

JICA ETHIOPIA

Activity Report

Vol 3

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1. Teaching International Lifesaving technique

International Lifesaver Licence Requirments

Requirments	Royal Life Saving Bronze Medallion certificate	JLA Basic Pool Life Gard Licence	JLA Advance Pool Life Gard Licence
50m	-	50sec	45sec
400m	13min	10min	8min
Under water	-	15m	25m
Treading water	-	2min	5min
CPR	○	○	○
First Aid Skill	○	○	○
Spinal Injuries	○	-	○
100m freestyle	○	-	-
100m breaststroke	○	-	-
100m survivalbackstroke	○	-	-
100m sidestroke	○	-	-
Timed tow Tow a patient 50m	3min15sec	-	-

References: Japan Lifesaving Association(JLA) , Royal Life Saving Bronze Medallion certificate

~Background~

From Feb to Apr (After drainage the water) we have been working on cleaning and repairing the swimming pool to improve the environment. And then we kept training for their physical strength. But from May the staff gradually lost their motivation and declined their physical strength, because there was no notice that the pool will fill with the water. So I thought that we should recognize our duties and our goal. After discussing we decided to achieve the international lifesaving technique level. According to the above contents, it is not easy to get all requirements. Especially, they need to take the time for achieving the 50m and 400m time. I think that if they continuously practice the swim lesson they will be able to achieve the time. However, I worry about that they have 5 months untraining span and their elder ages. Therefore, I gave the training before the pool was ready. Training contents and objectives are below.

~Training contents~

- (1) Running (The cardio pulmonary function improvement)

When we swim our breath timing is limited. Because of this to decline the respiratory function directly influences our swimming time. So we practice running to improve the cardio pulmonary function.

- (2) Stretching the body (The body flexibility improvement)

As they have never swum the 400m continuously, I think body flexibility is one of the most important to improve their swimming ability, especially shoulder and ankle parts. So I explained which part of muscle is useful in the swim while I taught them how to stretch the body.

- (3) Forming (The underwater posture improvement)

I coach them how to keep the posture in the water to swim efficiently.

- (4) Exercising (Strengthening the muscle)

We train some basic exercises like pushing up and chinning up. It is for not only strength the muscle but also control the body in the water.



2. First Aid training

~Objective~

The international lifesaving knowledge requires first aid skill, because the lifesaver must find the prevention of the accidents. But we cannot prevent all the accidents. Therefore, the lifesaver needs to learn the first aid skill.

~Aims of first aid~

The aims of first aid are:

- To provide reassurance and comfort situation to the ill or injured
- To prevent injury or illness becoming worse (cause no harm)
- To protect the unconscious patient
- To preserve life
- To promote recovery.

~The observance of first aid~

- To make sure that there is no danger to lifeguard no further danger to bystanders or the patients.
- Stabilizing the patient until professional help arrives
- Do not use medicine in principle
- Judgment of death is conducted by only medical doctor.
- The patient must be checked with medical doctor as rule

(1) Triangle bandage

I tell them basic triangle bandage technique.

- ① How to fold the bandage up small
- ② How to connect the bandage
- ③ How to hang arm

