IX. LIVESTOCK IMPROVEMENT

Ministry of Agriculture, Livestock and Rural Development
Marigat Veterinary Department
P.O. Box 54, Marigat
13th April, 2000

The JICA Study Team

RE: Japanese Traditional Tools: CHOPP Cutter, Sickles

A farm visit was done at Zero-grazing unit on 7/4/2000 at Marigat. The above-mentioned equipment for procuring animals feeds was carried.

The presenters were as follow.
1. Dr. T. Nagamitsu, Livestock Specialist, JICA
2. Mr. H.S. Owino, Veterinary Department - Marigat
3. Mr. C.K. Yatich, Veterinary Department - Marigat

Farmers who attend are as follow:

Name of the attendants	No. of animals (Cattle)
(i) Salim Naimett, Farmer	6
(ii) Richard Sitoki, -do-	5
(iii) Daniel Kandagor, -do-	4
(iv) Esleen Rymond, -do-	3
(v) Musa Kemei, -do-	6
(vi) Joseph Cheptoo, -do-	4
(vii) Alfred Saukogi, -do-	5

The farmers who practice zero-grazing have planted *napier* grass using irrigation. Each farmer has got one acre of *napier* for feeding his animals. He also supplemented his animal feed by using other feed such as banana leaves and hay, which he buys at a cost of Ksh. 250.00 per bale of hay. The type of the animals that they have are not actually pure bred. They are having *Sahiwal* breed and *Ayrshire* breed. Production of milk is very low due to poor ways of feeding. Most of the milking animal produces up to maximum of 4 liters per day. This is a result of luck of enough feeds. From the observation done at the zero-grazing unit, it was found that most of the animal feed goes into waste due to lack of proper tools. The farmer's loss up to 25% of the animal feeds. The only tool available to farmers is a *Panga*, used in cutting the *nappier* and chopping as well as cutting bushes and trees. This type of tool is heavy and very dangerous.

Presentation

This was done in a systematic way. DR. T. nagamitsu, D.V.M. from JICA Study Team who is a specialist in livestock, demonstrated on how to cut the *napier* grass by using sickle. Using Japanese Luggage Carrier near the feeding troughs carried the *nepier*. Chopping of the *napier* by using Japanese traditional chopping tool was demonstrated to farmers on how it works. The feeds chopped were collected and given the animals on the troughs. Farmers were also given chance to chop the *nepier*. Women were also among the participants, on the demonstration site.

Farmers Opinion

The farmers who used the sickle found that it was easy to use the tool compared to the use of *Panga*. Women also gave an opinion that it was very easy and save a lot of time wasted in cutting the *nepier* The chopping tool was the modernized and simple to use. Every zero-grazing farmer would like to have one. Compared to use of *Panga* in chopping.

PCM

At the PCM held at Marigat Youth Polytechnic from 3rd to 4th April, 2000, the participants were shown on how the chopper is working. Some participants who are the *Jua-Kali* (open air scrap metal artisan) wish to have a sample of it to design and may be make more for small scale farmers.

The workshop held at Arabal on 10th – 12th April 2000, the participants were wondering which equipment is this. During the demonstration dry hay was available on the site. Cutting of the grass by using the chopping tool gave the participants lots of interest on how efficient it is. The participants wish to have it. Since Arabal is our verification area, the farmers were told to plant more crops and animal feeds. So that, use of chopping equipment will be useful. Most of the women fine easier to use.

Sandai workshop

The community living around Sandai attended the workshop held at Sanda on 18th April 2000. Several activities was discussed mainly the farming activities which are due to start as soon as the rains start. Presenter at workshop asked the participants, what they do after they have harvested their crops. The farmers said that they graze livestock on the land where crops have been harvested. No any storage either cutting of the maize stalks. During the discussion of livestock improvement, the introduction of animal feeding was discussed to detailed. The demonstration of traditional Japanese tools was shown to participants on how they are used in harvesting grass and chopping napier, maize stalks millet stalks and other animal feeds.

During the demonstration, napier grass was available for the participants to chop by using the chopper. Most livestock keepers were buying dry grass harvested other hills at cost of Ksh. 70 .00 per 6 ~ 9 kg. The participants, who use the chop cutter, chopping *napier* grass replied that it is easy and fast in chopping the animal feeds.

The participants were told after harvesting the crops, they should store maize stalks whenever they want to feed their livestock they should chop and put animal feeds in a trough. The participants were told to plant *napier* along the farm ridges to supplement animal feeds.

Advantages

a) It save up to 70% time wasted by using *a Panga*,
b) Easy to carry to other grazing fields.
c) Can be used in feeding the livestock by chopping the *napier* in small size, used to feed goat and sheep also.
d) Easy to chop feeds e.g. maize stalks, bean grass, oats, maize cobs, wheat straws and etc. for silage making.
e) Can be used by women,
f) The sickle can be used by even young children aged 12 years to cut the *nepier.*
g) No animal feeds will be wasted.

Disadvantages

1. It's not available in the market,
2. It can cause injury if care not considered.

Maintenance

The maintenance of the Japanese traditional tool is very easy. In order to improve the cutting edge, this require the use of sharpening stone, which can be found in the market.

Conclusion

We found that the chopping tools are very efficient. Most small-scale farmers wish to have and this will boost the animal production e.g. milk, meat, hide and skin and proper marketing of livestock.
Animal feeds will be harvested easily and stored for use during dry season.
The idea of making chopping tools at Marigat Poly Techniques will not be achieved properly due to lack of quality scrap metals especially the cutting knife on the chopper is a special material.
We require the JICA STUDY TEAM to assist our small-scale farmers with chopping tools to improve their standard of living. This would help to eradicate poverty living by about 35%.
Milk production will increase size of animal will increase for better marketing.
Please kindly assist.

Compiled by

Charles K. Yatich
JICA Study Team, Livestock Counterpart

cc. District Livestock Production Officer
District Veterinary Officer
Divisional Livestock Production Officer
Divisional Veterinary Officer

Ministry of Agriculture, Livestock and Rural Development
Veterinary Department, Marigat
P.O. Box 54, Marigat
18th of May 2000

The Team Leader
JICA Study Team
Baringo

Livestock Improvement Project

The improvement of livestock covers the following activities;

1. Breeding bucks
2. Tick control: i.e. pumping out used water and refilling by using water pump, hand spraying by using knap-sack sprayer
3. Animal health: vaccination, deworming and castration of unwanted bucks within the breeding area and also ear notching
4. Tsetse traps: to help in controlling trypanasomiasis
5. Animal feeding: By using a chopper in preparing the feeds for storage

Procurement of Equipment

This has been done and arrangement is done to give the community for use.

