation works in order to maximize the function. On the other hand, the buildings differ in their structures; consequently each building should have renovation methods of its own.

Following the result of site survey, 12 facilities require small-scale renovation

excluding major structure, or a roof or outer wall, whilst 4 facilities require large-scale renovation including major repairing either main structure, or a roof or outer wall. There is 1 facility to be newly constructed by clinic, because the planned facility was not suitable for CBR center and there was no substituted facility nearby. It is planned to renovate facilities with using materials possible to obtain in local market and take construction method adopted for the construction of existing buildings in order to coordinate with neighboring facilities under the Project.

## **(2) Equipment plan**

Based on the result of Site Survey, 54 items of rehabilitation equipment assessed to be proper will be procured. They are classified in equipment for Hydrotherapy, Physiotherapy, Therapeutic Exercise, Evaluation, Positioning and others.

For each type of equipment to be procured to each CBR center under the Project, the basic specifications were assessed as described as below.

### **1) Hydrotherapy Equipment**

Hydrotherapy equipment is classified in whirlpool and bubble types. Whirlpool type should be procured under this Project. Although full body type should be selected in view of general treatment for thermotherapy, this type is unsuitable for the Project, because CBR center is a facility for outpatient and the spaces for the equipment, changing and locker room are also limited. In addition, frequent hot and cold water supply is not suitable in the small facility. Above reasons, upper and lower extremities type, which does not need special facilities such as waterproofing on the floor, should be selected.

Though there were some DZs which have the rehabilitation department to have Galvanic-bath, this type of bath will not be procured, because its effectiveness of treatment is unconvincing, in addition to avoid electrification. Thus, standard whirlpool type will be procured.

### **2) Physiotherapy Equipment**

Physiotherapy is the cure to ease pain and paralysis with physical stimulus such as heat, cold and electric current. Requested equipment is the basic equipment for physiotherapy essential for rehabilitation facilities. Most of the equipment owned by the rehabilitation facilities have been passed over 15 years and more or less unusable, because of partly broken and/or lack of some parts.

Specifications of each equipment to be procured should be same level as equipment owned by DZs, CBR center in Banja Luka or CBR centers in the Federation. They are determined as follows:

Probes of ultrasound unit, which can output two types of frequency, 1MHz and 3MHz, will be selected in order to conform to treated area of affected part and to treat in depth. As for ultrasound unit, desktop type is going to be selected in consideration for installation space in each site. Microwave therapy unit shall be equipped with two helical applicators.

Low frequency therapy unit, TENS, should be small, portable and rechargeable for both muscle stimulation and prevention from pain and stiffness. Paraffin bath will be procured for the purpose to treat for upper and lower limbs and equipped with thermometer. Hot pack unit and hot pack must be a basic 60-liter type. Concerning about packs, for shoulder, neck and other parts of body will be consisted of total 20 pieces. Interferential therapy unit shall be equipped with middle frequency about 4,000 Hz for treatment, and portable type. Magnet therapy unit should be able to treat partially with cuff for upper and lower limbs. Electrostimulator should be of two channels model, moreover its procurement from EU countries or the Former Yugoslav, thus, should be considered mainly. Cryotherapy unit, which is cold airflow type that emits chill jet, should be selected. Laser therapeutic instrument will be procured, which should be able to output over 300mW to treat depth with laser.

The Study Team consulted with the Ministry of Health and each DZ about the details of usage of equipment which request more than one. As a result, low frequency therapy unit, TENS, and interferential therapy unit assessed proper to be procured two units to each CBR center because of their high frequency of use and the point that family medicine team will operate these items when they conduct home visiting care. One unit of low frequency therapy, TENS, should be procured to Srbac DZ and Samac DZ, because they have owned one unit, and they have been in operation in good condition. As for interferential therapy unit, Kozarska Dubica DZ has already owned one unit and Samac DZ has already two units, which are all operated in good condition. Thus, quantity of them to be procured should be reduced.

Cryotherapy unit is requested each three units for each CBR center from the Ministry of Health. As a result of interview, it will be procured one unit to each DZ in consideration of its use frequency and the limitation of the space for installation.

### **3) Therapeutic Exercise Equipment**

Exercise therapy is performed to improve muscular strength, joint movement and physical strength in medical evaluation on factors that makes daily life difficult (paralysis, reduction of muscle strength and limit of joint movement, etc), in addition, considered for physiological effectiveness by exercise. Exercise therapy is positioned in leading part in physiotherapy. As most of Therapeutic Exercise equipment owned by rehabilitation departments has passed over 15 years, most of them are too old to use and cannot put appropriate load. Because it is important for exercise therapy to put appropriate load to patients and to let patients exercise well balanced and safely, most suitable equipment plan for each CBR center should be determined in consideration of limitation of space for installation after facility renovation works.

Policy to determine specification of each equipment is mentioned below:

Overhead frame shall be an exercise frame that does not need to install on the wall and ceiling and should be attached sand bag, pulley and rope. Wrist roller with height adjustable and general clenched bar with radius of 35, 45, 55mm set with exercise frame will be selected. Shoulder wheel, which is adjustable for radius for rotary exercise and the height, shall be selected to set with exercise frame. Stall bar, which has over ten steps, will be selected. Parallel bar should be length of 3.5m in order to make the best use of limited space in CBR center. Sand bag set, which consists of some six pairs, 0.5, 1, 2, 3, 4, 5kg, will be procured. Training bar set, which the radius should be 30mm, and the length should be about 1m. Aerobike should be capable of measuring pulse, time and speed. Quadriceps bench for the exercises must have back support and grip with adjustable weights. Grip exerciser should consist of trainer for limb and ante brachial muscular, pate and trainer for each finger. As for cart for the equipment, cart that can set equipment for physiotherapy with caster will be procured. Medicine ball should consist of set for three sizes, 1, 2, 3kg respectively. Massage table should be strong enough for massage. Leg press should be the equipment to increase physical strength of quadriceps and gluteus. Exercise stairs will be equipped with 3 steps x 4 steps with banisters. Treadmill must be capable of indication of speed, time and distance, and a flat setting with banisters.

### **4) Evaluation Equipment**

These are equipment needed to measure handicapped level of patients and to evaluate the effects on rehabilitation treatment. Specification of each equipment should

have same level as the current equipment and equipment owned by CBR centers in the Federation and should be determined as followed:

Hand dynamometer, which is made of plastic, and consists of two types for wrist, shoulder, elbow, knee and ankle should be selected. Goniometer should be the standard set consisted of tactile measure, gliding measure, measure and tape measure.

### **5) Positioning Equipment**

Concerning about wedge and roll set, the wedge set, which consists of 5 types, standard of 51cm (width) x 56cm (length) x 10cm, 15cm, 20cm (radius) and 61cm (width) x 71cm (length) x 30cm, 25cm (radius), shall be selected. And roll set, which consists of 5 types, 61cm (length) x 15cm and 20cm (radius) and 91cm (length) x 20cm, 25cm and 30cm (radius) should be selected.

### **6) Other**

The Study Team consulted with doctors in each DZ about essential equipment for diagnosis. According to consultation, following other equipment is determined to procure.

Negatoscope will be a wall hanging and desktop type and should have size for 2 films for 1 step. Instrument cabinet, which is made of stainless steel and has each two upper and lower double sliding door glasses with a key, should be selected. Stethoscope and wheel chair will be selected for adult. Crutch shall be selected two types, for child and adult. In regard to medical refrigerator, the effective capacity must have approximately 300 liter and operating temperature should be an adjustable within 2-14 degree. Infrared lamp and ultraviolet lamp should be equipped with one lamp and timer. Spirometer will be a portable type with a printer. As for Portable ECG, grade of minimum requirement is 3 channel, and should be rechargeable and be equipped with cart.

## **(3) Facility renovation plan**

### **1) The content of renovation**

The content of renovation for each site depends on the current situation of the facilities and future usage plans. The renovation work will be conducted on the basis of the following basic policy:

#### **a) Renovation of exterior**

In most of sites, some spaces of an existing building of DZ are provided for CBR

center. However, the renovation work will take place in only the space proposed for CBR center, not the whole building. Concerning about the exterior of facility, it is very difficult to renovate partially because of the continuity of architectural design and function of exterior walls or roofs. On the other hand, in case of interior, partial renovation work does not make great difference from the parts by separating with walls and doors. Taking this point into consideration, the Project shall, in principle, not include exterior renovation as far as the CBR center will use a part of building. However, partial repair of leaking roof, touch up of wall finishes and repair of broken windows shall be excepted.

b) Extension

Extension of buildings shall not be carried out in the Project.

c) Removal of walls

There are some buildings proposed for CBR center including those of which structural system are unclear, or wall-supported masonry structure buildings which are usually unsuitable for removal of interior walls. Therefore, the work should be done carefully not so as to damage other parts of structure by removing existing walls, considering the structural feature of each building proposed for CBR center. In case that any damages are expected to take place, removal of existing wall shall not be carried out.

d) Renewal of interior finishes

As it is important for CBR centers to maintain the visual cleanliness of a medical facility, the Project shall include the renewal of interior finishes. However, it is also important to keep visual balance with other parts of building, which is including the Project. Thus, upon the renovation, drastic change of decoration will not be adopted, in principal the work shall be carried out following the existing interior finishes and using the same materials and construction method as much as possible.

