

## **T. PARTICIPATORY PLANNING APPROACHE**

## Appendix T. PARTICIPATORY PLANNING APPROACH

### 1. Methodology

All of public programs and projects are definitely “for the people” by their own definition, unfortunately however, this has not been always true. Many programs and projects have failed, because they could not fulfil the minimum requirement “for the people.” Planners stayed and planned in comfortable offices in big cities and did not listen to the people well enough. Also there was criticism that large-scale socio-economic surveys cost too much money and take too much time, and therefore could not make an effective contribution to project planning.

A reaction to these shortcomings was **Rapid Rural Appraisal (RRA)** a technique to analyze the needs of rural communities quickly, cost effectively and with little disruption to everyday life. RRA was developed in the late 1970s and 1980s. RRA is still for “learning by outsiders” just like conventional survey tools, but **Participatory Rural Appraisal (PRA)**, which was developed in the late 1980s and 1990s, was a tool which had evolved to become a “by the people” approach where the people are the main participants. PRA can be characterized by multi-disciplinary teams, careful observation, semi-structured interviewing and focus groups, and is for the empowerment of local people, in other words it is designed to enable rural people to share, enhance and analyze their knowledge of life and conditions, to plan and to take action. (“Whose Reality Counts? Putting the first last” by Robert Chambers, 1997, Intermediate Technology Publications)

In project management, the United States Agency for International Development (USAID) introduced a logical framework in 1969, but this logical and scientific framework did not work well if it did not respond to the needs of the people. Therefore, the German Technical Corporation (GTZ) combined this logical framework with Objectives-Oriented Project Planning (ZOPP), a participatory planning method. ZOPP is a co-determination and power-sharing tool to work “with the people.” **The Project Cycle Management (PCM) Method**, which was developed by the Foundation for Advanced Studies in International Development (FASID) in the early 1990s, is a set of tools to manage projects throughout their running from planning, implementation, monitoring to evaluation.

In this Study, three types of participatory approaches were added to conventional survey tools. 1) RRA to work “for the people,” 2) PCM to plan projects “with the people,” and 3) PRA for development “by the people.” However, since the purpose of the Phase I Study is to formulate a pilot master plan and the first field study is limited to three months, it was necessary to choose specific sites and processes to apply the participatory approaches. The Study Team did not introduce the advanced form of PRA “by the people” which is also called Participatory Learning and Action (PLA), but instead the PRA and PCM Method “with the people” in which the Study Team, the people, the representatives and other stakeholders are partners.

The level of public involvement also varies by stage. At the early stages of planning, the participation of the ultimate beneficiaries definitely comes first, and the Study Team remains in the role of observer. However, at the project design stage, implementation agencies and the Study Team usually need to contribute more.

In the Study, PRA Workshops were conducted by local consultants (Community Organization Consultants) together with the ultimate beneficiaries; RRA was conducted by the Study Team together with the ultimate beneficiaries; PCM Workshops were also carried out by the Study Team, GOK representative personnel and the ultimate beneficiaries.

PRA, RRA and PCM workshops were implemented as shown in Figure T.1-1.

## **2. Participatory Rural Appraisal (PRA)**

### **2.1 Selection of PRA Workshop Sites**

Firstly, the Study Area was classified into seven clusters from 11 locations in Marigat and Mukutani Divisions by socio-economic characteristics (ethnic group, access to markets etc.) and agro-ecological characteristics (major land use, topography etc.). (See Chapter III 3.3, and Table T.2-1). From these characteristics, Eldume/Ingarua and Ngambo Locations (Cluster B), Sandai, Lobo and Kapkuikui Locations (Cluster D), and Mukutani and Kiserian Locations (Cluster F) were considered as the same cluster. Marigat Location (Cluster A), Salabani Location (Cluster C), Kimalel Location (Cluster E) and Arabal Location (Cluster G) were considered as independent clusters. Clustering was done provisionally by the Study Team and it was finalized at a workshop with Division Officers and representatives of NGOs.

After being given approval for the seven Clusters by the District Working Committee on 30th August, seven villages representing the seven Clusters, were selected for PRA Workshop sites on 31st August after consultation with the District Officers, Chiefs and Assistant-Chiefs of the respective Divisions. The seven sites for PRA are as follows:

#### **Marigat Division**

- 1) Ndambul Village I, Perkerra Sub-Location, Marigat Location  
(Representing Cluster A : Marigat Location)
- 2) Ntapes Village, Ingarua Sub-Location, Eldume/Ingarua Location  
(Representing Cluster B : Eldume/Ingarua and Ngambo Locations)
- 3) Mariti Village, Meisori Sub-Location, Salabani Location  
(Representing Cluster C : Salabani Location)