Preparation of breeding buck leaders

(a) Arabal

The Arabal community has prepared themselves into groups. There are five groups that were formed to represent the five villages to receive the five breeding bucks allocated to them. Below are the names of the group leaders.

Name	Village
1. William Cherutich	Kapirwok
2. Raphael Keitany	Tandar
3. Samuel Chebon	Partalo
4. John Koech	Karma
5. Joseph Kirkok	Laromoru

The group leader came up with a system on how they will keep and take care of the buck. They agreed that they will construct a boma for the breeding buck and select 20 to 25 does for breeding. Also they will employ a herds man to look after the selected does and the breeding buck.

The contribution and registration of the group will be done in order to maintain the buck whenever a need arises.

The vaccination of the does will be done before the breeding bucks are given to each group.

(b) Sandai

The Sandai community has grouped themselves into five groups. Although the Sandai community seems to be reluctant in adopting the changes, effort are being worked out to see that they follow the right way for success. The group leaders are as follows;

Name	Village
1. Dickson Chepkuto	Cheploch
2. Charles Rotich	Kapchepkendai
3. David Kibon	Kokchande
4. Elizabeth Katero	Kamaech
5. Irine Kiploman	Mbichut

The Sandai groups have not come into conclusion on how the buck will be taken care. The discussion was left with the community to come up with their views on May 26, 2000 for reviewing them again.

Arabal Dip

The emptying of the dip was done on May 13, 2000. Following are the people who were present during the exercise.

1. Seiji Takeuchi	Team leader, JICA Study Team
2. Akihiko Hata	Project Evaluation, JICA Study Team
3. Dr. Z. Y. Oroko	Veterinary Officer, Marigat
4. C.K. Yatich	Livestock Counterpart

The dip representatives were

1. Johana Kipraisi	Chairman
2. Samuel Kandie	Secretary
3. Isaac Rutto	Member

4. The Arabal community came when the work was going on

Emptying of the dip was done by using the water pump which was assembled by Dr. Oroko and Mr. Yatich. The amount of water at the dip tank was full to the bream due to poor drainage of rain water.

Pumping out of water in the dip took 70 minutes. The approximate amount of water was about 20,000 liters and this includes some dirt inside the basement of the dip. One minute discharge of water was 285.7 liters/min.

Refilling of the dip with fresh water took a short time. The community laid down the P.V.C pipes from the dip up to the site where the pump was situated. The fresh water was pumped from the Arabal river to the dip by delivering with P.V.C pipes. The amount of water required in the dip is at 18,000 liters maximum and should not be below 17,500 liters. The amount of water pumped to the dip took 48 minutes to reach 18,000 liters. One minute of discharge of fresh water was, therefore, 375 liters/min. The Arabal community is more active than Sandai.

Purchase of bucks

There are two places to which are the source of breeding bucks.

1. KARI Perkerra: Breed four-way cross i.e. Galla Boer, Toggenbug and Alpine.
2. Kimose Sheep/Goats Multiplication Center: Breed Galla x Boer F1

We could not source from KARI Perkerra due to lack of authority to dispose the bucks. At Kimose Sheep/Goats Multiplication Center, we had requested for five bucks and we had to increase our number to ten in order to meet our requirement. This exercise of purchase was done on May 15 and 16, 2000 with Mr. Akihiko Hata.

<Selection>

The selection of breeding bucks from both Arabal and Sandai communities was done in presence of Dr. Oroko, Mr. Yatich and Mr. Hata. Each community were having their group leaders. The group leaders from Arabal were taken on May 15, 2000 for selection of breeding bucks. After the leaders have selected their bucks, Dr. Oroko certified the buck for breeding purpose. Sandai group leaders were taken on May 16, 2000 to Kimose for the same exercise. Also the bucks were certified by Dr. Oroko for breeding purpose.

<Vaccination>

The bucks which were selected by community group leaders were vaccinated against Contiguous Caprine Pleura Pneumonia (CCPP) by Dr. Oroko. Foot and mouth

disease will be vaccinated later.

<Ear-tags>

The application of ear-tags was done on the selection days i.e. May 15 and 16, 2000. Serial numbers were given each group. Foe Arabal it started from A-1 to A-5 and for Sandai, S-1 to S-5. Each community group leader will receive the bucks according to the serial number given.

<De-worming>

This will be done before the goats are issued to the community. The bucks will be transported to the community early in June 2000.

Compiled by
Charles K. Yatich
Livestock Counterpart
JICA Study Team

LIVESTOCK IMPROVEMENT PROJECT REPORT (by Mr. Charles Yatich, SLHA)

1. Weather

Livestock project continued despite the climate condition, which changed slightly. The verification area received slight rain, which changed the pasture. Some few grasses have germinated in Arabal around Chesirim, whereas in Sandai some browses have germinated and green pasture can be found in Sandai swamp.

2. Activities

The activities done during the month were discussion on how the groups will manage the bucks for better results. Each community in our Study Area gave a way forward on making separate bomas for the breeding bucks and the selected does to be mated when the bucks will reach mating age.

3. Community Contribution

The community contribution towards the bucks, equipment and other accessories are expected to meet the 30 percent share contribution. Attached is the format for community contribution in both Arabal and Sandai. The 30 percent contribution towards breeding bucks was as follows;

- Arabal 100 % paid on June 7, 2000.
- Sandai 64.4 % paid on June 7, 2000

The remaining balance from Sandai community was divided into two installments. On August 3, 2000, they agreed to pay Ksh.500 and the last payment on August 3, 2000 of Ksh.425

4. Breeding Buck Distribution

The above exercise took place on June 12, 2000 for Sandai and June 13, 2000 for Arabal. Organization for transport from Kimose breeding station to Sandai and Arabal was done by JICA and GOK by using GOK pick-up. On June 12, 2000, the community buck leaders at Sandai received the breeding bucks. Present during the handing over of bucks to the community was as follows;

Akihiko Hata	: JICA Study Team
Dr. Z.Y.Oroko	: Veterinary Officer Marigat
C.K Yatich	: SLHA Livestock Counterpart

Dr. D. Kimenye : Consultant Jica Study Team
Micheal Chepkuto : Chief Sandai
Mr. Wendot Assistant : Chief Sandai.
All buck Leaders.
Sandai Community.