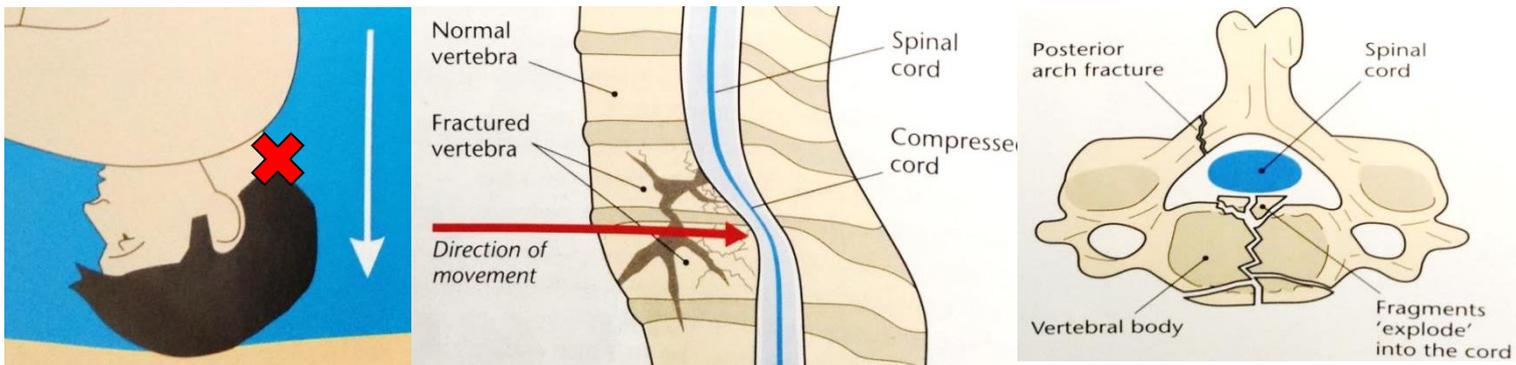
*Make sure to keep cleanly the bandage for treat the injured person quickly.



(2) Spinal injury

The most of critical (serious) accidents in the swimming pool is spinal injury by diving. This treatment is very important but difficult because if the lifesaver mistakes the treatment, the patient will be paralyzed.

We should take care to stabilize the patient and lift up the person from the water. And then, we should wait for emergency services.



~How to care the spinal injury in the water~

(2) Finding the spinal injury patient



(1) Checking consciousness and breath



(3) Stabilizing the head with arms



(5) Positioning the backboard under the patient



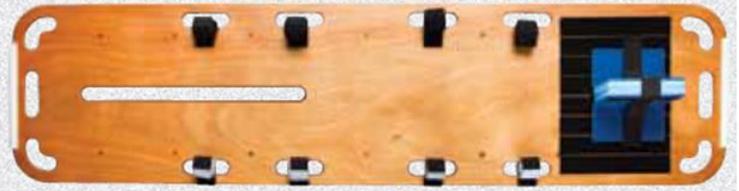
(4) Rolling the patient carefully



(6) Lifting up the patient



IMMOBILIZATION EQUIPMENT FOR VICTIMS OF HEAD, NECK OR SPINAL INJURIES



The backboard is the standard piece of rescue equipment used at aquatic facilities for immobilizing and removing a victim from the water. Backboards work best when they are equipped with:

- A minimum of three straps to secure the victim to the board.
- A head immobilizer device that can be attached to the top, or head-end, of the board.

Backboards vary in shape, size, buoyancy, number or style of body straps and style of head immobilizer device. Every aquatic facility develops its own backboarding procedures based on the facility type, equipment, number of rescuers available and local EMS protocols. Your facility should train you on using a backboard according to the facility's procedures.

How to care the spinal injury out of water~

*In other countries the patient is stabilized with Backboard and Neck stabilizer. But we don't have these materials. Instead of this, I instruct this treatment with substitute blanket for these materials.