**Table T.2-1 Classification of Study Area and Selection of PRA Sites**

Division/Location	Area (sq. km)	Ethnic Group	Classification of Study Area by Major Elements				Selection of PRA Sites							
			Agro-Ecological Zone		Access to Water Resources	Access to Market	Groups	Selected Location	Sub-Location	Village				
			Major Land Use	Topography										
1. Marigat Div.	743.2													
Marigat Loc.	188.2	Tugen, Ilchamus Turkana, Pokot, Etc	Inner Lowland Ranching Zone (IL-6)	Flat-Hilly	Pekerra Irrigation Scheme (NIB)	Best, Livestock Yard Cereal Depot	A	○	Perkerra	Kambi Waikuuma				
Eldume/Ingarua Loc.	113.4	Ilchamus, Tugen	IL-6	Flat	Eldume Irrigation Scheme (Community-MOA)	Fair	B	○	Ingarua	Niepes				
Ngambo Loc.	36.4	Ilchamus	IL-6	Flat		Fair, Small Trading Center	B							
Salabani Loc.	214.1	Ilchamus, Turkana, Tugen	IL-6	Flat	Chemeron Irrigation Scheme (KVDA)	Fair, Small Trading Center	C	○	Meisori	Marti				
Loboi Loc.	31.7	Tugen	Lower Midland Livestock-Millet Zone (LM-5)	Gentle Slope	Kamoskoi Irrigation Scheme (Community)	Fair Small Trading Center	D							
Sandai Loc.	18.3	Tugen	IL-6	Flat	Sandai Irrigation Scheme (Community-SIDA)	Fair Small Trading Center	D	○	Mpechot	Kamaech				
Kapkuikui Loc.	45.2	Tugen	LM-5	Gentle Slope		Good	D							
Kimalel Loc.	95.9	Tugen	LM-5	Hilly		Good Livestock Yard Cereal Depot	E	○	Sabor	Kapkl				
2. Mukutani Div.	480.8													
Mukutani Loc.	215.2	Ilchamus	LM-5	Flat-Hilly		Very Bad	F	○	Rugus	Nosukuro				
Arabal Loc.	108.7	Tugen	LM-5	Flat-Hilly		Bad	G	○	Arabal	Chemoro-ngion				
Kiseritian Loc.	156.9	Ilchamus	IL-6	Flat	Kiserian Irrigation Scheme	Fair, Livestock Yard, Small Trading Center	F							
Total	1,224.0													

- 4) Kamaech Village, Mpechot Sub-Location, Sandai Location  
(Representing Cluster D : Sandai, Lobo and Kapkuikui Locations)
- 5) Kapkole Village, Sabor Sub-Location, Kimalel Location  
(Representing Cluster E : Kimalel Location)

### **Mukutani Division**

- 6) Noosukuro Village, Rugus Sub-Location, Mukutani Location  
(Representing Cluster F : Mukutani and Kiserian Locations)
- 7) Chemolong'ion Village, Arabal Sub-Location, Arabal Location  
(Representing Cluster G : Arabal Location)

Throughout the field study, the Study Team were aware of the possibility that marginalised communities and minorities might not be included in these seven villages. To supplement the PRA Workshops, therefore the sites for RRA were selected in locations where PRA Workshops had not taken place, or in communities with unique characteristics such as Kampi Turkana and Kampi ya Samaki. Another purpose of RRA is to check the results of conventional surveys and key informant interviews.

## **2.2 Procedure of PRA Workshops**

The process of a PRA Workshop is characterized by the active participation of the selected participants who represent a cross-section of the community, and the intensive use of visuals and different discussion methods to facilitate people participation. About 50 participants including approximately 15 adult men, 15 adult women, 10 young men and 10 young women were selected with the help of Chiefs and Assistant Chiefs at each site.

Each PRA Workshop took five days and the following PRA techniques were used:

- 1<sup>st</sup> day: Introduction, Area Mapping, Village History, Want/Wish Analysis, and Transect Walk
- 2<sup>nd</sup> day: Poverty Profile, Community Background, Trends, Seasonal Calendar, Community Institutions, and Communal Resource
- 3<sup>rd</sup> day: Household Interviews (household activity patterns, household resource management, and farm sketches)
- 4<sup>th</sup> day: Village Plenary Meeting (to present PRA findings, rank problems and opportunities, and to define priority projects)
- 5<sup>th</sup> day: Village Development Planning (project objectives, expected impact, implementation action plan, local and external resource requirements, and management)

## 2.3 Results of PRA Workshops

### 1) Village History (See Table T.2-2)

The oldest village is Ntepes Village (Eldume Location) and people settled there in 1880. Kapkole Village (Kimalael Location) and Noosukuro Village (Mukutani Location) came into being in around 1910. In the village history of Noosukuro, many events before 1940 were described. The most recently settled villages are Ndambul Village I (Marigat Location), which had its origins in the NIB Perkerra Scheme at 1954, and Chemorongion Village (Arabal Location) which was established in 1933.