## **2) Outline of construction plan**

### **Major Proposed Rooms**

Upon renovating rooms for CBR center, the necessity for each room, basic function, manner of utilization, major equipment, fittings and room size as well are described hereinafter respectively:

### **[Windbreak Entrance]**

#### a) Necessity and function

As stated in the design policies, the windbreak entrance is necessary for preventing heat loss by opening of doors in winter and for reducing energy cost.

#### b) Utilization

Entrance and Exit for the building.

#### c) Major equipment and fittings

In case an exclusive use windbreak entrance, in addition sufficient space is available for a CBR center, a coat hunger and a boot shelf will be installed in the space.

#### d) Size

The minimum depth of entrance will be considered by the size of space necessary to open doors. The door opening in windbreak entrance shall be adopted the system that doors to outdoor are to open outwards and doors to indoor are to open to both directions with swing hinge. This door opening system is commonly used in medical facilities in Srpska. The width is related to that of adjacent area such as a corridor or a waiting room and varies. Thus the size of windbreak entrance cannot simply be determined. Generally the size will be outlined about 5 to 10 m<sup>2</sup>.

### **[Waiting Room]**

#### a) Necessity and function

A waiting room is necessary for patients to wait for doctor's consultation and therapy. If there is no sufficient space for a waiting room, a corner of corridor will be used.

#### b) Utilization

Patients and attendant use it freely as necessity.

#### c) Major equipment and fittings

A bench or chairs for 5 or 6 persons are required to be installed. If the windbreak entrance is small or not for exclusive use of the center, a coat hunger and a boot shelf shall be installed there.

#### d) Size

In addition to the space for installing the above furniture and fittings, the space is also required for administrative procedures at reception. Waiting room is also generally used for a passage or connecting space of rooms, so that the size for waiting room



depends on the room arrangement. Thus, its size cannot be set commonly and simply.

### **[Reception and Nurse Station]**

#### a) Necessity and function

Nurses will play an important role in a process of patient movement in CBR center by receiving, instructing, guiding to diagnosis or therapy and collecting fees. Moreover, one of works for nurses includes supporting doctor's medical activities such as diagnosis, instructions and evaluations. Thus, a room to serve for reception office and nurse station is necessary as a working base of nurses.

#### b) Utilization

A few nurses will be arranged in CBR center.

#### c) Major equipment and fittings

It is expected nurses engage in various activities in the room. Thus, a set of a washbasin and a water heater is essential as sanitary installations. As for equipment, desks, chairs, cabinets for patient records, personal computer etc. shall be installed for patient administration.

#### d) Size

Since there has not been such a multiple duty facility in existing DZ so far, reference cannot be made to former examples for determining the size. However, a range of some 10~15 m<sup>2</sup> is anticipated from their expected activities and number of nurses arranged.

### **[Consultation Examination Room]**

#### a) Necessity and function

This is the place for a doctor to provide a patient with the first medical check, rehabilitation guidance and evaluation of the symptoms.

#### b) Utilization

A doctor uses it for diagnosis, treatment, guidance and evaluation of the patient.

#### c) Major equipment and fitting

As a doctor is always in touch with patients, a set of a washbasin and a water heater is essential as sanitary installations. A desk and a chair for doctor, a stool for patient, a diagnosis couch, a medical equipment cabinet, a film viewer are also essential equipment in this room.

d) Size

Considering space for a wheelchair move, the size of room will be a bit bigger than a consultation room in an ordinary hospital. That shall be 10 ~ 15m<sup>2</sup>.

**[Electrotherapy Room]**

a) Necessity and function

This room is required for therapy using devices that generate electric, magnetic or thermal stimulation. However, a separate room is not always needed for this therapy, in case therapeutic exercise room has a sufficient space.

b) Utilization

Generally, patients take therapy lying on a treatment couch or sitting on a chair.

c) Major equipment and fittings

In addition to electrotherapy equipment, power source and treatment couches are required. These three items compose an electrotherapy unit. In case more than two units are installed in the room, curtain rails and curtain must be installed in-between for protecting patient privacy. A washbasin is also required at a corner of the room.

d) Size

The minimum size of the unit is about 1.5m x 2.5m. The number of units and space for movement will determine the size of the room. In case of an ordinary bedroom in a hospital, two units shall be arranged in parallel with sidewalls of the room.

**[Thermotherapy Room]**

a) Necessity and function

As equipment for thermotherapy, Hot pack unit and Paraffin Bath are planned to be procured. Devices for these therapies generate heat and characteristic smell of paraffin also comes out from Paraffin bath. Above two reasons, separate room with a window for natural ventilation is required.

b) Utilization

Treatment with the hot pack therapy is taken lying on a treatment couch or sitting on it. On the other hand, treatment with the paraffin therapy is mainly taken sitting on a chair to soak the affected part in the melted paraffin directly.

c) Major equipment and fittings

In addition to a Hot pack unit, a Paraffin bath, a Treatment couch and a chair, building equipment and fittings similar to those in an electrotherapy room are required.

d) Size

The size of the room shall be sufficient if it has an enough space to arrange two therapeutic units as above mentioned.

**[Hydrotherapy Room]**

a) Necessity and function

Equipment for the hydrotherapy requested under the Project is Hydrotherapy unit for upper and lower limbs, which requires hot and cold water supply and drainage. Since this device also generates heat and humidity when operated, a separate room is required. However it will be no problem to install this device in the same room for thermo therapy devices.

b) Utilization

Same as Paraffin bath, a patient will take therapy directly soaking his/her arms in the tub of device sitting on a chair or legs directly sitting on the device.

c) Major equipment and fittings

In addition to the main device, a big sized water heater and a window for natural ventilation are required.

d) Size

A unit size for setting a device with surrounding area will be approximately 6 m<sup>2</sup> that is 2.5m x 2.5m in length.

**[Therapeutic Exercise Room]**

a) Necessity and function

Therapeutic Exercise is one of the important therapies in rehabilitative services. A room, thus, is needed to arrange miscellaneous training instruments as a core space of CBR center.

b) Utilization

Each patient participates in the therapy simultaneously using various equipment.

c) Major equipment and fittings

Main equipment for Therapeutic Exercise and fittings are planned to be installed. Moreover, washbasins shall be installed at a corner of the room if both connections to a water supply source and drainage are possible.

d) Size

The room size depends on the quantity and kind of equipment installed. A space of

some 130m<sup>2</sup> will be required to install all requested equipment.

### **[Toilet Booth for Wheelchair users]**

#### a) Necessity and function

A toilet booth for wheelchair users is essential in CBR center, because there are expected to be many of such patients.

#### b) Utilization

A wheelchair user uses the toilet by himself or herself, or by receiving a support by an attendant or a nurse. Wheelchair toilet is not exclusive facility for wheelchair users but also others including staff of the CBR center. Thus, if it is difficult to secure space for several types of toilet, a wheelchair toilet is a first priority to be secured.

#### c) Major equipment and fittings

A toilet bowl of plate and a washbasin are required to install in the room. A toilet bowl of plate shall be of push flashing type, and shallow type washbasin more accessible for wheelchair shall be furnished. Moreover, a small sized washbasin usable close at hand and handrails for sitting on the toilet bowl from wheelchair are required. In addition, consideration is also needed to install two paper holders on both right and left side and to provide shelves for patient's belongings.

#### d) Size

Considering space for wheel chair to turn around, the width of toilet shall be at least 1.5m. Considering space for a helper to support patient, the minimum depth shall be 2.0m.

## **Architectural Plan**

### **[Interior Finishes]**

Renovation of interior finishes in order to keep cleanliness of a medical related facility as stated in the design policies will be outlined as follows:

#### a) Floor and baseboard

Partial renovation of floor finish in a room is not unsuitable because of following reasons. First, it is difficult to obtain the plenty of same material and second, even if it is available, design continuity of material in respect of color and texture will be ruined due to the difference of deterioration. In principal, the design policies for interior finish include adopting the same materials as existing ones as much as possible. However, plastic tiles popularly used for floor finish in many project sites will be

substituted with seamless PVC sheet because the former material is easy to peel off. On the other hand, the latter material is reliable in durability. When floor material is replaced, baseboard requires to be taken off and also be replaced with the same as existing material. However, an angle shaped plastic rubber baseboard will be unsuitable because of less durability of material, in spite of usage popularly in existing buildings. It will be substituted with soft PVC baseboard.

b) Wainscot and wall

The most popular method for wall finish is dolomite plaster finish or that of painted one in Srpska. Thus, repainting will be the main manner of wall renewal. Before being painted, wall surface will be treated or partially touched up with dolomite plaster where cracks or scabs are noticed. Wainscot will be repainted with oil paint material suitable to wipe dirt with wet cloths and more durable. Ceramic tiles 150mm by 150mm square will be applied for the finish of wainscot where washbasin is installed or in such a room as toilet where water is frequently used.

c) Ceiling

Ceilings are also finished with dolomite plaster in most cases. Thus, repainting will be the main manner of finish renewal. However, popular plane paint finish will, in principle, be used no more, and mastic paint will be used for rough surface finish. This is to avoid noticeable traces of plastering repair on the part where partition walls were removed.