Below are the serial numbers of bucks received at Sandai.

Old Serial No.	Name	New serial No.	Village
8R013	Mr. Dickson Chepkuto	S1	Cheploch.
8R031	Mr. Charles Rotich.	S2	Kapchepkendi.
8R009	Mr. David Kibon.	S3	Kokchande
ABG027	Mrs. Elizabeth Katero	S4	Kamaech
8R043	Mrs. Irene Kiploman	S5	Mbichot.

On June 13, 2000, the bucks were transported from Kimose to Arabal. The following people were present during the issuing of the breeding bucks.

Akihiko Hata : JICA Study Team.
C.K Yatich : SLHA Livestock Counterpart.
Dr. D. Kimenye : Consultant JICA Study Team.
Mr. William Kipkoech : Chief Arabal
Mr. Kipraisi : Dip Chairman.
The buck custodians
Arabal Community representatives

The breeding bucks were issued by Mr. Hata to leaders chosen by the community. The vaccination of breeding bucks against FMD was done by Dr. Oroko at Kimose breeding center for only 10 purchased breeding bucks.

Below is the order of the bucks.

Old serial No.	Name	New serial No.	Village.
8R046	William Cherutich	A1	Kapirwok/Chemorongion.
8R012	Raphael keitany	A2	Tandar/Embosos.
8R018	John Chesaina	A3	Kapinadasim.
8R038	Leleito Mursoi	A4	Karma/Katilomwo.
8R045	Joseph Kirkok	A5	Ngelecha/Chesirim.

5. Vaccination

The vaccination of breeding bucks against FMD was done by Dr. Oroko at Kimose breeding center on June 12, 2000 for only 10 breeding bucks.

6. Deworming

The bucks were dewormed before issuing buck to the custodians in both Sandai and Arabal. All the buck custodians were strictly told to take serious action on tick control measures. The bucks were free from ticks and the leaders were advised to be spraying, dipping or hand dressing weekly.

7. Follow-Up

Reports received from the buck custodians on June 14, 2000 from three of them from Sandai is that, the bucks had followed the other herd of the goats. Our observation from the Swamp in Sandai was that, the bucks were grazing and the breeding bucks were feeding on the new germinated grass. There were few browses in Sandai compared to Arabal. One of the buck custodians at Sandai was restraining the buck at home and feeding to adjust to the environment.

The buck leaders at Arabal gave us adequate report on how the bucks are adopting to the place on June 16, 2000. The farmers were very much impressed on how the bucks were feeding; they could feed on many types of browses than others even adding the barks of some trees. Compared to the condition in Kimose, the bucks are able to get more feeds in Arabal. All the five bucks were able to join other goats. Our observation in a nearby boma, which received the buck, is that, it had adapted to the environment.

8. Tsetse Fly Control

Tsetse flies in both Arabal and Sandai are mostly found along the rivers and swampy areas. These tsetse flies are rampant thus cannot be located easily during dry season. In Sandai, they are mostly found in Mbichot village along the Wesekes River and Kusupo, Loboi swamp. In Arabal, they are found downstream of Arabal river near Partalo and some areas. Community meeting held at Arabal on June 21, 2000 gave suggestion of identifying the area where the tsetse flies are found.

As the drought condition continues to prevail, most livestock keepers have lost many animals. The need of training tsetse flies will be adequate during rainy season. Arrangements for training will be started from July 31, 2000. The community will be facilitated on the sitting of the nets.

9. Vaccination of Does

The vaccination of does was done on June 21, 2000 and June 26, 2000 against C.C.P.P in both Sandai and Arabal. On June 21, 2000 vaccination took place at Arabal in villages where the bucks are situated from 07:00 hours ending at 18:45 hours. The following are the vaccination system, each group was allocated 50 doses at a cost of Ksh. 4.00 per dose.

a) Arabal

Name of Group	No. of Does	Amount Paid	Balance
1.Ngelecha/Chesirim	45	Ksh.150	ksh.30
2.Karma/Katilomwo	50	Ksh.200	Nil
3.Kapindasim	32	Ksh.128	Nil.
4.Kapirwok/Chemor.	48	Ksh.192	Nil
5.Tandar/Embosos	69	Ksh.276	Nil

b) Sandai

The vaccination of does at Sandai took place on June 26, 2000. The exercise started from 8:00 hours and ended 15:00 hours Mbichot village took two hours walk.

Name of Group	No. of Does	Amount Paid	Balance
1.Kamaech	73	Ksh.252	Ksh.40
2.Cheploch	36	Nil	Ksh.144
3.Kokchande	20	Nil	Ksh.80
4.Mbichot	60	Ksh.160	Ksh.80
5.Kapchepkendi	20	Nil	Ksh.80

A separate enclosure of the breeding buck and does will be constructed by each group. This will enable the breeding buck to mate the does without any competition.

The vaccination Analysis is below;

	Participation	Payment.
Sandai	83.6%	49.2%
Arabal	97.6%	96.9%

10 Dip

The dips in Sandai and Arabal have got some problems. The functioning dip is at Sandai whereby the dipping is done in a fortnight. The dipping which took place on July 1, 2000 was very low in turn up. The number of cattle was 105 and goats 100. Arabal dip had

been facing financial problems whereby the former committee had mismanaged the funds. The newly elected committee had requested for loan from JICA to buy Accaricide. On July13, 2000, the Chairman, Secretary and Treasurer accompanied with Veterinary Officer Marigat purchase the Accaricides at Kabarnet with assistance of JICA loaning the community.

11. Community Contribution Payment

The balance for breeding bucks at Sandai was expected on July 3, 2000. Only one group paid and the rest never appeared. For the equipment, the community is still raising the money at least to pay 30 perent. The Sandai group had agreed to pay about 53 percent before July 20, 2000 and Arabal have to discuss after dipping has taken place.