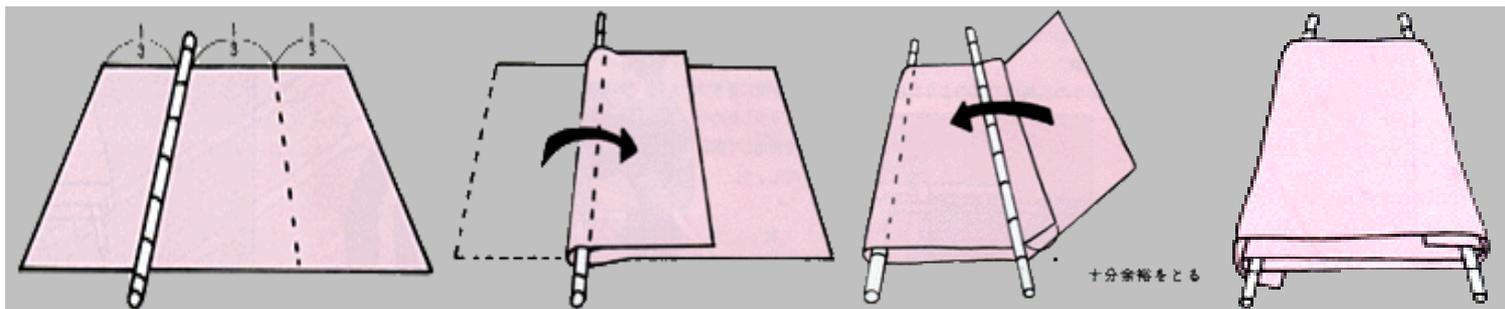
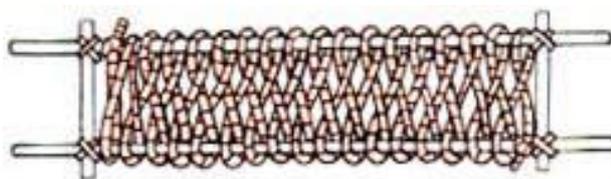
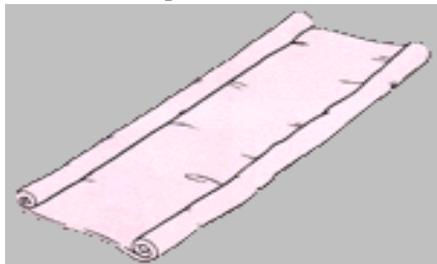
**Two blankets are donated by JICA (Japan International Cooperation Agency)*



(3)Lifting and carry the patient

After first aid the lifesaver needs to take over the patient to the emergency services. But there is no stretcher in the swimming pool. So I tell them how to make stretcher and how to carry the patient with blanket. I expect we will be able to carry the patient safely and quickly through this technique.

*Actually this technique is used in disaster area by emergency services in Japan.



~Result~

The staff would be able to deal with the accident properly. I hope this FA technique and knowledge will be utilized not only swimming pool area but also every sport area in our university.

~Feeling of staff~

After lesson I asked the staff what you thought of this FA technique. They said we do not have any knowledge and technique about First aid. So until this time we were obligated to warm the customer. But from now we will treat the patient properly and carefully.

~Next approach~

These FA techniques are basically used in foreign countries. However Medical situation is different for each countries and areas. So I think we need to get advice from medical doctor and communicate with emergency services.

3. Improving swimming pool environment

(1)Plastic bottle garden

~Cause~

During no water in the swimming pool, the staff decided to make garden with plastic bottle bricks by previous experience of repairing the fence.

~Result~

They made great gardens by themselves. I hope these actions will encourage for ecology movement to the people who came to the swimming pool.



(2)KAIZEN

~Cause~

In the staff room, there are some chemicals, ropes, and cleaning equipment on the floor directly like a heap. This situation is a cause of deteriorating materials. And then especially we need to manage the chemical. There are consistency chlorine, cooper sulfate and some detergents. Especially, consistency chlorine is very dangerous. Then if these chemicals are mixed, poisonous gas will be occurred. Therefore we have to clean up the store and control the chemical management.

~Solution~

- To make the cabinet and straighten up the materials in the room.



~Result~

We could make a great cabinet and we would be able to straighten up the materials in the room. When we make this cabinet at first we correct some scrapes in the university. So this cabinet was almost no expense. I hope we can prevent the chemical accident and the staff can use this room more conveniently by this cabinet.