**[Windows and Doors]**

a) Windows

Reflecting climatic condition of the region, either windows with pair glass or double windows with single glass are used in all buildings proposed for CBR center except in Kasindo DZ. Thus, the weight of window panel become heavier in general, and in case of wooden sash especially, windows are apt to be deteriorated more rapidly. Consequently, most of windows are damaged in fixing and opening mechanism. Extent and manner of renovation of windows differ from each site. In many cases, renovation will be provided as follows: all movable window elements shall be first removed for renovation, and then be repainted. Screw holes shall be filled with wood. In addition, deteriorated metal parts including handles will be replaced with new ones. It is rare that all windows of the facilities require to be replaced. In case necessary, more durable aluminum windows shall be adopted in principle.

b) Doors

Rail assembled panel doors with transparent glass are popularly used at passage space such as windbreak entrance, corridor and wooden flush doors for room entrances. Cases that door itself is damaged are few. In such a case, door itself shall be replaced with new one. Handles loosen by wear of internal mechanism or lack of parts will be replaced with new ones together with locks. Door frames partly chipped off will be provided with carpenter's repair and repainted. Doors rubbing floor due to bad fixing or warp of the door itself will be fixed by planning lower and upper members of door, changing hinges, remaking screw holes, and resetting doors as far as possible.

**[Slope Way]**

- a) In order to secure the access for wheelchair users, facilities proposed for CBR center without a slope way will be furnished with it.
- b) In case that patients using wheelchair must go through gradient, they shall, in principle, be assisted by either their attendant or nurses. Thus, the gradient of slope way will be 1 in 12 at a maximum, which is available for ordinary wheel chair users to climb by themselves. Handrails for the slope way shall be installed except for those with small difference in height. A landing will be provided halfway for those over 90 cm of difference in height.

**Building Installations Plan**

**[Electrical Installations]**

a) Service entrance

The low voltage electric power in service in Srpska is 380/220V, 50Hz. Each building proposed for CBR center in each site is provided with low voltage electricity of either 220V single phase 2-wire system or 380/220V 3 phase 4-wire system. Existing service entrance lines and panels as well as main distribution boards shall, in principle, be used, and additional distribution boards shall be installed as necessary.

b) Lighting and receptacles

Existing lighting system is, in general, short of capacity, lighting fixtures, and luminous intensity as well. Necessary lighting fixtures shall be replaced with those of higher capacity, or added in careful consideration for reducing energy cost, in order to secure minimum luminous intensity in medical related facilities.

In case existing receptacles are in operation, it shall be utilized as much as workable. ,

If receptacle are required by changing partition wall, addition will be considered in electrotherapy rooms.

c) Telephone

To promote CBR activities in use of its own networks, provision of direct telephone service is necessary for each CBR center. At least an outside line shall be led to the reception and nurse station. A pair of telephone sets shall be installed therein and in the adjacent doctor's room that are connected each other by line.

**[Plumbing and Sanitary Installations]**

a) Water supply

All buildings proposed for CBR center are provided with city water service. Water pressure and quantity is satisfactory, though most pipelines look deteriorated and are more or less leaking. Upon renovation, disused pipelines shall be removed and new demand new pipeline will be laid and connected to existing supply network.

b) Drainage

All proposed sites are located within sewerage service areas, and all buildings proposed for CBR center are connected to existing sewers. Upon renovation, damaged drainpipes inside buildings proposed for CBR center shall be replaced and new ones will be connected to the existing drainage network as necessary.

c) Sanitary fixtures

Deteriorated sanitary fixtures such that ceramic parts are partly broken, handles are lost, and metal parts are rusted, are still used in many cases. Upon renovation, deteriorated sanitary fixtures will, in principle, be renewed considering the importance of clean appearance. As for toilet bowl, there are some cases that Asian toilet bowls is installed in the facilities. However, western ones shall be adopted under the Project considering current trend of the country.

d) Hot water supply system

Hot water is individually supplied in use of electric water heater with small storage tank at buildings proposed for CBR center of all proposed sites. Under the Project, the same system as existed one will supply hot water to the reception, nurse station, the consultation examination room, and the water therapy room.

e) Indoor fire hydrant

In many cases, facilities proposed for CBR center occupy parts of existing hospitals building. Thus, indoor fire hydrants are in general installed. Reflecting sufficiently

high water pressure, hydrant pipeline of the building is directly branched from ordinary water supply service of the city. Pipeline is usually in good condition and explained of its security of constant water supply. However, many of them are in short of hoses and nozzles. Under the Project, the existing fire hydrant system will be maintained and lacked materials and instruments shall be supplied.

### **[Heating installation]**

- a) As mentioned above, the heating system is essential in Srpska. Thus, it is provided to each building proposed for CBR center in all the sites except for Visegrad. In Visegrad, the facility proposed for CBR center is a part of a gymnasium that has been constructed by receiving support of an electric company, so as to be directly heated with electric heaters and electric sources are secured anytime. In other sites, all DZ facilities have boilers in common use and central heating is conducted. Heat source varies and oil, coal, wood, or electricity are usually used.
- b) In each site, heating system of building proposed for CBR center is a part of the entire system of the subject DZ, and CBR centers is not so big as furnished with a separate system for exclusive use. Thus, even if the existing system cannot sufficiently secure heat due to deterioration, the project scope of renovation should be limited to changing damaged radiators and pipes, or providing additional heating units to insufficient capacity radiators.

### **3) Renovation Plan of Each Site**

#### **Novi Grad**

##### ***Current Condition of the Building***

- a) Use of building

One of DZ buildings used by Physiotherapy and Ophthalmology department.

- b) Structure

Brick wall structure + Wooden truss, single story building.

- c) Proposed area

Whole building.

- d) Size: 213 m<sup>2</sup>.

- e) Deterioration

Seriously deteriorated as a whole of the building. Points observed are as follows: rain water leakage from roof, decay of wooden roof members, distortion of windows and



doors, differential settlement of scarcement, aged interior finishes, breakage of building utility fixtures and shortage of parts.

### ***Facility Utilization***

#### a) Security of access

To secure access for wheelchair users, the patient entrance of the ophthalmology department will be transferred to the main entrance of CBR center. Srpska side should construct a new gate on the north boundary of DZ territory nearby the entrance above. The Project includes construction of a new approach way and a slope way from the gate to the entrance.

#### b) Room arrangement

A corridor of 1.5 m wide will be provided so as to pass through the center of building along the structural center wall by removing parts of partition walls in north side rooms. The space given between north windows and the corridor will be used as a waiting room and physiotherapy rooms. In order to secure space for therapeutic exercise, partition walls in most of south side rooms will be removed except for the room to be used for the consultation room and part of buttresses.

### ***Renovations***

#### a) Exterior

Replacement of entire roofing material.

Repairing and repainting of eave ceiling and exterior walls.

Repairs of foundation wall finish.

Repairs of scarcement and steps as to unevenly settled bed and materials.

Constructions of new approach way and slope way.

#### b) Interior

Replacement of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

#### c) Windows

Dismantling, repairing, repainting, resetting and adjustment.

## **Kozarska Dubica**

### ***Current Condition of the Building***

#### a) Use of building

Building for rehabilitation department.

#### b) Structure

Wooden frame wall structure + wooden truss, single story building.

#### c) Proposed area

The total floor area of the building is 640 m<sup>2</sup>. Rehabilitation department is using one-third space of the building. The facility proposed for CBR center is unused space at present.

#### d) Size: 360 m<sup>2</sup>.

#### e) Deterioration

There are some cracks on floor concrete, lack of door hardware, breakage and lack of lighting fixtures. Those of radiators are remarkable. In addition, rainwater leakage is also partially observed. The building is structurally stable and breakage of exterior walls. In addition, the window frames are hardly observed.

### ***Facility Utilization***

#### a) Security of access

There are four existing entrances and the west entrance is proposed for the main entrance of the CBR center.

#### b) Room arrangement

The left side from the entrance, which is located in the north wing of the building, is planned to use for therapeutic exercise room. On the other hand, the right side rooms are planned to use for a waiting room and physiotherapy rooms.