### 2) Poverty Profile (See Table T.2-3)

Though the number of cattle, goats and sheep is one of the wealth indicators in all the villages, animal numbers vary amongst them. In Ndambul Village I (Marigat) and Noosukuro Village (Mukutani), an individual has to have more than 100 or 200 cattle to be considered rich, while the number is 15 to 30 in Kapkole Village (Kimalael), Kamaech Village (Sandai) and Chemorongion Village (Arabal).

The sizes of middle class households also vary. The middle class forms more than 3/4 of Kapkole Village (Kimalael) and Ndambul Village I (Marigat), while it makes up about half of Kamaech Village (Sandai) and Chemorongion Village (Arabal), and forms only 1/4 of Marti Village (Salabani) and Ntepes Village (Eldume). This cannot solely be explained by differences between wealth indicators what is more there seems to be clear differences in the gap between rich and poor.

### 3) Benchmark Years (See Table T.2-3)

The drought of 1984 is chosen as a benchmark year in all the villages. Following that the first multi-party elections in 1992 is chosen by six out of seven villages, excluding Ntepes Village (Eldume). The 1997-98 El-Nino Effect is considered as simple rain in Ndambul Village I (Marigat), Marti Village (Salabani) and Kamaech Village (Sandai), where as it is the year of bumper harvest / plenty of milk in Kapkole Village (Kimalael) and Ntepes Village (Eldume).

### 4) Food Security Trend (See Table T.2-3)

The answer to the question "For how many months during the year was finding enough food to feed the family a serious problem?" was "more than six months" for all the villages except Kamaech Village (Sandai) where the answer was "at least once in these ten years." The answer was "zero to three months in these ten years" in Kamaech Village.

In 1984 when there was a severe drought, the answer was "12 months" at Kapkole Village (Kimalael), Marti Village (Salabani) and Chemorongion Village (Arabal). At

Chemorong'ion Village, the answer was still "11 months" for 1998.

5) Development Indicators Trend (See Table T.2-3)

Health/medical services have improved in Marti Village (Salabani) recently, but are deteriorating in Ndambul Village I (Marigat), Ntepes Village (Eldume) and Kamaech Village (Sandai). Diet/nutrition is improving in Kamaech Village, but has been deteriorating for ten years in Noosukuro Village (Mukutani). Education is also deteriorating in Noosukuro Village. Agriculture/livestock are deteriorating especially in Kamaech Village and Noosukuro Village. Water sources have become improved in Kamaech Village, but remain constant or are deteriorating in other villages. Natural resources have been improving for more than ten years in Kamaech Village.

6) Good things about the village (See Table T.2-4)

A good thing about the village was "livestock" for four villages namely Kapkole Village (Kimalel), Ntepes Village (Eldume) and Noosukuro Village (Mukutani). Chemorong'ion Village (Arabal) named "good grassland", "irrigation" was mentioned by three villages namely Ndambul Village I (Marigat), Ntepes Village and Kamaech Village (Sandai), and "unity, harmony and cooperation" was mentioned by three villages namely Kapkole Village, Ndambul Village I and Chemorong'ion Village. "Next to Baringo Lake" was mentioned by Marti (Salabani), and "the primary school" was mentioned by Noosukuro Village.

7) The future of the village (See Table T.2-4)

Solutions to water problems such as "clean drinking water", "adequate irrigation water" and "construction of dams" were chosen by all seven villages. "A dispensary" was mentioned by Ntepes Village (Eldume) and Kamaech Village (Sandai); "a village cultural center" was mentioned by Marti Village (Salabani) and "permanent school classes" by Kapkole Village (Kimalel).

8) Top four priority problems (See Table T.2-4)

Water concerns such as "insufficient drinking water" and "lack of irrigation water" were the most common problems, while "disease" was also chosen by all seven villages. "Disease" was the first priority of the women of Chemorong'ion Village (Arabal) and the men of Ndambul Village I (Marigat). "Shortage of food" and "low income" were mentioned in four villages.

9) Top four development opportunities (See Table T.2-4)

Again finding solutions to "water problems" was a dominant issue. Even the women of Chemorong'ion Village (Arabal) and the men of Ndambul Village I (Marigat),



whose priority problem was “disease”, did not choose “solution to health problems?” Lack of solution was mentioned often as a development opportunity rather than an issue of potential or capacity. (See Table T.2-4)

10) Two priority village development projects (See Table T.2-4)

Most of the priority projects involve solving “water problems.” Others are to “upgrade the primary school”, which was the second choice at Kapkole Village (Kimalel), “completion of the dispensary” was chosen the second choice at Ntepes Village (Eldume) and “improvement of the road network” at Noosukuro Village (Mukutani).