Before



After



4. Management of the water quality

(1) To add the chlorine with plastic bottle

~Cause~

The water always should include a few chlorines in order to keep the water quality. But we couldn't control the water quality at the rainy season and preparation time of the swimming pool. We want to sprinkle the chlorine every day but the chlorine is very expensive. Therefore, it is impossible to sprinkle the chlorine many times.

In this case, the solid chemical is normally used in other country. As this solid chemical is dissolved into the water, it takes a long time. The chlorine in the water is keeps at the same.

~Solution~

I think out substitute the plastic bottle for solid chemical. At first, I drill some holes into the 1L bottle and then tied this 1L bottle to the 2L bottle with a rope. Finally I pour the chlorine into the 1L bottle.

~Result~

The chlorine was dissolved little by little through these holes. It took 3 days to dissolve all chlorine. Then the bottle floated around the whole pool by the wind. And then, the water quality was kept for a few days. Therefore we could understand that to sprinkle chlorine with plastic bottle is an effective method to control the water quality.



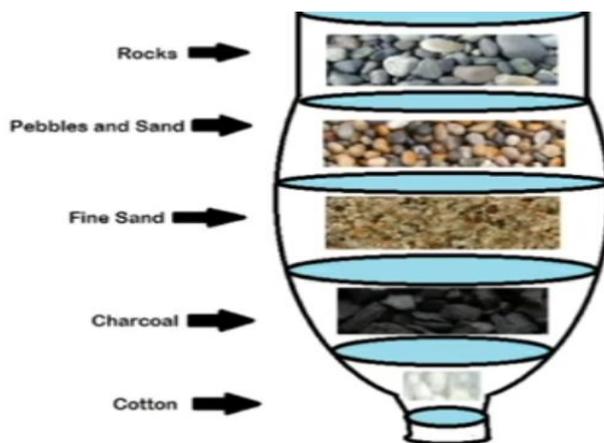
(2) Making the filter system

~Cause~

According to the observed record, we need to change the water every 3 months. And we need the large amount of chlorine to keep the water quality. The chlorine is very expensive. So it is difficult to prepare it constantly. And then, if the water is drained, some problems such as machine trouble happened. Actually there was no water in the swimming pool during recent 5 months. Therefore, we understand we need a filter system in our swimming pool to provide the services and for the water quality.

~Solution~

- To set up the circulate system in our swimming pool.



~First approach~

- (1) To experiment in filter
- (2) To experiment in pump system

~Result~

- (1) Experiment in filter was successful.

~the art of making filter~

We need to wash the every filter materials.

- (2) Experiment of pump was unsuccessful.

~alternative plane~

I found the best way to pump up the water that is a rope pump system. This system is very simple and it is easy for us to make it. See the attachment for details.



Dirty water ⇒ Clean water

According to experiments, we understand that we can filter the dirty water by even handmade material. On the other hand, it needs to make the void to pump water up. So we found difficulty of handmade pump. And then, I prepare the universal indicator for measuring pH level. When we try to measure pH among the green water, the pH level was alkaline. Then, filter water was also alkaline. Therefore we understand filter system is not very effective changing pH level. I hope we are going to collect exact data by this kind of indicate material.

~Next approach~

- To request the concerned department to make rope pump system.
- To prepare the materials for the filter such as water tank and charcoal.
- To find the most effective filter system by observing record.
- To select the best source of power on the rope pump.