### ***Renovations***

#### a) Exterior

Partial repairs of roof and holes on exterior walls.

Construction of new slope way.

#### b) Interior

Changes of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Dismantling, repairing, repainting, resetting and adjustment.

## **Srbac**

### ***Current Condition of the Building***

a) Use of building

Main and north building of DZ.

b) Structure

Main building: reinforced concrete rigid frame structure, basement + 3 stories.

North building: reinforced concrete and brick wall structure, single story building.

c) Proposed area

Rooms for rehabilitation department on 1st floor of main building and a part of north building.

d) Size: 320 m<sup>2</sup>.

e) Deterioration

Breakage of exterior walls and peeling off of finish mortar are remarkable in the main building. However, building interior is considerably well maintained both in the main and north building.

### ***Facility Utilization***

a) Security of access

The main access to the main building passes from the south building through a staircase. Therefore, the passage is unsuitable for wheelchair. On the other hand, the floor level is almost the same as the ground level around the north building. Thus, it is possible to construct a new entrance in the middle of the connecting corridor between the main and north building, which will be utilized as the main entrance of CBR center.

b) Room arrangement

The reception and nurse station, the consultation examination room and physiotherapy rooms will be arranged in the area used by the rehabilitation department at present. A therapeutic exercise room and a toilet available for wheelchair users will be arranged in the north building.

### ***Renovations***

a) Exterior

Construction of new approach way.

b) Interior

Changes of partition walls.

Construction of a new entrance.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Dismantling, repairing, repainting, resetting and adjustment.

## **Laktasi**

### ***Current Condition of the Building***

a) Use of building

A branch clinic of DZ.

b) Structure

Reinforced concrete and brick wall + wooden truss structure, single story.

c) Proposed area

Areas except for rooms for internal medicine, the main entrance and waiting hall already in service, that is 60 % of the whole building.

d) Size: 200 m<sup>2</sup> (including a poach in front of terrace and garage)

e) Deterioration

New building and not yet in use.

### ***Facility Utilization***

a) Security of access

The back entrance, one of two entrances of the building, will be utilized for the main entrance of CBR center after relocation. A slope way is complete thereto.

b) Room arrangement

The garage, terrace and porch in front of the garage are planned to be used for the therapeutic exercise room after a drastic renovation. The reception, nurse station and the consultation examination room will be arranged in front of the waiting hall and other rooms will be used for electrotherapy rooms.

### ***Renovations***

a) Exterior

Taking of the outdoor terrace and porch into indoor to secure space for the therapeutic exercise room.

b) Interior

Relocation of the entrance and toilets to secure a toilet available for wheelchair users. Interior finishes of the therapeutic exercise room and optimizing of the building installations at renovated areas.

c) Windows

Fitting of new aluminum made sashes at the therapeutic exercise room and the re-fitting of existing ones at the entrance and the toilet.

## **Kotor Varos**

### ***Current Condition of the Building***

a) Use of building

Administration building of DZ.

b) Structure

Wooden frame wall structure + wooden truss, single story building.

c) Proposed area

Whole building.

d) Size: 290 m<sup>2</sup>.

e) Deterioration

Deterioration of the building is severe as a whole for the age of 25 years. One part of ridge of corrugated asbestos sheet roof is missing due to rainwater leakage for long time, some parts of eave ceiling are decayed and trace of rainwater leakage is observed. Several parts of ceilings and walls are uneven. Windows and door are distortion. Some walls in water section are decayed. This fact gives evidence that the building seem to be exposed to and suffered from rainwater leakage for long time.

### ***Facility Utilization***

Upper part of the building shall not be utilized in order for acute deterioration. After removal of the upper part of the building except for basement, new facility shall be constructed on the existing basement.

a) Security of access

A staircase and a slope way shall be constructed at the location of the existing entrance.

b) Room arrangement

In accordance with the function of CBR center, a new plan will be made.

## ***Renovations***

### a) Foundation

Repairs of deteriorated concrete of foundation and re-plastering of finish mortar.

### b) Upper structure

Replacement of entire roofing material.

Repairing and repainting of eave ceiling and exterior walls.

Repairs of foundation wall finish.

## **Derventa**

### ***Current Condition of the Building***

#### a) Use of building

Main building of DZ.

#### b) Structure

Reinforced concrete rigid frame structure, basement + 4 stories.

#### c) Proposed area

Proposed area is major part of the basement will be provided; excluding the garage, workshops and the elevator hall. As the ground level of the northern part of building is low, the basement is practically the same as the ground floor as to access the natural lighting and natural ventilation. The proposed area is used as the rehabilitation department and administration department that consist of a director's room, accountant offices, etc. now.

#### d) Size: 338 m<sup>2</sup>.

#### e) Deterioration

Wear and tear of flooring materials, stain at and blistering and cracks of plaster walls, stain at ceiling, lack of blind or breakdown of opening mechanism of Venetian blind equipped double glass windows are observed.

### ***Facility Utilization***

#### a) Security of access

The main entrance of the building exists at the ground floor and is accessible only by staircase. Thus, it cannot serve for wheelchair users' demand. A new entrance will be constructed after breaking a part of an existing wall with windows at the northern part of basement. The ground level of the basement is mostly the same as the floor level. It will be utilized as the main entrance of the CBR center.

b) Room arrangement

Since rooms in the south wing of the building being used by administration department are relatively big in size and less in sanitary installations and receptacles, they are suitable for therapeutic exercise room. Rooms on the opposite side of the building for the rehabilitation department will be used consultation examination room and physiotherapy rooms. In addition, the existing hydrotherapy room and thermotherapy room will be used for the same purposes.

***Renovations***

a) Exterior

Construction of a supporting frame for the new entrance and a porch.

b) Interior

Changes of partition walls.

Construction of new entrance.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Removal of damaged Venetian blinds and adjustment of fitting and opening mechanism.

**Samac**

***Current Condition of the Building***

a) Use of building

Main building of DZ.

b) Structure

Reinforced concrete, 3 stories building.

c) Proposed area

A part of the ground floor. This area is now used as the rehabilitation department.

d) Size: 155 m<sup>2</sup>.

e) Deterioration

Differential settlement is observed at some parts of floor and wall. Moreover, deterioration of interior finishes, windows and building installations are observed.

### ***Facility Utilization***

#### a) Security of access

Since the existing entrance is for exclusive use of rehabilitation department and equipped with a slope way, it will again be used as the entrance of CBR center.

#### b) Room arrangement

Using the space of waiting hall, reception and toilets that is relatively large rearrangement of rooms will be made to secure a toilet available for wheelchair users and widen the space for therapeutic exercise. Other space will be used without any drastic changes.

### ***Renovations***

#### a) Exterior

Nothing to renovate.

#### b) Interior

Replacement of partition walls of waiting hall, reception, and toilets.

Repairing of unevenly settled floor.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

#### c) Windows

Dismantling of window leaves, repairing, repainting, resetting and adjustment.

### **Zvornik**

#### ***Current Condition of the Building***

#### a) Use of building

Main building for DZ.

#### b) Structure

Reinforced concrete rigid frame structure, basement + 5 stories, twin corridor plan.

#### c) Proposed area

Whole area of the west wing of ground floor being used for outpatient clinics and rooms for Ophthalmology department.

#### d) Size: 366 m<sup>2</sup>.



e) Deterioration

Breakage of window door hardware.

Stain, chipping off and cracks of finish materials.

Bad ventilation in toilets.

***Facility Utilization***

a) Security of access

The ground floor level is as high as a half of the ground level around the main entrance, which is accessible only with staircase. Thus, it is impossible for wheelchair users to access to the main entrance. However, at the west end of the north corridor where a sub-entrance is provided, the difference of height between floor level and ground level is considerably small and a slope way for carrying goods shall be provided. Thus, this entrance will be utilized as the main entrance of CBR center after substituting the existing slope way with one available for wheelchair users.

b) Room arrangement

Most of north side rooms, most part of the north side corridor, reception and reception hall will be combined to one room and used for therapeutic exercise room. On the other hand, south side rooms will be used for a consultation room and physiotherapy rooms with minor renovation only. The central part between two corridors will be used for toilets and hydrotherapy room.

***Renovations***

a) Exterior

Construction of slope way.

b) Interior

Replacement of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Washing, touching up with paint, changing damaged hardware and adjustment.

**Vlasenica**

***Current Condition of the Building***

a) Use of building

One of DZ buildings partially used by rehabilitation department.

b) Structure

Reinforced concrete rigid frame structure, basement + 3 stories.

c) Proposed area

A part of ground floor, formerly used for an operation department of hospital.

d) Size: 288 m<sup>2</sup>.

e) Deterioration

The building was constructed around 1975. Deterioration is observed in many part of the building. It may be caused by insufficient maintenance while in no use. Following deteriorations are noticeable: the breakage of window shutters and deterioration of window leaves is remarkable outside and inside, peeling off of ceiling mortar, over all deterioration of paint and breakage of lighting fixtures.