The Study Team learned from the results of the PRA that the seven villages, and most probably the seven clusters, have significantly different development problems and goals, even though the area and the population of the Study Area is not too large for a master plan study. At the beginning of the Study, the Team assumed that each cluster represented a certain stage in the transition from nomadic lifestyle to settled agricultural lifestyle both spatially and chronologically. But this assumption quite simply was not the case. Instead the phenomena would be explained by an assumption that each cluster is at a “different development stage” of a “different development process”

The Team also noticed that there were variety of problems other than water included in “priority problems”, but only water related construction projects remained as the workshops proceeded from “development opportunities” to “priority village development projects”. People tend to solely imagine construction projects with a lot of input from outside when they hear the word “project.” As soon as outsiders, such as the Study Team or government officers, go into a village, it is natural that people expect some input from outside. Therefore, outsiders need to be careful not to raise their expectations too high but even that precaution is not good enough. It seems to be necessary to facilitate and moderate to find ways to solve development problems with only a little input from outside.

### **3. Rapid Rural Appraisal (RRA)**

#### **3.1 Method**

As described in 2.1, the Study Area was classified into seven clusters and each PRA Workshop was held in a village representing each cluster. In contrast, RRA was mainly practiced in the locations where PRA Workshops had not taken place or in unique communities to supplement the PRA. The former case represented by Ngambo (Cluster B), Lobo and Kapkuikui Locations (Cluster D), and the latter case was represented by Kampi Turkana in Marigat Location (Cluster A) and Kampi ya Samaki in Salabani Location (Cluster C).


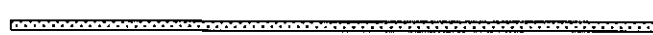


**Table T.2.2 Summary of PRA Results (1/3)**

PRA Site	Kapkole Village, Sabor Sub-location	Ndambul Village I Perkerra Sub-location	Marti Village, Meisori Sub-location	Ntepes Village, Inga'rua Sub-location	Kamaech Village, Mpechot Sub-location	Noosukuro Village, Rugus Sub-location	Chemorong'ion Village, Arabal Sub-location
Population (Households)	NA	1,000 (200)	430 (86)	640 (80)	438 (81)	900 (110)	374 (73)
Cluster	E	A	C	B	D	F	G
Location (Administrative Boundary)	Kimalel	Marigat	Salabani	Eldume Ngambo	Sandai Lobo Kapkuikui	Mikutani Kiserian	Arabal
PCM	○		○	○		○	○
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
Historical Events	<p>1910 The village came into being</p>			<p>1880 People came from Iketayo due to fighting between Ilchamus - Trukana</p>		<p>1912 Noosukuro Village established; District HQ at Kiserian by colonists 1915 First Chief 1918 Colonial Govern't moved District HQ from Kiserian to Kabarnett</p>	
			<p>1928 Ilchamus from Samburu settled 1935 Marigat-Kampi ya Samaki road surfaced with murrum</p>	<p>1934 Ntepes Village established</p>	<p>1932-39 Komaech Village established; Irrigation / first intake started; bee-keeping started; wild animals</p>	<p>1920 Ilkisirim drought 1929 1st circumcision (Ilparemo group) 1930 Second Chief 1935 Mukutani-Tangulbei Road 1938 Ngolongechai drought</p>	<p>1933 Tugen settled at Chemorong'ion</p>
		<p>1954 Irrigation Scheme originated 1956 The first crops (onions) planted</p>	<p>1947 Meisori Village became a Sub-Location 1954 Tugen from Kabartonjo settled</p>	<p>1943 Ngolonchai drought 1948 Eldume Primary School established 1950 Lariseur Rains, a bumper harvest 1951 Primary School moved to Salabani 1952 Perkerra Scheme established</p>	<p>1942-45 Drought; increase of population Second WW; outbreak of measles, malaria, and arthritis 1954-55 Heavy rains; land expansion</p>	<p>1952 Kipira drought</p>	