X. REHABILITATION OF PAN

April 16, 2000

Activity on Excavation of Lekiricha Pan in Rugus

Background

With an agreement between Mukutani Chief and the Study Team, a five-day-trial to excavate the silt accumulated in the pan in Rugus was carried out. The background of this operation was rooted to the series of workshops taken place with Rugus villagers. At the first workshop in October 1999, villagers in Rugus raised their core problem as access to safe water and to cope with the problem, the activity which they can do was focused on the rehabilitation of pan. Regarding the result of the workshop, the Study Team designed a project for the rehabilitation of pan, which suggests manual labor to desilt. At the second round of the workshop from March 29 to March 31 2000, this design of the project was proposed to the villagers. The villagers discussed the design proposed and identified Lekiricha pan for implementation. The main objection from the villagers to the design was to desilt the pan by manual labor. They considered it was not possible. After the workshop closed the Study Team members themselves tried to excavate the Pan and found out the difficulty of excavation by manual labor. But the Study Team still wished to examine the possibility of this since there is an example of excavated pan by manual labor in Sumburu district. The team discussed this intention with the chief and he agreed to call villagers for this operation. The operation was agreed under the following condition.

- The purpose of the operation is to examine the feasibility of excavation by manual labor and to reflect the result to the final project designing
- The operation is considered as a learning process of how we can work together or what we can do
- Study team contributes food, drink and tools
- The duration of the operation is five days and participants will be around 20 people

Operation

The operation begun on April 10. The team provided tools of 10 hoes, 6 folk hoes, 11 shovels, 16 mattocks and 5 wheel barrows and coffee with sugar, maize and beans for lunch and water. Also the team provided pick-up car to transport the soil. So the work was done as Harambee basis. The team members also joined the labor and somehow shared the knowledge with the villagers especially on how hard the work is and also how enjoyable the cooperative work is. As specific point, it was found that carrying soil was difficult for the people especially because they were not used to use wheelbarrow. So the

assist by pick-up car was convenient for the people. But eventually people got used to use the wheelbarrow. Another point is the process of how people felt the enjoyment of the cooperative work. People normally had many complaints in the beginning of the day since their tiredness from previous day's work remained. But as the work went on, people started to compete carrying soil by wheelbarrows. One day in the latter half of the day people stood in a line and started digging together with a rhythm. People were developing themselves how to manage the heavy labor.

This operation was suspended after the completion of 4 days work due to a request from DC of Baringo district. DC considered the operation was not practical and the purpose of the operation explained by the Team did not convince DC. Anyway the villagers completed four days operation and reviewed their work. Following table is the summary of the result of the operation.

1st day	April 10, 2000
Working Time	8:00 – 14:00
Participants	12 Men, 5 women about 10 people were constant. 10 to 15 people observing. 2 women were cooking. Most of the workers were youth.
Result	T shape: 20m x 4.5m x 0.1m + 6.5m x 3.5m x 0.1 m =11.3m3
Remark	At lunchtime, about 30 people came. Half of them were women and children. Transporting soil was done by manual and pick-up car.

2nd day	April 11, 2000
Working Time	7:30 – 13:50 30 minutes break
Participants	In the morning, 8 men and 2 women were working. Finally 15 men and 3 women came to work.
Result	13.2m x 5.7m x 0.1m = 7.5m3
Remark	Pick-up car was broken. So the transport of soil was done by manual. Coffee with sugar was effective to give strength.

3rd day	April 12, 2000
Working Time	7:30 – 14:15 30 minutes break
Participants	In the morning, 7 men were working and finally 15 men and 3 women were came to work.
Result	2.3m x 10.2m x 0.25m = 5.9m3
Remark	DC and district officers came to the site.

4th day	April 13, 2000
Working Time	8:15 – 13:35 30 minutes break
Participants	In the morning 6 men and 1 women were working and most of them were new. Afterwards constantly 12 people were working in the field. Many women and children joined to work for some minutes since the councilor told people not to eat if you do not work.
Result	8.4m x 21.1m x 0.2m = 35.4m3

Remark	Pick-up car was broken again. So the people concentrated on only digging.

Regarding the result on the first three days (Data on the fourth day was not accounted since the soil was not transported), the people's strength was calculated at excavating soil of 0.3m3/day/person (equivalent to the amount which can carry with 10 wheel barrows. The operation includes digging and transporting. The difference of hardness of soil in each part of the pan was not considered for the calculation). The calculation is done as follows:

24.7m3 ÷ 30 people (10 people on average throughout a day) ÷ 3 days = 0.3 m3/day/person

This number can be the criteria for planning of desilting.

Review of Operation by the Participants

The people thanked the Study Team for this operation and the followings are the review of operation by the participants.

1) Middle-age-man

Operation was very good. I found that the digging was the hardest work. As the work went, I was getting tired, so it is better to look for another way for excavation.

2) Middle-age-man

We learned how to use so many types of tools, which we were not used to it. If we had started this operation in October, we could have been able to work further. However since the rainy season is about to come, we should take another way to excavate. Anyway we showed willingness to work.

3) Old man

The workshop led us to get together. We old men spent all our strength in 2 days. So although we could not work after that, we gave the work to the young generation and we were observing the work.

4) Young man

On the way of using tools, we had difficulty to use at the first time but we learned how to use as we were working. On the second day people were already tired but next day they

came. So we were feeling responsibility for this job. The problem was the hardness of ground. It took us time to dig. Old people were around all the time. It gave us heart. We were enlightened from them. We learned a lot from this job. Now we are making farm. This experience will be utilized for making farm.

5) Young man

I enjoyed this work very much. I learned how to use tools. I found out the soil was hard but we progressed. Finally last day we made a big progress. If this work continues, I am ready.

6) Young man

When I went home, I felt sick, but following day when I came to the field, I became fine and enjoyed work. For me the work was enjoyable. So even after digging, I went to work for farm, too. If there had been no agreement on this work, nothing would not have happened. On tools, especially a wheelbarrow was difficult to use, but finally I got used to use it. I learned how to use tools.

7) Old man

Please do not forget Rugus. Digging was quite new job for us, so people around came to see what is going on. I found wheelbarrow was difficult to use. We can be together until we see the result of the work.

8) Middle-age-woman

It was very new thing to us, but we could use tools. We were together no matter who you are man, woman, old and young. We are happy that JICA is looking for a way of getting clear water. We were very tired in the first day, since we had a lot of job such as fetching water and clearing farm. But there is no work to be failed.