### ***Facility Utilization***

a) Security of access

As the building has one entrance, it will commonly be used with other departments. Existing slope way is too steep for wheelchair users to use. Thus, new one shall be constructed.

b) Room arrangement

The former operation room and surrounding rooms at the north side of the center corridor will be used for therapeutic exercise room after removing partition walls, on the other hand, rooms in south side will be used for consultation room, reception and nurse station. Moreover, electrotherapy rooms and the existing water area will be used for thermotherapy room including hydrotherapy and for toilets including that available for wheelchair users.

### ***Renovations***

a) Exterior

Construction of a new slope way.

Partial repairing of wall mortal and repainting of the existing porch.

b) Interior

Changes of partition walls, repair, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Removal of shutter guide rails and blades, dismantling of window leaves, repairing, repainting, resetting and adjustment.

## **Sokolac**

### ***Current Condition of the Building***

a) Use of building

Main building of DZ

b) Structure

Stone (or brick wall stone finish) wall structure

c) Proposed area

Most part of basement being used for kitchen, laundry, food storage, drug storage, linen storage, meeting room, etc.

d) Size: 260 m<sup>2</sup>.

e) Deterioration

The building is antique, and deteriorations in respect of interior finishes, windows, doors and building installations are all getting more severe, especially that of heating installation.

### ***Facility Utilization***

The candidate facility is a part of basement that is unsuitable for the location of rooms that are continuously used for daily activities. There is a slope way for the ground floor but there is neither lift nor space to make a new lift to reach the basement. It is very difficult to construct a slope way available for wheelchair users to come directly to the basement. Therefore, it is judged and concluded that the candidate facility is not suitable for physical rehabilitation facility and will not be used for the Project.

### ***Renovations***

No renovation will be carried out. However, considering the necessity of CBR center in this region, the Ministry of Health decided to construct new building for CBR center.

## **Visegrad**

### ***Current Condition of the Building***

a) Use of building

Municipal gymnasium.

b) Structure

Reinforced concrete rigid frame structure + steel three dimension truss roof.

c) Proposed area

A part of administrative quarter such as staff entrance and hall, ticket office, small and large office rooms, staff toilet, sweepers room, most part of storeroom for athletic

gears, former electrical room and so forth.

d) Size: 225m<sup>2</sup>.

e) Deterioration

New building partly under construction and not yet in use.

### ***Facility Utilization***

a) Security of access

One of two staff entrance will, in principle, be exclusive use by CBR center. Since there is no difference in height between the floor level and the ground level, no slope way is needed. However, as the doorsill is a big obstacle for wheelchair to move, it shall be removed or the problem shall be solved by any other manner.

b) Room arrangement

A new partition in the entrance hall will provide a waiting room. The partition walls between the ticket office and the office room will be removed, and a new partition will be provided to make space for the reception and nurse station and the consultation examination room. The large office room will be used for the thermotherapy room without renovation. The athletic gears storage room will be renovated to the electrotherapy room, and the former electrical room will be the therapeutic exercise room.

### ***Renovations***

a) Exterior

Exterior wall finish of the former electrical room.

Repairing of wall finish around the windows to be newly provided to the athletic gears storeroom.

b) Interior

New interior finishes in the former electrical room.

New ceiling finish in the athletic gears storage room.

Partial changes of partition walls and following interior finishes and optimizing of electric, plumbing and sanitary installations.

c) Windows

Fitting of new wooden windows to the former electrical room and the athletic gears storeroom.

## **Ugljevik**

### ***Current Condition of the Building***

a) Use of building

Main building of DZ.

b) Structure

Reinforced concrete + brick wall structure rigid frame structure, 2 stories building of twin corridor plan.

c) Proposed area

Rooms facing to the south corridor such as director's room, consultation room, chief nurse's room, waiting rooms, internal medicine consultation and examination room and core rooms between two corridors.

d) Size: 171 m<sup>2</sup>.

e) Deterioration

The building was completed in 1987, thus, the building is relatively new. However, most windows are damaged in opening mechanism of Venetian blind that are equipped between double glass window leaves and also in fitting condition. In addition, the state of deterioration of interior finishes and building installation is reasonable to the lapse of time.

### ***Facility Utilization***

a) Security of access

There are two entrances in the building. The west one is close to the facility proposed for CBR center and will be commonly used with other department. A slope way will be constructed at a side of the existing approach way to overcome 50cm difference in height.

b) Room arrangement

The back part of the facility consisting of two consultation rooms, a sectional waiting hall, a pharmacy and respective areas of corridor will be combined to use for therapeutic exercise room. Other rooms will be used for the physiotherapy room, the consultation examination room, the reception and nurse station and waiting room with less partition change. The two water areas between two corridors will be used for the toilets including that for wheelchair users and the thermotherapy room.

### ***Renovations***

a) Exterior

Construction of a new slope way.

b) Interior

Changes of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Dismantling of window leaves, repairing, repainting, resetting and adjustment.

## **Gacko**

### ***Current Condition of the Building***

a) Use of building

Main building of DZ.

b) Structure

Stone (or brick wall stone finish) wall structure, two stories at south wing and single story at the north wing.

c) Proposed area

Rooms of physiotherapy department and surrounding area on the ground floor of the south wing.

d) Size: 115 m<sup>2</sup>.

e) Deterioration

Except for considerably severe blistering of plaster on wainscot that may be caused by the cold of winter, there is no severe damage other than deterioration reasonable to the lapse of time.

### ***Facility Utilization***

a) Security of access

The center entrance of the south wing will commonly be used with other department. A slope way is not needed to install because there is no difference in height between the floor level and the ground level. Some repair of pavement will be sufficient for wheelchair movement.

b) Room arrangement

A part of the entrance hall will be used as the waiting room of CBR center. Another part of the entrance hall and the existing therapeutic exercise room will compose the reception, nurse station, the consultation examination room and a corridor to connect other rooms. The existing therapeutic exercise room and the adjacent staff room will

compose a new therapeutic exercise room. The existing small vacant room next to the entrance hall will be used for electrotherapy together with the front corridor.

### ***Renovations***

a) Exterior

Repairing of existing pavement (by Srpska side)

b) Interior

Replacement of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Change of the existing glass channel window to aluminum sash pair glass windows.

### **Trebinje**

#### ***Current Condition of the Building***

a) Use of building

Building for TB ward of the municipal hospital.

b) Structure

Reinforced concrete rigid frame structure, 2 stories building.

c) Proposed area

Former X-ray room, adjacent two consultation rooms, toilets, corridor and the sub-entrance at the bottom of the corridor will be provided to CBR center.

d) Size: 141 m<sup>2</sup>.

e) Deterioration

Although some deterioration reasonable to the lapse of time is observed, there is little damage in the candidate facility as a whole other than stain of water leakage from the upper floor at the ceiling of the former X-ray room.

#### ***Facility Utilization***

a) Security of access

Since the sub-entrance is equipped with a slope way suitable for wheel chair, it will exclusively be used for CBR center.

b) Room arrangement

The two consultation rooms will be used for the reception and nurse station and the consultation examination room respectively. The existing toilet area will be used for

a toilet available for wheelchair users and a thermotherapy room. It is requested that the toilets located at another bottom of the corridor be commonly used if ordinary toilet is necessary. Wall will be opened to provide windows to the former X-ray room that has no windows. The room will be used for electrotherapy and therapeutic exercise. At a corner of the room, space for hydrotherapy will be separated.

### ***Renovations***

#### a) Exterior

Repairing of mortar peeled off and repainting at the wall of porch.

#### b) Interior

Changes of the partition walls and following renewal of interior finishes and optimizing of electric, plumbing, sanitary and heating installations in the former X-ray room and the toilet area.

#### c) Windows

Three sets of new aluminum sash windows in the former X-ray room.

### **Sipovo**

#### ***Current Condition of the Building***

#### a) Use of building

Main building of DZ.

#### b) Structure

Steel rigid frame structure, two stories building T-shaped plan.

#### c) Proposed area

Area at the end of the north wing on the ground floor; waiting hall of school medicine department, pediatric clinic, vaccination room, diabetes consultation room and its waiting hall, toilet and north entrance.

#### d) Size: 108 m<sup>2</sup>.

#### e) Deterioration

Damages by the war were renovated as to repair of roof, interior repainting and change of broken glasses after the war. Deterioration is, however, still observed at windows, part of interior finishes and building installations.