<p>1961 Heavy rains 1965 Famine</p>			<p>1965 Severe drought 1972 Kampi ya Samaki Road tarmac; CCF started education and health services 1975 Salabani cattle dip built 1980 Cholera outbreak</p>	<p>1961 Floods 1964 Ngolongo Olkinoi drought 1970 Ingarua Nursery School established 1973 Nadotolit drought</p>	<p>1961-65 Heavy rains; drought; Dysentery outbreak</p>	<p>1959 Circumcision (Ilmendoti group)</p>	<p>1964 Tikoluk road established 1967 First Chief appointed; Arabal Nursery and Pri. School constructed 1973 Severe drought 1975 ECF cattle diseases 1979 Kapidasim cattle dip</p>
<p>1980 Village boundaries were marked</p>	<p>1979 Started residing in the village</p>		<p>1981 Circumcision (Lmepoye age group) 1982 Turkana from Lodwar settled 1984 Severe drought; Lake Baringo dried up; Government's relief food 1986 Marti Women Group formed</p>	<p>1983 Catholic Church established 1984 Ngolong Ekilo drought; Ingarua Secondary School 1985 Eldume Irrigation Scheme established 1987 Tikirich Bridge constructed; Ntepes Women Group established 1988 Good harvest</p>	<p>1976-77 Sandai Nursery School; heavy rains blocked the canal; AIC Sandai</p>	<p>1969 Circumcision (Ilkiapu group) 1973 Ngolongeldama drought associated with an eclipse of the sun</p>	
<p>1984 The access road was constructed by the community 1985 The AIC-cum nursery school was constructed by the community 1987 Primary School was built</p>	<p>1986 The village was officially declared permanent by NIB; AIC church was built; Ndambul Kenya Wine was started 1990 A severe drought 1992 New Chief was appointed</p>		<p>1992 Salabani became a Location</p>	<p>1980-82 Permanent intake; a cattle dip; CCF came 1983-86 Sandai Primary School; first tractor came; drought; hybrid maize; Borana grade cows; shopping center</p>	<p>1987-92 Permanent structure for Sandai Pri. School; planting trees / soil conservation campaign; Catholic church; a road to Mpechot Village; Bamako Organization came</p>	<p>1984 Ngolongee Samoli drought 1986 Good harvest; AIC Church built; Noosukuro Primary School started 1987 Good harvest; Noosukuro Women Group started</p>	<p>1981 Circumcision (Kaplalach group) 1983 Arabal Women Group formed 1987 Severe drought; migration out of village; Arabal as a Sub-location 1988 Arusin water pan 1989 Mochongoi-Marigat road 1992 Mr. Koech became Chief and Mr. Kepyegon Assistant Chief; shopping center; Catholic Church; boundary conflicts between Tugen - Ilchamus; Arabal became a Location 1993 Severe drought; relief food; Yellow fever and meningitis diseases 1994 Floods 1995 Rinderpest disease (Brasta) 1996 Chemorong'ion Youth Group and Women Group formed 1997 Mr. Kipkitoo elected as Councilor; Youth Group collapsed 1998 Chemorong'ion Pri. School; World Vision came; Cholera outbreak; Circumcision (Kipnyigen group) 1999 Army worms destroy crops</p>
<p>1994 Intake for a piped drinking water system</p>	<p>1994 Ndambul Water Project initiated</p>		<p>1994 World Vision started education sponsorship program 1996 Salabani Secondary School started</p>	<p>1994 Circumcision (Ilmeseyaki group) 1995 Yellow Fever occurrence</p>	<p>1993-98 World Vision came; Sandai Water Users Association; Pipes for domestic water supply; El-Nino rains</p>		
<p>1998 El-Nino rains caused havoc</p>	<p>1998 El-Nino period; bumper harvest and good agricultural product sales</p>		<p>1997 Cholera and Meningitis outbreak 1998 Londani Women Group formed</p>	<p>1997-8 El-Nino rains; good harvest; Cholera outbreak 1998 New Apostolic Church established</p>		<p>1998 Mukutani Division and Divisional HQ established</p>	
<p>1999 The piped drinking water system extended to several water points</p>			<p>1999 Cholera outbreak</p>				