9) Young man

We want to take care of this pan

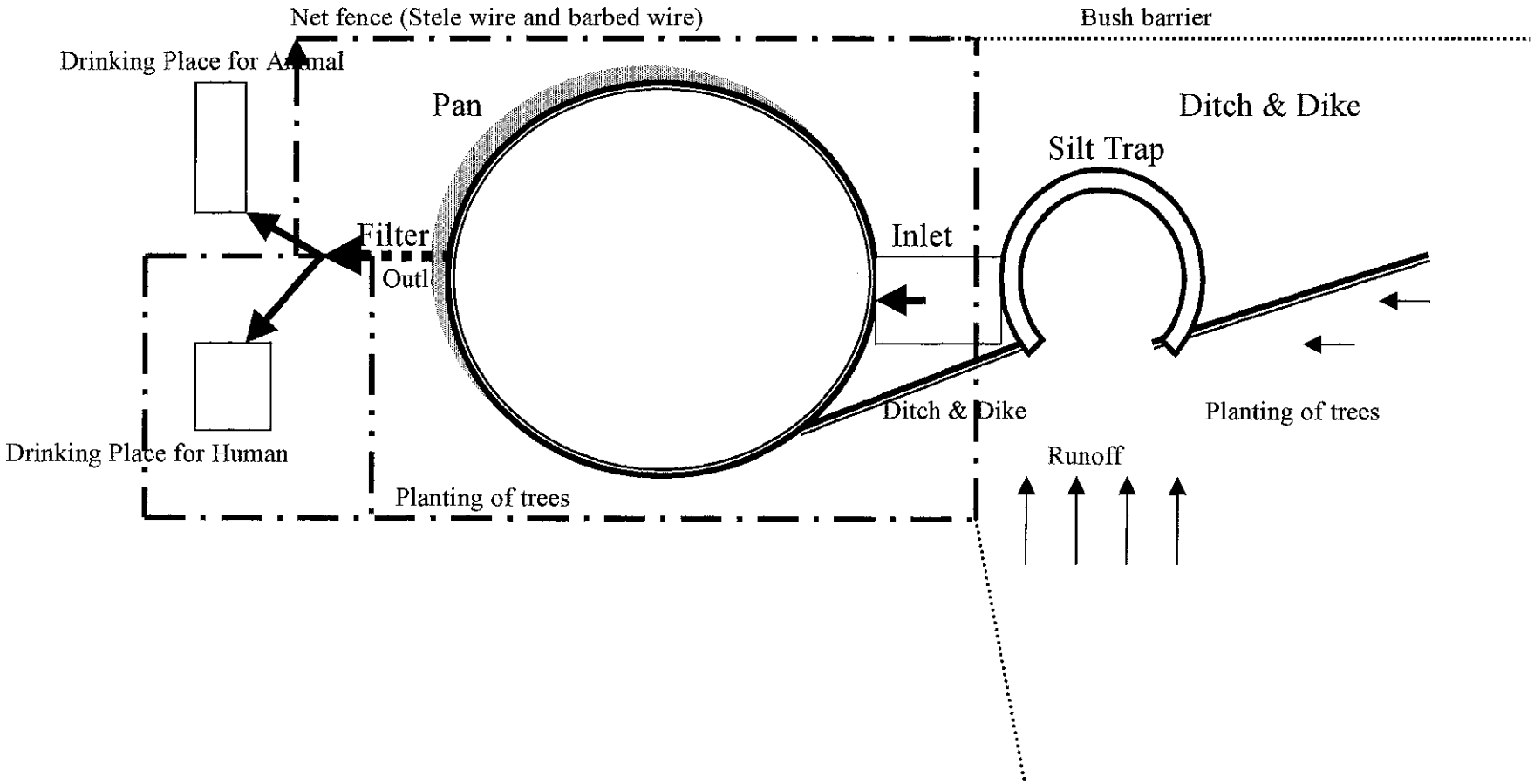
10) Old man

I saw 3 new things which were wheelbarrow, folk hoe and Japanese.

11) Middle-age man

People from outside used to come and told us what to do and left and never came back. But this people stayed and worked together. It was new experience to us.

Figure 3-4-3 **Proposed Layout of Rugus Pan**



XI. MARIGAT YOUTH POLYTECHNIC

Table Proposed Curriculum for Marigat Youth Polytechnic

Main Activity: Short Courses
Sector: Woodwork

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course	Introduction to woodwork	-Introduction to woodwork - Carpentry	1 hour	- Stationery - Materials - Tools - Equipment - Machines - Blackboard	- Lecture - Demonstration - Showing samples	Trainees should be able to - Narrate the history of carpentry - Differentiate between Carpenter and Joiner	Test
	Safety in the woodwork workshop	- Behaviour -and dressing - Tools safety - First Aid	14 hours (4 ½ days)	- Stationery - Materials - Tools - Equipment - Machines - Blackboard - Visiual Aids	- Lecture - Demonstration - Showing samples - Pictorial drawings	Trainees should be able to - state the causes of accidents and preventative measures - list the contents of a first aid box.	Test
	Hand tools (General hand tools for woodwork)	Classification of tools -Selecting tools Using tools	70 hours (23 days)	- Stationery - Tools - Balckboard	- Lecture - Demonstration	Trainees should be able to - List tools for a given job - Use tools correctly and safety on a given task.	Test
	Preparation of materials for woodwork	Preparing cutting list format -Entering materials in the format -Making setting out roads	90 hours (1 ½ months)	- Stationery - Materials - Tools - Equipment - Machines - Blackboard	- Lecture - Demonstration	Trainees should be able to - Prepare the cutting list format - Enter the format correctly	Test

Sector: Woodwork

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course	Assembling woodwork joints	- Making joints - Fastening - Applying adhesives using holding devices	108 hours (36 days)	- Stationary - Materials - Tools - Equipment - Machines	- Lecture - Demonstration - Models	Trainees should be able to - Prepare materials - Use skills acquired to perform the task	Test