#### ***Facility Utilization***

#### a) Security of access

An approach way including a slope way will be constructed at the north entrance and CBR center will exclusively use it as the main entrance.



b) Room arrangement

A part of the waiting hall adjacent to the windbreak entrance and also a part of the vaccination room will be used for the waiting room of CBR center and the remaining part of the vaccination room will be the reception and the nurse station. The consultation examination room will use the existing pediatric clinic and the therapeutic exercise room will use a part of the existing waiting hall of the school health department. The diabetes consultation room and the remaining part of the waiting hall adjacent to the windbreak entrance will be used for electrotherapy. The existing toilet area will be renovated to a toilet also available for wheelchair users.

***Renovations***

a) Exterior

Construction of a new approach way including a slope way.

Repainting of porch roof.

Renewal of porch floor.

b) Interior

Changes of partition walls.

Repairing, repainting and adjustment of doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Dismantling of window leaves, repairing, repainting, resetting and adjustment.

**Teslic**

***Current Condition of the Building***

a) Use of building

One of five DZ buildings, some rooms of which are being used for doctors' consultation rooms, a nurses' room and night duty rooms.

b) Structure

Brick wall structure, two stories building.

c) Proposed area

Whole building.

d) Size: 472 m<sup>2</sup>.

e) Deterioration

This building was built in 1953 and has deteriorated in all respects such as the structure,

finishes and building installations. It is judged that the building is approaching to the limit of service life. Severe blistering of plaster that may be caused by freezing of moisture contained or the dew condensed on the surface is observed on wainscot. Mortar peels off exterior wall surface at wide range. Window frames, rails and stiles are getting thinner. In addition, water leakage from exterior wall, water area on the first floor and heating pipes are also noticed.

### ***Facility Utilization***

Although the building is severely deteriorated, it will be survived by full renovation, because CBR center is required in this region, while another facility cannot be obtained.

#### **a) Security of access**

The existing entrance will be used as the main entrance of CBR center, where a slope way is necessary because there is only a staircase for the difference in elevation at 60cm between the ground and the floor. However, the building is close to the inner road of DZ compound and there is no space to construct a slope way in front of the main entrance. Thus, it will be constructed at the backyard of the building, where a sub-entrance is provided to the connecting corridor between this building and the main building of DZ, and moreover, the space of the area is sufficient to construct a slope way.

#### **b) Room arrangement**

All rehabilitation therapy rooms will be arranged on the ground floor, and the first floor will be used for a base of various CBR activities and seminar rooms, a meeting room and a resource room will be provided.

### ***Renovations***

#### **a) Exterior**

Re-plastering of mortar and repainting on the entire part of exterior walls and foundation walls.

Changes of down spouts and roofing of porch.

Construction of new scarcements and a new slope way.

Renewal of intake pipes.

#### **b) Interior**

Changes of partition walls.

Changes of door frames and doors.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

c) Windows

Removal of all existing windows and replace of them with new ones.

**Kasindo**

***Current Condition of the Building***

a) Use of building

One of buildings owned by Kasindo Hospital and the rehabilitation department, pediatric department, ophthalmology department and Haemodialysis department use it.

b) Structure

Reinforced concrete + brick wall structure, two stories building

c) Proposed area

Rooms that rehabilitation department and pediatric department department presently use.

d) Size: 245 m<sup>2</sup>.

e) Deterioration

The building is deteriorated over all. Cracks that may be caused by differential settlement are observed between the roof slab and walls and at corners of rooms. Part of the roof slabs of pediatric department are severely worn and torn out like metal eaten away with rust. As a result, rusted reinforcement bars are exposed.

***Facility Utilization***

a) Security of access

A sub-entrance is adjacent to the rehabilitation department so that no windbreak entrance can be constructed due to the limit of space there. Therefore, the CBR center will commonly use the main entrance of the building. It is not necessary to construct a slope way because the difference in elevation between the ground and the floor is negligibly small and only repair of existing pavement will be conducted.

b) Room arrangement

Basically the facility will be utilized in accordance with the present room arrangement with little change of partition walls. The therapeutic exercise room will be used for the same purpose and the thermotherapy room and staff room will be used as electrotherapy rooms. The doctor's room will be used for a new thermotherapy room without partition wall changes. The toilet for staff, which is not so sanitary with insufficient condition for the ventilation because of the bad location without windows, will be relocated and the space will be open to the corridor cum waiting corner.

## ***Renovations***

### a) Exterior

Repairing of deteriorated concrete roof slab above pediatric department.

Changes of roofing materials above pediatric department and the therapeutic exercise room.

### b) Interior

Changes of partition wall for improved toilet area.

Changes of doorframes and doors of pediatric department.

Repairing, repainting and adjustment of other doors including change of damaged hardware.

Renewal of interior finishes.

Optimizing of electric, plumbing, sanitary and heating installations.

### c) Windows

Change of entire windows of pediatric department.

Washing, touching up with paint, changing damaged hardware and adjustment.

## **2-2-3 Basic Design Drawing**

See the attached drawings.

## **2-2-4 Implementation Plan**

### **2-2-4-1 Implementation Policy**

The Project will be carried out after the signing of the Exchange of Notes (E/N) by the two governments concerned in accordance with Japan's Grant Aid Scheme.

After the Notes are exchanged, the entire scope of the Project from renovation work of CBR centers, installation of equipment and inspection to procurement should be completed smoothly and promptly. Therefore, plans involving work and personnel should be formulated so that each stage of the Project can be executed efficiently and effectively.

To ensure smooth execution of the Project, a time and location should be arranged for representatives from the relevant organizations of the government of the Republic of Srpska (e.g. the Ministry of Health and Ministry of Foreign Affairs) and from CBR centers to meet with staff from a Japanese consulting firm and supplier of the equipment, so as to discuss plans and other details.

After the project is approved by the governments of both countries involved and the

Exchange of Notes is concluded, a Japanese consulting firm that is currently under contract with the Ministry of Health of the Republic of Srpska will oversee the plan's execution, renovation works as well as actual procurement of the equipment. Also, a contractor will be determined on the basis of open tender as specified in the official notes, and this contractor will be responsible for renovation works for CBR centers, procurement and installation of the equipment.

### **(1) Party responsible for the implementation of the Project**

The responsible party in Srpska is the Ministry of Health. The Ministry of Health will act as the contracting party of Srpska, and shall be responsible for implementing the Project. The Ministry of Health is required to cooperate in regard to the appointment of the responsible persons concerned for CBR centers, renovation works of facilities and work necessary for unpacking, delivery, and assembly/trial run of the equipment.

The Ministry of Foreign Affairs and the Ministry of Health shall be responsible for customs clearance, internal transportation, and so forth.

### **(2) Consultant**

Following the signing of the Exchange of Notes (E/N) between two governments concerned, the Ministry of Health shall sign a consultation agreement with a Japanese national consulting corporation for the detailed design of the renovation works and the equipment to be procured. The work will also be associated with tendering and supervision of project implementation. The agreement will be verified subject to approval by the Japanese Government. The consultant shall be responsible for implementation of the following work under the agreement:

#### 1) Detailed design phase

The final confirmation of the Project, reviewing the content of the renovation works and the drawing as well as the equipment specifications, preparation of tender documents, supervision of tender procedure, and evaluation of the contents of the tender

#### 2) Implementation phase for renovation work

Supervision to contractor, advice and control.

Prior to the commencement of the renovation work, the renovation work plan and

working drawing submitted by the contractor should be checked in order to confirm the appropriateness of work schedule, quality control plan and planned renovation work method. In progress of the renovation work an on-site supervisor will confirm the content of the works. After completion inspection should be conducted to check that the completed work meets the design specifications.

3) Implementation phase for equipment supply

Supervision of project implementation including pre-shipment inspections, supervision of delivery, supervision of installation work and trial run of equipment should be conducted.

**(3) Contractor**

Based on the Exchange of Notes (E/N) and in accordance with the “Guidelines for Procurement” under Japan’s Grant Aid Scheme, the Ministry of Health shall sign an agreement regarding renovation work of facilities and procurement of equipment with Japanese national contractor that shall be determined on the basis of open tenders on the equipment to be provided. The agreement shall be verified subject to the approval of the Japanese Government. The contractor shall implement the following tasks under the agreement:

- Renovation work of CBR centers
- Procurement, transport, and delivery of the equipment
- Installation of the equipment, and technical guidance concerning operation, maintenance, and repair

**2-2-4-2 Implementation Conditions**

All possible measures shall be taken to ensure the quick and efficient completion of procurement of construction materials, delivery to the site and repair work regarding renovation of facilities, as well as transport, delivery, and installation of the equipment regarding equipment. As the project sites are located in 17 rural cities of Srpska, plans for procurement of construction materials, transport, renovation work and delivery and installation of the equipment shall be carefully drafted. Therefore, consultations with officials concerned are essential prior to customs clearance, internal transportation, and removal of old equipment, storage area for the procured equipment, route for carrying them in, etc.

### **2-2-4-3 Scope of Works**

The work provided for the Project by the Recipient Country and covered by Japan's Grant Aid will be described below.