**Table T.2-3 Summary of PRA Results (2/3)**

PRA Site	Kapkole Village, Sabor Sub-location	Ndambul Village I Perkerra Sub-location	Marti Village, Meisori Sub-location	Ntepes Village, Inga'rua Sub-location	Kamaech Village, Mpechot Sub-location	Noosukuro Village, Rugus Sub-location	Chemorong'ion Village, Arabal Sub-location	
Location (Administrative Boundary)	Kimalel		Marigat	Salabani	Eldume Ngambo	Sandai Loboi Kapkuikui	Mukutani Kiserian	Arabal
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled	
Topography								
<b>Poverty Profile</b>								
<b>Rich</b>	* have 20 cows, 50 goats, 30 beehives * own 3 acre of land * either brick or iron sheet houses * own sofa sets and radios * have 6-7 children, secondary education	* have more than 200 cows, 300 goats * own shambas and plots * build brick houses * own cars, tractors, good furniture etc. * have 1-4 children, university education	* 50-100 cows, 100-150 sheep/goats * have 6-10 donkeys, 4-10 chicken * own 3-7 acres of land * have a bicycle/motor vehicle * 1-4 wives, educate their children	* have 50 cows, 50 goats, 50 sheep * have 4 acres in the irrigation scheme * can eat 3 meals per day * have a bicycle, radio, sofa set, TV set * 2 wives, educate their children	* have 30 cattle, 40 goats, 20 sheep * cultivate 2 acres * thatched with good grass/iron sheets * have a bicycle, radio * have 5 wives, 5-10 children sec./univ.	* may own 100 cattle, 200 goats * have a farm, operate a shop * have an iron sheet roof * have a radio, bicycle, sofa set, bed * Form 4 or higher / have several wives	* 15-30 cattle, 20-60 goats, 20 chicken * 5 donkeys, 10-20 beehives * have 2-3 wives * have a bicycle * up to primary or secondary school	
<b>Middle</b>	* have 10 cows, 15 goats * have up to a quarter of an acre * live mostly in thatched houses * have good clothing * have 6-10 children up to Standard 8	* have 20 goats * own 3 acre of land, 1/2 acre plot * own wooden furniture * own bicycles, may have motorcycles * have 5-7 children, secondary education	* have 30-50 cows, 30-60 sheep/goats * have 2-4 donkeys, 15-20 chicken * own 3-5 acres of land * have a bicycle * 1-2 wives, educate their children	* have 10 cows, 20 goats * live in a grass thatched house * can eat 2 meals per day * use second hand clothes * one wife, educate their children	* 10 cattle, 10 chicken, 3 sheep, 15 goats * cultivate 1 acre and rent 1 to the rich * thatched with grass of poor quality * majority participants in meetings * have 2-3 wives, 12-15 children Form 4	* have 40 cattle, 60 goats, 5 chicken * have a farm, might operate a shop * would have traditional seat/cloth/bed * may have a radio or a bicycle * may have more than one wives	* 10-20 cows, 10-20 goats, 15 chicken * 1 donkey, 5-10 beehives * have 2 wife * do not own tangible assets * a few children up to pri./secondary	
<b>Poor</b>	* have no cows or goats * no furniture, sleep on animal skins etc. * live in very small thatched * depend on casual labor * have 4-5 children	* have 3-4 goats * in poor health, nutritional condition * have thatched houses in bad condition * not enough food, adequate income * have 6-10 children, up to Standard 4	* have 1-5 cows, 1-4 sheep/goats * have 2 chicken * own 1/2 acres of land * engage in casual labor * have one wife	* 2 cows, 5 goats, 3 sheep, 2 chicken * live in a grass thatched house * eat 1 meal per day * wear tattered clothes * one wife, 3 children with no education	* have no goats or livestock in general * have no land * wear poor clothing * have 8-10 children up to Standard 6	* have 6 cattle, 2 goats, 12 chicken * do not have a shop or farm * do not have a radio, bicycle * use traditional dresses * have one wife	* 3-8 cows, 1-10 goats, 10 chicken * no donkeys, 1-2 beehives * have one wife * do not have tangible assets * educate a few children	