Acidity Neutrality Alkalinity

~Concept of filtering system ~

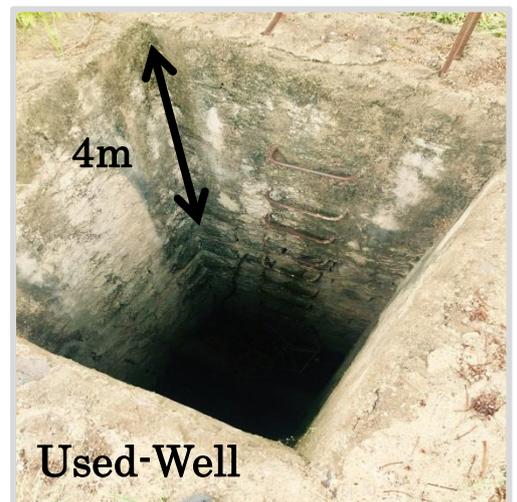
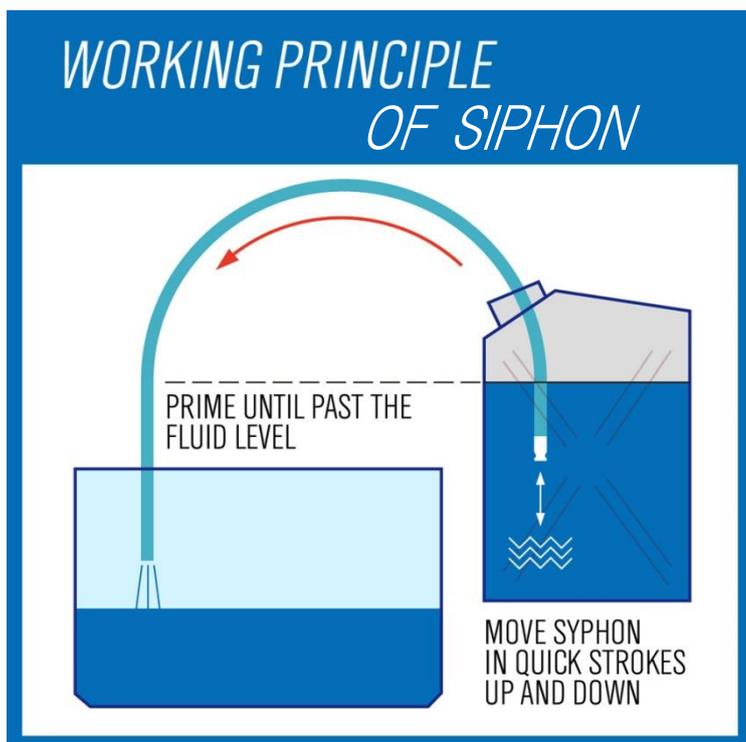
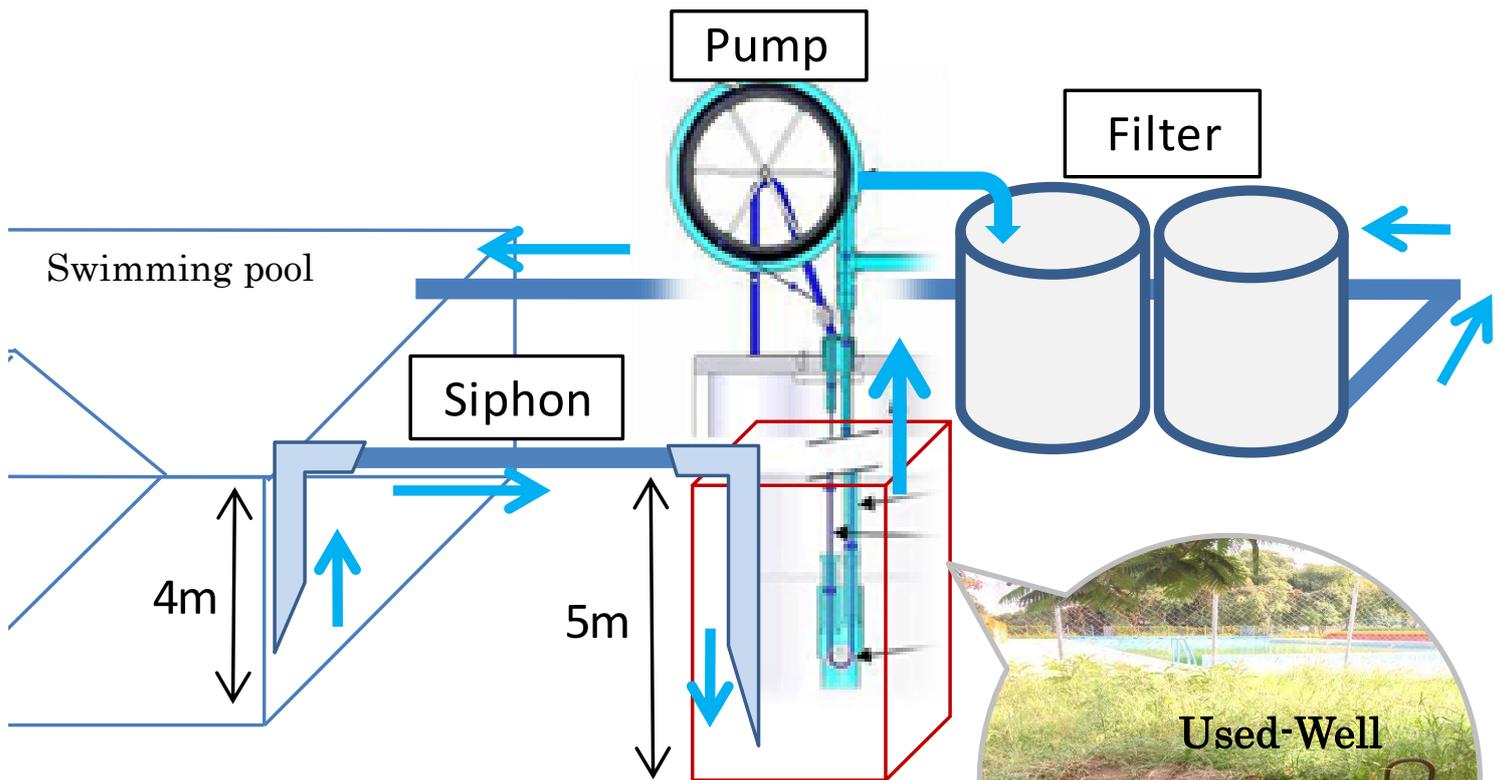
(1) Sustainable system