- 1) Work to be carried out by the Recipient Country
  - Removal of existing equipment
  - Connection of utilities such as electricity, water supply, drainage, etc. at the designated points for the equipment to be procured
  - Installation of new gate
  - Preparation of storage area for the equipment to be procured until the time of installation
  - Preparation of the route for carrying construction materials and the equipment
  - Application and acquisition of construction permit
  
- 2) Work to be covered by Japan's Grant Aid
  - Investigation of construction materials
  - Renovation work for the CBR centers judged to be renewed (Renovation work will be conducted only for inner wall and does not include renewal of outer wall.)
  - Procurement of the equipment
  - Transport of the equipment to each CBR center
  - Delivery, installation, and trial run of the equipment
  - Technical transfer on operation and maintenance of the equipment

### **2-2-4-4 Consultant Supervision**

A Japanese national consulting firm shall provide fair guidance, advice, and coordination throughout the detailed design phase and implementation phase of the Project. Furthermore, this consulting firm shall do whatever is necessary in order to ensure the smooth implementation of the Project in accordance with the Japan's Grant Aid Scheme and the Basic Design Study Report. The consultant will be deemed to have completed its work when the renovation work of facilities and the installation of equipment are completely finished, it is confirmed that all conditions of the contract have been met, the official delivery of the equipment is witnessed, and the approval of the Recipient Country is obtained.

### **Framework of Implementation Supervision**

- 1) Manage the completion dates for installation, maintaining close contact among all parties concerned
- 2) Supervise renovation work and installation work
- 3) Inspect if the completed renovation work meets the design specifications. Issue instruction to the contractor for appropriate completion in case of any modification being required
- 4) Suggest for maintenance after the official delivery of equipment

#### **2-2-4-5 Procurement Plan**

##### **Plan concerning procurement of the equipment**

###### **(1) Procurement of the equipment**

Most of the equipment will be procured within Japan, but certain items that will require regular maintenance, frequent procurement of spare parts and consumables may be acquired from third-party countries. Also, following the official delivery of the equipment, the Ministry of Health shall be promptly provided with technical service, spare parts, and consumables at a reasonable price. The procurement plan for the equipment shall be drafted so as to favor either manufacturer that have agents capable of providing technical service (repair and maintenance services) in the Recipient Country or in neighboring countries, or those that have a sufficient stockpile of spare parts and consumables.

###### **(2) Inland transportation route**

This Project shall deliver equipment to 17 CBR centers scattered throughout Srpska. All equipment both procured from Japan and third-party countries will be unloaded at the port of Kopar in Slovenia and transported overland to Banja Luka by way of Croatia. Then equipment will be sorted into containers for distribution by truck to 17 CBR centers. Delivery schedule will be coordinated with progress of renovation work.

By the reason that the country is very mountainous and road condition is not good, transportation should be completed before winter in order to ensure smooth delivery of equipment to each center. When equipment is to be delivered during winter, contingency plans need to be drawn up to deal with potentially poor road conditions.



### **(3) Plan of the dispatch of engineer**

In principle personnel, including laborers required for the installation of equipment shall be secured in the vicinity of each CBR center. This Project procures the basic equipment not requiring special skills and techniques for installation and operation guidance. Therefore, after the equipment will be unloaded at the each site, local laborers shall delivery and install the equipment under the guidance and supervision by installation manager. The procedure for test runs and adjustment of the equipment will be planned to allow enough time for technical transfer to the doctors and engineers concerned at each CBR center.

### **Plan concerning renovation**

#### **(1) Implementation of renovation and construction materials**

The product quality of construction materials available in the local market is not high. However, the content of renovation work under this Project does not require high-grade works. Thus, all construction materials shall be procured from the local market.

Plan concerning construction materials is as follows:

1) Following materials are produced in Srpska:

Heat insulation material, timber, aggregate (sand and gravel) for concrete, cement, radiator (cast iron type), boiler (for combustion of solid for coal and firewood) and brick. Other construction materials are imported from neighboring countries (Italy, Yugoslavia, Austria and Germany, etc.) and can be procured taking one month from the order to obtaining.

- 2) About 80% of domestic demand of brick is imported from Austria and there is no difficulty in obtaining though rate of self-sufficiency is low.
- 3) General construction materials including the above-mentioned imports can be obtained in local construction materials shop excluding the resin product (joiner, baseboard etc.) a special aluminum product (floor and ceiling hatch, joiner, etc.).
- 4) A stainless steel product is not so used as often as other European nations. However, it is possible to procure it in the local market.
- 5) All lavatories such as toilet bowls and washbasins, etc. can be procured at the local market.
- 6) The pipes of the plumbing can be procured in the local market.
- 7) The electrical work's materials such as an electric switchboard, the electric wire and the lighting fixture can be procured in the local excluding a special thing.

**(2) Plan of the dispatch of engineer**

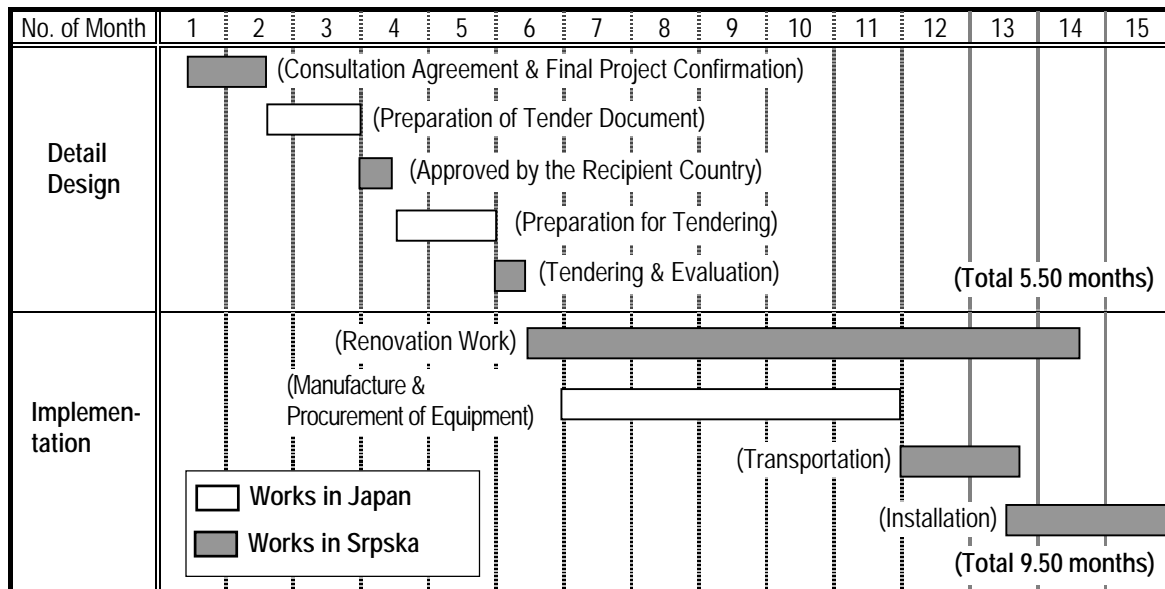
Excluding 1 CBR center (Sokolac) to be renovated by Srpska side, 16 CBR centers require renovation of their facilities. In order for renovation work for these centers to be implemented as planned, 16 centers shall be divided into 4 areas and local managers will supervise each area. Organizationally, under the Japanese firm, which shall be totally responsible for both procurement of equipment and renovation of facilities, this Project will place 1 local company having rich experience and ability to manage the renovation work plan and to assign from the company 4 area managers. Then, local construction companies will conduct renovation works for responsible area under the guidance of area managers.

**2-2-4-6 Implementation Schedule**

When the time arrives for the Project to be carried out, the consulting firm will investigate the specifications of the equipment. Then, the supplier of the equipment, who will be decided through open tender, will procure the equipment.

The Project implementation schedule is given in **Table 2-3**.

**Table 2-3 Project Implementation Schedule**



**2-3 Obligations of the Recipient Country**

The Government of Srpska shall perform the following in accordance with the Exchange of Notes, for the smooth implementation of the Project.

- 1) to exempt customs duties, internal taxes, and other fiscal levies that may be imposed

in Srpska with respect to the supply of the equipment and the provision of services under the verified contracts;

- 2) to ensure both prompt customs clearance in Srpska and a procedure for internal transportation therein of the medical equipment brought from Japan and third-party countries;
- 3) to provide Japanese nationals and third-party country engineers working on the Project with every convenience to facilitate their entry into the Srpska and their stay therein;
- 4) to ensure the issuance of permits required by the laws of the Srpska for the implementation of the Project, and other permits, including tax exemptions;
- 5) to ensure that the equipment procured under the Grant Aid Scheme is maintained and used properly and effectively for the Project; and
- 6) to confirm that the Srpska bears all expenses except for those agreed to be covered by the Japanese government.