<b>Poorest of the Poor</b>	NA	* have no cows or goats * in poor health, nutritional condition * thatched houses in very bad condition * rely on relief food from the government * have 3-5 children with no education	* have no cows, sheep/goats * have 0-5 chicken * do not have a shamba * provide casual work to others * have little food, may be a single parent	* do not have a wife or husband * live in a grass thatched house * rarely or occasionally eat proper meals * use traditional clothes/may be a beggar * borrows from rich/middle households	NA	* not cattle or goats, but 5 chicken * do not have a farm * do not have a radio, bicycle * use traditional dresses * have one wife	* no cows, donkeys or goats * have 6 chicken * are often single parents * do not have tangible assets * do not educate their children	
<b>Poverty Profile of female-headed and male-headed households (Poorest/Poor/Middle/Rich)</b>								
<b>Benchmark Years</b>	1984 drought; Relief food; Cows died 1985 Heavy rains; Bumper groundnut harvest 1989 Heavy Malaria Outbreak; Census 1992 First multi-party elections; Land clashes 1993 Menengitis outbreak 1997 Second elections; Start of El-Nino Rains 1998 El-Nino rains; Bumper groundnut harvest; Cholera outbreak	1984 drought 1987 All African Games; Start of Kenya Wine Company 1992 First Multi-party elections 1993 Tribal clashes 1996 Yellow Fever /Typhoid outbreaks 1997-98 El-Nino rains	1984 drought 1989 National Census 1992 Multi-party elections 1997 El-Nino rains	1984 drought (Ng'olunge Kilo) 1985 Road construction 1986 Little rainfall 1990 Earthquake 1993 drought and famine 1998 Good harvest and plenty of milk	1984 drought 1986 Comet star 1989 Census 1992 First multi-party elections 1993 Yellow Fever 1995 New location (Sandai) 1996 Typhoid epidemic 1997 El-Nino rains; Cholera epidemic; Elections	1984 Ngolongee Samoli drought 1985 Building of Noosukuro Pri. School 1991 drought in Noosukuro Village 1992 First multi-party elections 1995-98 drought period in Noosukuro Village	1984 drought 1989 Population census 1990 Multi-party election 1998 Bomb blast	
<b>Food Security Trend</b>	1979 6 months (No food aid) 1984 12 months (Relief food) 1989 4 months (No food aid) 1993 8 months (No food aid) 1998 3 months (No food aid)	1982 5 months (No food aid) 1987 9 months (Relief food) 1992 6 months (No food aid) 1996 7 months (Relief food) 1998 2 months (No food aid)	1982 9 months (No food aid) 1984 12 months (Relief food) 1989 6 months (No food aid) 1992 10 months (Relief food) 1997 5 months (No food aid)	1980 7 months (Relief food) 1985 5 months (No food aid) 1990 9 months (Relief food) 1995 3 months (No food aid) 1998 4 months (No food aid)	1980 9 months (Relief food) 1984 4 months (Relief food) 1989 2 months (Relief food) 1993 0 months (No food aid) 1997 3 months (Relief food)	1978-83 7 months (No food aid) 1983-85 4 months (Relief food) 1985-90 2 months (No food aid) 1990-95 8 months (No food aid) 1995-98 8 months (No food aid)	1982 10 months (No food aid) 1984 12 months (Relief food) 1989 8 months (No food aid) 1990 11 months (Relief food) 1998 11 months (Relief food)	
<b>Dev't Indicators Trend</b>	1979 1984 1989 1993 1998	1982 1987 1992 1996 1998	1982 1984 1989 1992 1997	1980 1985 1990 1995 1998	1980 1984 1987 1993 1997	1978-83 83-5 85-90 90-5 95-8	1982 1984 1989 1990 1998	
Health/medical	↑ → → → ↓	→ → → ↓ ↓	→ → → → ↑	→ ↓ ↓ ↓ ↓	↑ → ↓ ↓ ↓	↓ → → → →	↓ ↓ ↓ ↓ →	
Diet/nutrition	↓ → ↑ → →	↓ → → ↓ ↓	→ → → → →	→ ↓ → → →	↑ → → → ↓	→ → ↓ ↓ ↓	↓ ↓ ↓ ↓ →	
Education	↓ ↑ → → →	↓ → → ↑ ↑	→ → → → →	→ ↓ → → →	↑ → → → ↓	→ → ↓ ↓ ↓	↓ ↓ ↓ ↓ →	
Village access	↓ → ↑ → →	↓ → → → →	→ → → → ↓	→ ↑ ↑ → →	↓ ↓ ↑ → →	↓ ↓ ↓ ↓ ↓	↓ ↓ ↓ ↓ →	
Agriculture/Livestock	↑ ↓ ↑ → →	↓ → → → →	→ ↓ ↑ → ↑	→ ↓ → → →	→ → ↓ ↓ ↓	→ → ↓ ↓ ↓	↑ ↓ → → ↓	
Water sources	↑ ↓ ↑ → →	↑ → → ↓ ↓	→ ↓ → → →	→ ↑ → ↓ ↓	→ → → ↓ ↓	↓ ↓ ↓ ↓ ↓	↑ ↓ → → ↓	
Natural resources	↑ ↓ ↑ → →	↑ → ↓ ↓ ↓	→ ↓ → → →	→ ↑ → ↓ ↓	↓ ↑ ↑ ↑ ↑	↓ ↓ ↓ ↓ ↓	↑ ↓ → → →	