Sector: Woodwork

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Upgrading Course	Finishing for doors and furniture	-Preparing surfaces -Applying finishes -Case and maintenance -protection of finishes	240 hours (4 months)	- Stationers - Tools - Equipment - Blackboard - Machines	- Lectures - Demonstrations	Trainees should be able to - Prepare surfaces for finishing - Apply finishes on a given task - Care and maintain finishes - Protect finishes	Tests
	Furniture making (Joinery)	-making a pen holder -making a stool -making a cupboard -making table chairs -making beds -making a book shelve -making a bedside carbonate -making a side board -making a wall unit -making a wardrobe -making casement windows	165 hours (3 months)	- Stationers - Tools - Equipment - Blackboard - Machines	- Lectures - Demonstrations - Models	Trainees should be able to - Make furniture correctly use - Use the required tools	Tests
	Door making (Joinery)	-making frames and linings -fixing frames and lining -making battered doors -hanging battered doors -making panel doors -making framed legged battered doors	120 hours (2 months)	- Stationers - Tools - Equipment - Materials - Machines - Blackboard	- Lectures - Demonstrations - Models	Trainees should be able to - Make frames and linings - Fix frames and linings - Make battered doors - Hang battered doors	Tests

Main Activity: Short Courses
Sector: Tailoring & Dressmaking

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course. Phase 1	Introduction	- History of garment making - Differences between tailors and dress making - Occupational information	3 hours	- Pieces of garments/ materials	- Discussions - Explanation	At the end of this topic the trainee should be able to - State the meaning of a garment - Narrate the history of garment making Differentiate tailoring from dressmaking	Theory and practical tests
	Hygiene and Safety	- Workshop rules - Fire safety - First Aid - Hygiene	10 hours	- Fire extinguisher - First aid box	- Demonstration - Explanation	At the end of this topic the trainee should be able to - State the workshop rules in the workshop or garment making industry - List fire fighting techniques - Apply simple first aid treatment - State /observe the hygiene rules as stipulated in the factories act.	Theory and practical tests
	Basic Design	- Different garment designs - Free hand drawing - Colour	98 hours (1 ½ months)	- Manila paper - Marker - Garments of different colours	- Showing of design charts - Demonstration - Explanation	At the end of this topic the trainee should be able to - Describe a given garment design - Select given garment designs - Draw given figures by use of free hand Identify primary and secondary colours.	Theory and practical tests
	Equipment	- Basic knowledge of sewing machines - Adjustment for machinist - Cleaning and oiling of the Sewing machine - Ironing and pressing equipment - Electrical supply - Use and maintainance of hand tools -Safety rules	30 hours	- Equipment	- Demonstration - Explanation	At the end of this topic the trainee should be able to - Explain how to maintain given parts of a machine - Describe the procedure in preparation for the sewing operation of a given special machine - Explain and demonstrate the maintenance procedure of ironing and dressing equipment	Theory and practical tests

Sector: Tailoring and DressMaking

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course. Phase II	Material knowledge	- Types of natural fibres - Materials from natural fibres - Care of natural fibres	30 hours (2 weeks)	Garments of different types	- Explanation - Demonstration	At the end of this topic the trainee should be able to - Name natural fibres - Describe different types of materials from natural fibres - Explain the methods of caring a given fabric	Practicals and theory tests
	Garment cutting	- Layout - Marking the pattern on the fabric - Cutting out - Safety rules	98 hours (1 ½ months)	- Cutting machines - Scissors - Cutting tables - Tracing wheel - Tailors chalk	- Explanation - Demonstration	At the end of this topic the trainee should be able to - Layout different types of materials - Cut various types of fabrics using different machines - Demonstrate how to mark pattern on fabric - Explain the steps in hand cutting	Practical and theory tests
	Garment making	- Basic skills - Types of details - Joining the garment - Finishing	254 hours (4 months)	- Garments - Scissors - Equipment - Machines	- Explanation - Demonstration	At the end of this topic the trainee should be able to - Operate given detailed machines - Make a given detailed garment - Join different parts of a given garment - Finish a given garment	Practicals and theory tests

Sector: Tailoring and Dressmaking

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Upgrading Skills	Pattern drafting	- Standard body measurement - Basic block - Pattern development - Pattern finishing	98 hours (6 weeks)	- Tape measure - Manila paper - Marker - Tailors chalk - Black board	- Demonstration. - Explanation - Show of charts	At the end of this topic the trainee should be able to - Take measurements correctly - List the standard body measurement - Identify different types of basic blocks - Demonstrate stages of pattern development - Indicate detailed finishing	Theory and practical tests
	Equipment maintenance	- Maintenance of special machine - Preparation for the sewing operation - Maintenance of dressing equipment	68 hours	- Overlock machine - Zigzag machines - Buckle making machines - Toolkit for garment making accessories - Iron and ironing board	- Demonstration. - Explanation	At the end of this topic the trainee should be able to - Maintain different parts of a given special machine - Prepare sewing operation for a given special machine - Prepare a maintenance procedure for ironing board and iron - Observe safety rules when maintaining special machines	Theory and practical tests

Main Activity: Short Courses
Sector: Mechanic

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course	Introduction	- History of automobile motor vehicle - Occupational information	2 hours	- Materials - Tools - Stationary - Equipment - Manhines	- Lecture - Demonstration - Showing the drawn charts	By the end of the lessons, students should be able to - Explain the invention of motor vehicles - State the opportunities available in vehicle industry	Theory tests
	The safety rules in a workshop	- Specific objectives - Personal safety - Tools - First aid - First control	4 hours	- Materials - Stationary - Equipment - Tools - Machines	- Lecture - Demonstration - Using charts	By the end of the lessons, students should be able to - Explain the importance of workshop - develop good safety working habits - Personal safety - Tools safety	Tests
	Tools and equipment	- Marking out tools - Measuring out tools - Cutting out tools - Fastening out tools - Jacks and cranes	6 hours	- Stationary - Tools	- Lecture - Demonstration - Using charts	By the end of the lessons, students should be able to - Explain the use of correct tools for a given job - Sketch different type of tools Explain the use of ramous types of tools and equipment	Tests
	Vehicle layout - Seeing - Theory	- Main units - Position of units - Sketching of the layout	40 hours (2 months)	- Tools - Equipment - Machines	- Lecture - Demonstration - Using charts	By the end of the lessons, students should be able to - Identify the main units of motor vehicle - Explain the position of each units - Sketch the layout of conventional motor vehicles	Tests on theory