(2) Simple structure

(3) Easy maintenance

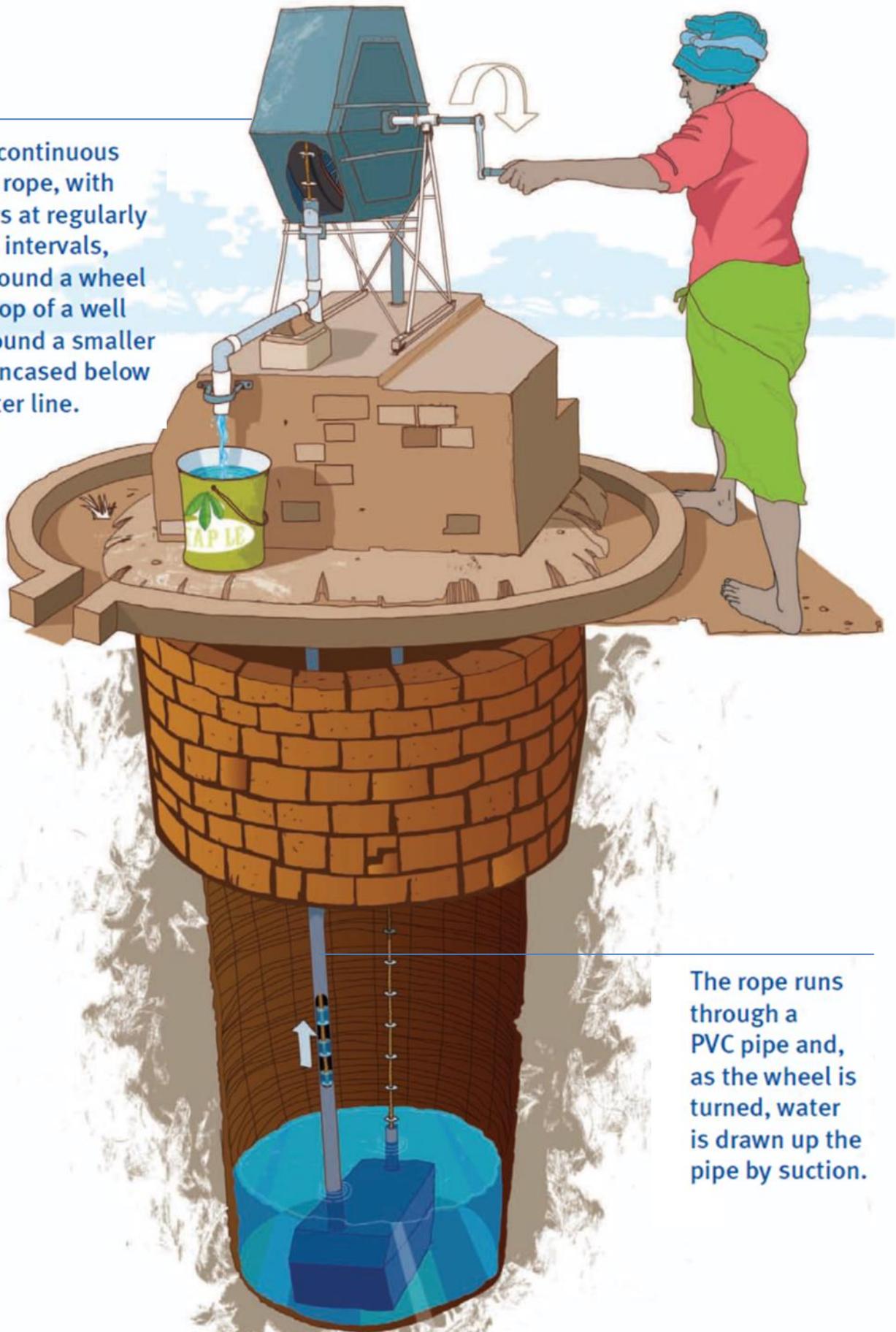
(4) No running cost

~Composition of filter system



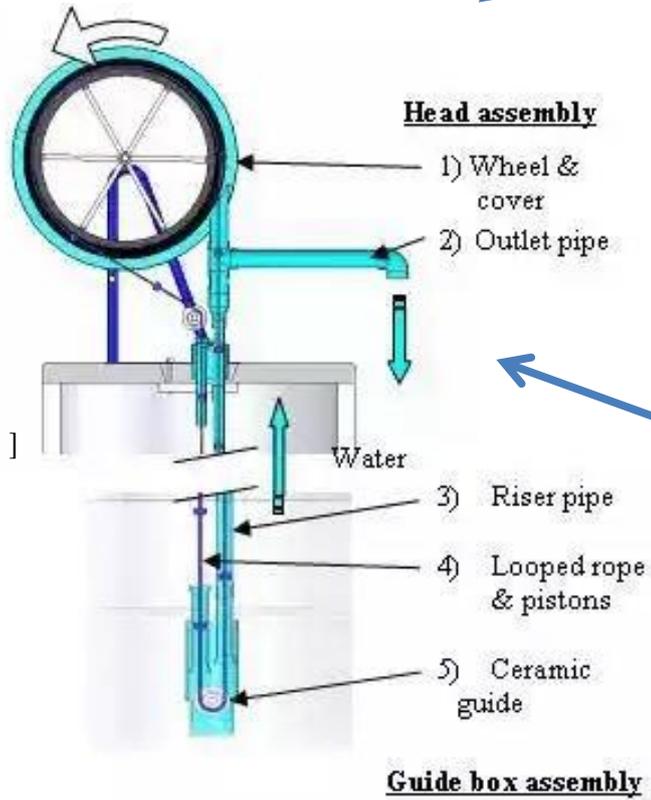
The rope pump

A long continuous loop of rope, with washers at regularly spaced intervals, runs around a wheel at the top of a well and around a smaller roller encased below the water line.