#### **2-4 Project Operation Plan**

Each CBR center has been able to have a sufficient number of doctors, physiotherapists, and nurses having the technical expertise necessary to operate the equipment to be procured. Furthermore, the dedicated staffs of the administrative and accounting departments, which are managed separately from the medical departments, are making every effort to ensure sound administration.

The costs of operation and maintenance, including spare parts and consumables, are expected to increase with the replacement the obsolete existing equipment and procurement of new equipment. **Table 2-4** summarizes the provisional estimation of the total management costs of main items. The estimation period is for eight years from 2004 to 2011; the operating ratio is 50% for 2004, 70% for 2005, 90% for 2006, and 100% for 2007 and thereafter.

**Table 2-4 Operation and Maintenance Cost**

(Novi Grad)

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Kozarska Dubica)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,378	1,929	2,480	2,756	2,756	2,756	2,756	2,756
Total Expense	3,597	5,750	7,188	7,908	7,908	7,908	7,908	7,908

**(Srbac)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,058	2,882	3,705	4,117	4,117	4,117	4,117	4,117
Expenses for Lighting & Heating	842	1,178	1,515	1,683	1,683	1,683	1,683	1,683
Total Expense	2,900	4,774	5,934	6,514	6,514	6,514	6,514	6,514

**(Laktasi)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Kotor Varos)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	933	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,460	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	2,393	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Derventa)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Samac)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,130	1,582	2,034	2,261	2,261	2,261	2,261	2,261
Total Expense	3,349	5,403	6,742	7,413	7,413	7,413	7,413	7,413

**(Zvornik)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Vlasenica)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Sokolac)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Visegrad)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Ugljevik)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Gacko)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	1,546	2,164	2,782	3,091	3,091	3,091	3,091	3,091
Expenses for Lighting & Heating	1,398	1,958	2,517	2,797	2,797	2,797	2,797	2,797
Total Expense	2,944	4,836	6,013	6,602	6,602	6,602	6,602	6,602

**(Trebinje)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	2,219	3,821	4,708	5,152	5,152	5,152	5,152	5,152

**(Sipovo)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	0	0	0	0	0	0	0
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,365	1,912	2,458	2,731	2,731	2,731	2,731	2,731
Total Expense	3,584	5,019	6,452	7,169	7,169	7,169	7,169	7,169

**(Teslic)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

**(Kasindo)**

Year	2004	2005	2006	2007	2008	2009	2010	2011
Spare parts	0	714	714	714	714	714	714	714
Consumables	2,219	3,107	3,994	4,438	4,438	4,438	4,438	4,438
Expenses for Lighting & Heating	1,522	2,131	2,740	3,044	3,044	3,044	3,044	3,044
Total Expense	3,741	5,952	7,448	8,196	8,196	8,196	8,196	8,196

Provisional calculations indicate that the management cost can be comfortably covered by the income expected after the installation of new equipment. However, this all depends on the efforts of DZs. Therefore, early response and stable supply system for maintenance, spare parts and consumables are important by taking account of the geographical conditions of all centers in Srpska.

Moreover, the sound management will strengthen the financial self-reliance of CBR centers as well as facilitate the improvement of medical service throughout Srpska.

## **Chapter 3**

# **Project Evaluation and Recommendations**

## **Chapter 3 Project Evaluation and Recommendation**

### **3-1 Project Effect**

#### **(1) Direct Effect**

##### **1) The Contribution to Improving Health Care Standard in Srpska**

In case that a network of CBR centers covering the whole country is set up under this Project, the patients living in mountainous regions or distant places who have not taken with medical services will be able to receive appropriate rehabilitative care. Thus, this project will not only give a big support to improve health care standard in the country, but also contribute to promote public health of people of Srpska. Furthermore, if, under this Project, obsolete facilities and equipment of the existing rehabilitation departments are updated and well-equipped rehabilitation facilities are established newly, the patients who are referred to the distant secondary and/or tertiary medical facilities and those recuperating at home will be able to benefit from the services within their daily lives.

##### **2) Provision of Suitable and Effective Treatment and Consultation by Control of Accurate Patient Data**

Now the records of the patients who come to the rehabilitation department are kept in a ledger called "Protocol." Within this ledger, the name of the patient and doctor in charge and the details of treatment are briefly recorded. However, the data management of the medical records of each patient and other information is insufficient and hard to obtain the accurate medical histories and precise numbers of patients coming for treatment, which is difficult to carry out effective and suitable treatment and consultation according to the records of the patients at present.

If the computer is procured, it will be possible to create an administrative system that can manage patient details and database to control accurate patient data. Owing that, each CBR center can provide more appropriate and effective treatment and consultation to the patients. Moreover, as the collection and analysis of patient data are carried out on the country scale, the Ministry of Health will be able to use the results for the decision making of the accurate medical and health care policies.

##### **3) Provision of Continuous Rehabilitative Care without Regional Disparities**

In order to receive treatment, many patients who want to go to the CBR centers are



now forced to rely on ambulances, the family car, a neighbor's car or public transport such as the infrequent bus service. Furthermore, the current situation for patients who cannot use these means of transportation such as those in mountainous regions and the outlying districts, is that they can only wait at home until they can get an opportunity for treatment, even if the need for immediate treatment has been confirmed. Procurement of vehicles for patient transportation under this Project increases the opportunity of the patients to access rehabilitation services, especially for those who living in distant areas (40-50km from CBR center), and also it eases economic burdens on these patients caused by traveling. Moreover, though people who have difficulties in walking had few chances to receive treatment because of restricted transportation means so far, they will be able to benefit from continuous rehabilitative care. If this Project will contribute greatly to create a rehabilitation network in Srpska, abolishing regional disparities in medical services, with most effective utilization of facilities and equipment procured under this Project.

## **(2) Indirect Effect**

### **1) Improving Quality of Entire Health Care System in Srpska**

The rehabilitative care system in Srpska is not functioned well compared with that of the Federation. However, if each CBR center provides suitable services and a network of rehabilitative care is set up by the implementation of this Project, the entire quality of rehabilitative care in Srpska will be improved. Along with implementation of the Project, technical assistance including training of human resources and technical consultation under the cooperation between Japan and Canada is under consideration. By creating this synergetic effect, the patients who go to the department of general medicine or surgery to receive rehabilitation treatment and those who are forced to wait at home will be provided with high qualified rehabilitative care either at CBR center or at home, therefore necessity for patients to go to departments of general medicine decreases. As a result, each department will be able to concentrate on the medical services that they should provide originally. This leads to improvements of quality of entire health care system.

### **2) The Contribution to the Priority Plan “Reconstruction Plan of Health Care System”**

In order to reconstruct the postwar health care system, the Ministry of Health has

proceeded with Strategic Plan for Health System Reform and Reconstruction 1997-2000 in 1997, being promoted by WHO. This plan is aimed at 1) improvement of efficiency of health care system, 2) reform of health insurance fund system, 3) improvement of primary health care services, 4) improvement of health care services of upper grade medical facilities, 5) upgrading rehabilitative care, 6) enhancement of public health including measures against infectious diseases, 7) creating information system in the health care field, 8) strengthening strategies for medical supplies, 9) upgrading medical education. Implementation of this Project will greatly contribute to achieve one of the main goals of the Reconstruction Plan – 5) upgrading rehabilitative care.

### **3-2 Recommendations**

The Ministry of Health is pushing ahead with a plan of creating a network for rehabilitative care, establishing 22 CBR centers throughout the country. To achieve this purpose, allocation of necessary running budget for each CBR center and arrangement of suitable medical personnel are the responsibilities of Srpska side, while renovation of facilities and procurement of equipment will be covered by the Japan's Grant Aid. Now the Ministry of Health is drawing up a special budget amounting 880 thousand KM (40 thousand KM for each CBR center) for the opening of CBR centers and this budget will be allotted under individual contract between each CBR center and health insurance fund. However, the operation cost in each CBR center will differ in geographical condition, the number of patients, the level of services etc., therefore, the Ministry of Health has to make an effort to secure necessary budget for CBR centers with grasping each center's activities.

The Ministry of Health is planning to allocate personnel and employ new staff to arrange appropriate personnel to CBR centers, however, the constant endeavor to improve the level of medical services is necessary, as recent medical technology is progressing rapidly. Fortunately, technical cooperation toward this Project supported by Japanese and Canadian government is being discussed, therefore, improvement of medical standard is expected, using the opportunity that medical personnel can participate in various technical transfers.

It is important to create and popularize an administrative system and database that can manage patient details in order to control accurate patient information, using the computer procured under this Project. Moreover, the Ministry of Health is expected to make best use of the collected data for the decision making of the accurate health and

medical care policies.

Vehicles for patient transportation should be used for picking up patients at their homes and transport them to CBR centers and for home visiting care. In order to utilize the vehicles effectively, it is desirable to draw up plan for transportation service and keep a record of the services.