Sector: Mechanic

Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Beginners Course Phase I	Engine - Seeing - Theory	- Types of equipment - Major engine parts - Defects - Sketching engine and parts	300 hours	- Materials - Tools - Stationary - Equipment - Machines	- Lecture - Demonstration - Using charts	By the end of the lessons, students should be able to - Differentiate types of engines - List major parts - Analyse parts defects - Explain the parts of engine	Tests
Beginners Course Phase II	Transmission	- Types of transmission - Function of every component - Layout of a conventional transmission	150 hours	- Clutch parts - Gear box parts - Other parts that follows a complete units	- Lecture - Demonstration	By the end of the lessons, students should be able to - List main units of transmission - State the function of the transmission - Sketch the layout of a conventional transmission system	Practical and theoretical Tests
	Suspension system	- Types of suspension - Function of suspension - On how it operates	60 hours	- Coil spring + leaf spring - Shock absober - Rubbers suspension - Tools of machanical	- Lecture - Demonstration	By the end of the lessons, students should be able to - list the types of suspension - State the function of suspension - Explain the operation of the suspension system	Practical and theoretical Tests
	Wheels tyres, rims, tubes	- Types of tyres - Care taking of tyres	30 hours	- different types of cross-ply + radial +sizes - Types of ring, spotted type, disc type, - rotation of tyres - speed required - pressure tyres	- Lecture - Demonstration	By the end of the lessons, students should be able to - State different size of tyres or tubes - List types of tyres - Explain themaintenance	Practical and theoretical Tests

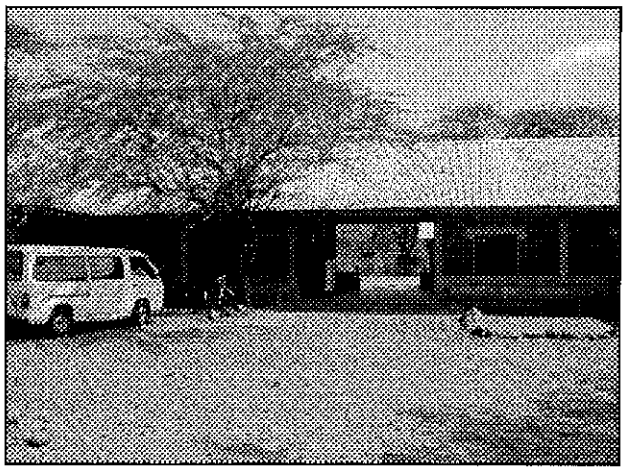
Sector: Mechanic

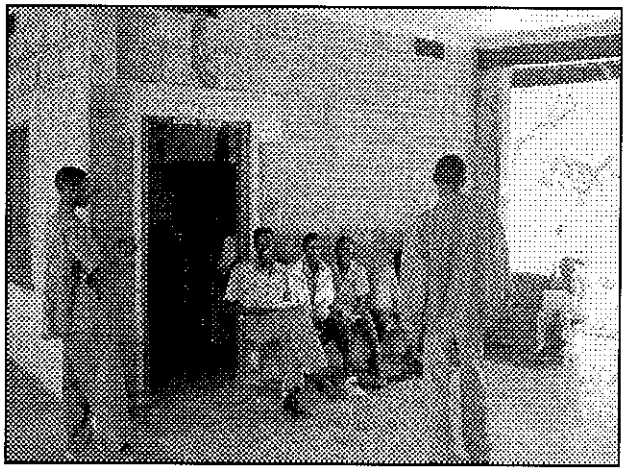
Phases/ Stages	Topics	Sub-Topics	Duration	Teaching Aids	Teaching Methods	Objectives	Evaluation
Upgrading Course	Fuel system	- Types of Fuel - Fuel system - Layout of fuel system	70 hours	- Fuel system sketches and charts - Chalk and blackboard - Stationers	- Lecture - Demonstration - Discussion - Question and answer sessions - Practical	By the end of the lessons, students should be able to - show the different types of fuels system - distinguish the different types of a fuel system - sketch and name the parts of a fuel system	Practical and theory tests
	Ignition system	- Function of the system - Lay out of ignition system - Function of the main parts	50 hours	- Ignition system sketches and charts - Chalk and blackboard - Stationers	- Lecture - Demonstration - Discussion - Question and answer sessions - Practical	By the end of the lessons, students should be able to - State the function of the ignition system - Explain the layout of the ignition system - State the function of the main parts.	Practical and theory tests
	Cooling system	- Function of the system - Types of system - Major components	30 hours	- Cooling system sketches and charts - Chalk and blackboard - Stationers	- Lecture - Practical - Demonstration - Discussion - Question and answer sessions	By the end of the lessons, students should be able to - Interpret thesystem - Name the types of cooling system - Use ploofs of the system	Practical and theory tests
	Transmission	- Types of transmission - Function of every component - Layout of conventional transmission	80 hours	- Chart of gear box - Complete units	- Lecture - Demonstration	By the end of the lessons, students should be able to - List main parts - State the function of the transmission system - State the layout of conventional transmission	Practical and theory tests

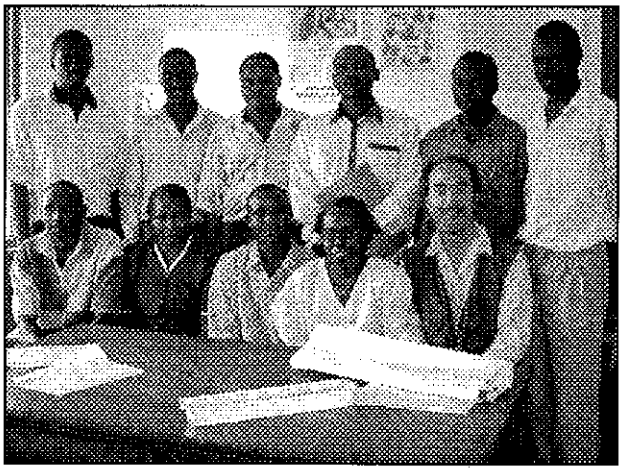
XII. HEALTH PROMOTION SLIDESHOWS

Chanzo na jinsi ya kuzuia kipindupindu

Hatua zilizochukuliwa Juni 1999
Katika Kampi ya Samaki na Loruk



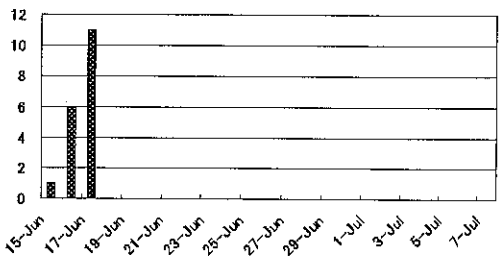




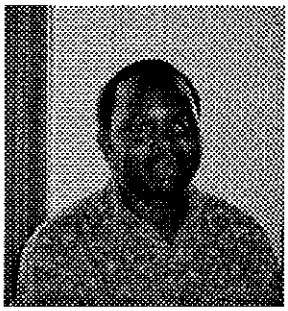
Village Health Committee

- ✓Community Health Worker
- ✓Traditional Birth Attendant
- ✓Traditional Healer
- ✓Traditional Dentist