The rope runs through a PVC pipe and, as the wheel is turned, water is drawn up the pipe by suction.

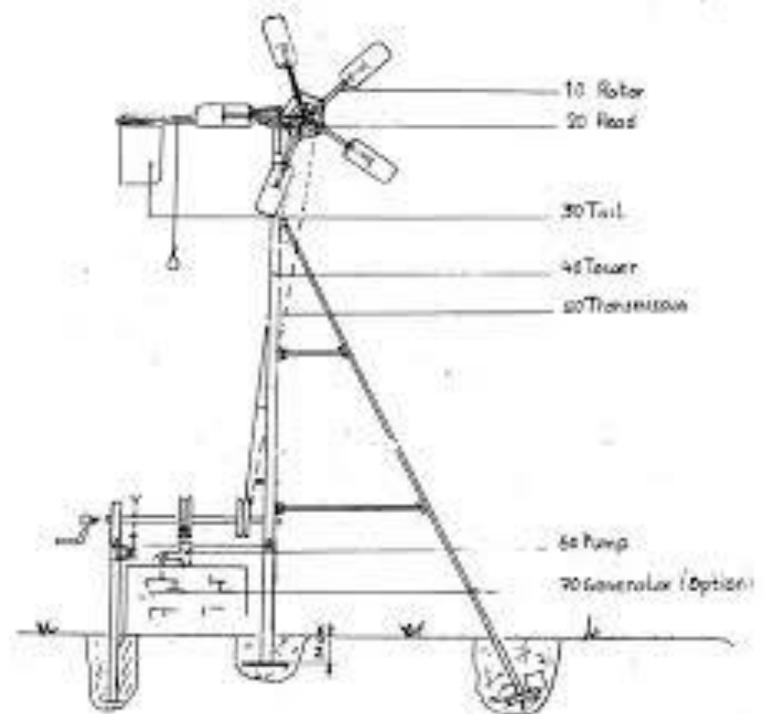
~Power base for rope pump~



(1) Solar rope pump system



(2) Windmill rope pump system



(3) Generator system



5. Repairing the generator

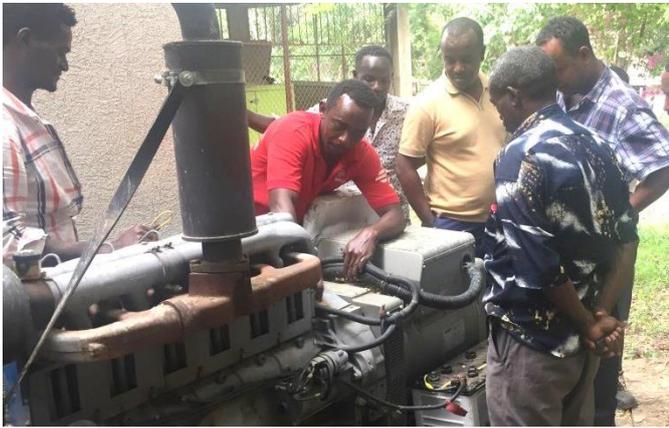
~Cause~

There is no water in our swimming pool. The reason is generator is broken. And then if we want to repair that generator we must bring that generator to Addis ababa. Therefore, the generator can not be repaired. So we need to find the additional generator and set up.

~Solution~

(1) Finding and repairing the additional generator.

(2) Lifting and carrying the generator



(3) Setting up the generator

(4) Changing the operation board.



~Result~

We could change some parts and repair the generator. Finally, after an interval of 5 months, the water comes to the swimming pool. I appreciate for this wonderful work with all. They supported me in tens of ideas, materials and skills. I am grateful for their cooperation.