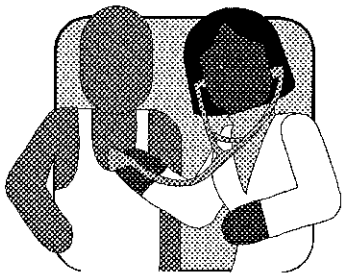
Diarrhea patients from KYS

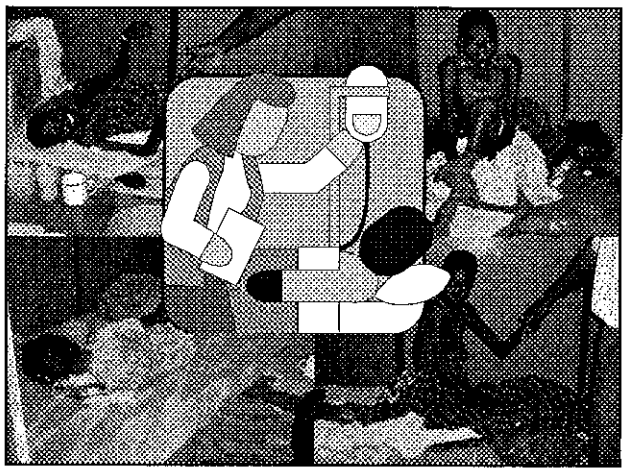


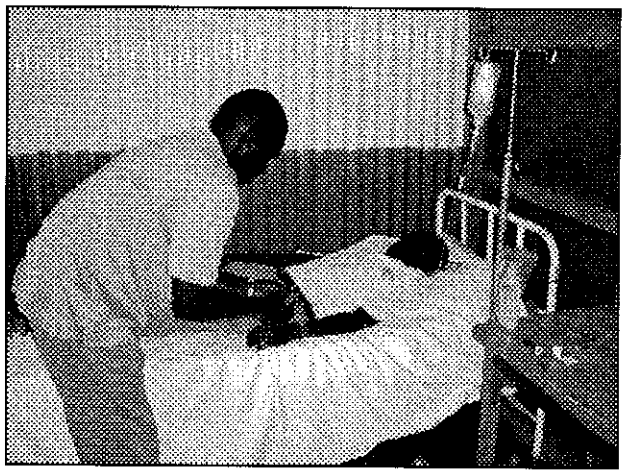
What is happening there?

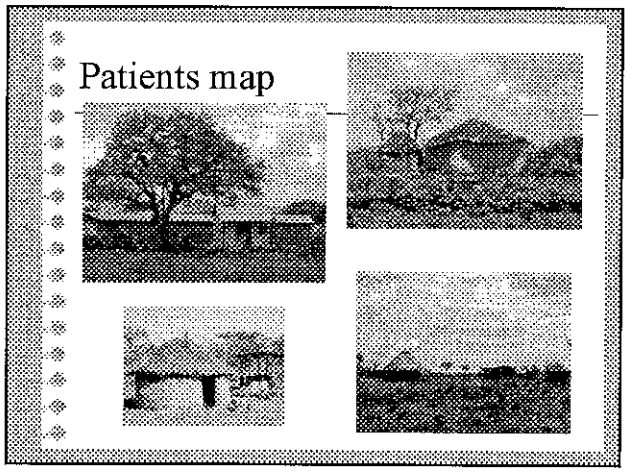


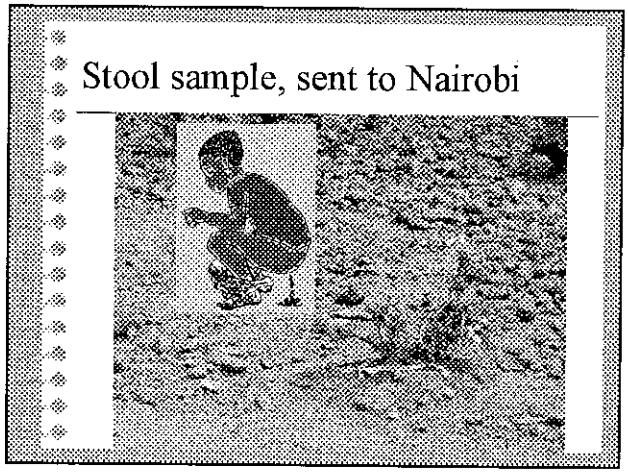
It's not a normal diarrhea.

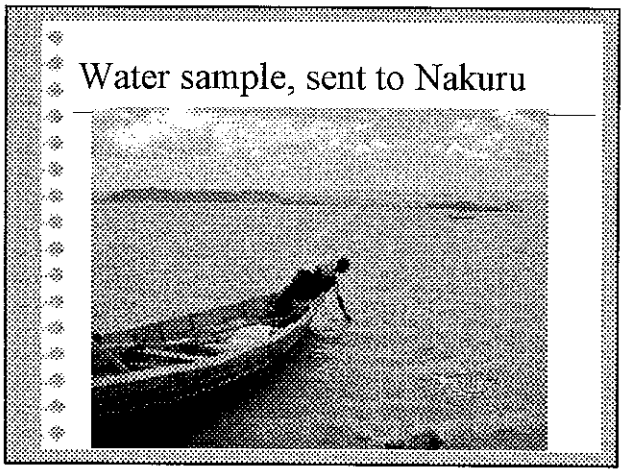







Patients map


Stool sample, sent to Nairobi


Water sample, sent to Nakuru