**Table T.2-4 Summary of PRA Results (3/3)**

PRA Site	Kapkole Village, Sabor Sub-location	Ndambul Village I Perkerra Sub-location	Marti Village, Meisori Sub-location	Ntepes Village, Inga'rua Sub-location	Kamaech Village, Mpechot Sub-location	Noosukuro Village, Rugus Sub-location	Chemorong'ion Village, Arabal Sub-location
Location (Administrative Boundary)	Kimalel	Marigat	Salabani	Eldume Ngambo	Sandai Lobi Kapkuikui	Mukutani Kiserian	Arabal
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
Good things about the village are :	* The <u>livestock</u> liked by many people nation wide, because the meat is very sweet * The <u>unity</u> among the village people	* The <u>farming</u> activities and good harvests * People live in <u>harmony and unity</u>	* The village is next to <u>Lake Baringo</u> * The village is close to the <u>hospital</u> at Kampi ya Samaki town	* <u>Farming</u> in the Perkerra Irrigation Scheme * <u>Livestock</u> keeping as source of income	* Having an <u>irrigation scheme</u> * the Sandai <u>Cooperative</u> Association	* Noosukuro <u>Primary School</u> * Our <u>goats and sheep</u>	* The village is next to a <u>grazing site</u> * People are <u>cooperative</u>
What the villagers would like to see in the future is :	* A reliable <u>pipd water system</u> taking water from Kimao Dam * Permanent <u>primary school</u> classes	* Safe and clean <u>water</u> * Adequate <u>irrigation water</u>	* A <u>dam</u> with irrigation water * A village <u>cultural center</u> as a tourist attraction	* Enough water for <u>irrigation</u> * A <u>dispensary</u>	* Construction of a <u>dam</u> * A <u>dispensary</u>	* <u>Irrigation</u> at Ngasotok River * <u>Access roads</u>	* Clean <u>drinking water</u> * A <u>dam</u> for irrigation
Top Four Priority Problems							
By Women	1. <u>Farming</u> in the water catchment areas 2. <u>Insufficient/distant drinking water</u> 2. <u>Health services</u> far from the village 2. No one has <u>land title deed</u>	1. <u>Unclean drinking water</u> 2. <u>Inadequate school</u> facilities 3. <u>Diseases</u> (Malaria, Typhoid) 4. <u>Poor sanitation</u>	1. <u>Lack of clean drinking water</u> 2. <u>Lack of irrigation water</u> 3. <u>Shortage of food</u> 4. <u>Low income</u>	1. <u>Lack of irrigation water</u> 2. <u>Low income level</u> 3. <u>Food shortage (hunger)</u> 3. <u>Unemployment</u> of the young educated	1. <u>Irrigation water seepage</u> 2. <u>Water and land</u> need urgent attention 3. <u>Poor sanitation</u> 3. <u>Low income sources</u>	1. <u>Lack of alternatives sources</u> of livelihood 2. <u>Inadequate water for irrigation</u> 3. <u>Food shortages / Lack of clean drinking water / Insecurity</u>	1. <u>Human diseases</u> 2. <u>Animal diseases</u> 3. <u>Shortage of food</u> 4. <u>Lack of clean drinking water</u>
By Men	1. <u>Insufficient/distant drinking water</u> 1. <u>Farming</u> in the water catchment areas 3. <u>Poor farming activities</u> 4. <u>Overgrazing/soil erosion</u>	1. <u>Diseases</u> (Malaria, Typhoid) 2. <u>Insufficient irrigation water</u> 3. <u>Unclean drinking water</u> 4. <u>Inadequate school</u> facilities	1. <u>Lack of irrigation water</u> 2. <u>Lack of clean drinking water</u> 3. <u>Human diseases</u> 3. <u>Inadequate water</u> in Loturo water pan 3. <u>Shortage of food</u>	1. <u>Lack of safe clean drinking water</u> 2. <u>Lack of irrigation water</u> 3. <u>No cattle dip and veterinary services</u> 3. <u>Unemployment</u> of the young educated 3. <u>High incidence</u> of human/livestock diseases	1. <u>Water and land</u> need urgent attention 2. <u>Irrigation water seepage</u> 3. <u>Low income sources</u> 4. <u>Poor sanitation</u>	1. <u>Inadequate water for irrigation</u> 2. <u>Lack of clean drinking water</u> 2. <u>Insecurity</u> 3. <u>Food shortages</u> 3. <u>Inadequate infrastructure and facilities</u>	1. <u>Inadequate rain water</u> for farming 2. <u>Lack of clean drinking water</u> 3. <u>Human diseases</u> 4. <u>Arusin silted dam</u>
Top Four Key Dev't Opportunities							
By Women	1. <u>Construction of Kimao Dam</u> 2. The <u>school</u> has space for expansion 3. <u>Water pipes</u> are laid up to the village 4. Site has been identified for a <u>water pan</u>	1. Plot for <u>water tank</u> 2. <u>Water for building pan</u> 3. Reserved plot for <u>school</u> 4. Presence of <u>development organizations</u>	1. Site for <u>bore-hole</u> available in the village 2. River Moro potential for <u>irrigation water</u> 3. <u>Fertile soils</u> 4. Available skills in <u>handicrafts</u>	1. <u>Tikirich River</u> 2. Existing <u>irrigation canal</u> 3. Topography and soils suitable for <u>irrigation</u> 4. <u>Educated people &amp; committed leadership</u>	1. <u>Construct dam</u> to store water 2. <u>River Waseges</u> passes through the village 3. <u>Zero grazing</u> is viable 3. <u>Water pipes</u> have been laid	1. <u>Control of Ngasotok for irrigation</u> 2. Explore <u>business</u> opportunities 3. Provision of clean <u>domestic water</u> 4. Plot for <u>dispensary / Establishment</u> of a police post	1. <u>Arusin silted dam</u> 2. <u>Fertile soils</u> 3. Existence of <u>primary school</u> 4. All weather <u>access road</u>
By Men	1. <u>Water pipes</u> are laid up to the village 2. <u>Streams</u> in the village that can be protected 3. The <u>school</u> has space for expansion 4. Site has been identified for a <u>water pan</u>	1. <u>Water for building dam</u> 2. <u>Farming land</u> 3. Plot for <u>water tank</u> 4. <u>Fertile soils</u>	1. River Moro potential for <u>irrigation water</u> 2. Village has large heard of <u>ostriches</u> (farming) 3. Availability of <u>Lake Baringo</u> (water and fish) 4. Site for <u>bore-hole</u> available in the village	1. Existence of incomplete <u>dispensary</u> 2. Awareness of the need to improve <u>sanitation/hygiene</u> 3. <u>Tikirich River</u> 3. <u>Educated people &amp; committed leadership</u>	1. <u>Construct dam</u> to store water 2. Formulate <u>management system</u> 3. <u>River Waseges</u> passes through the village 4. <u>Grazing land</u> has been allocated	1. <u>Control of Ngasotok for irrigation</u> 2. Improve the <u>road network</u> 3. Plot for <u>dispensary</u> 3. Provision of clean <u>domestic water</u> 3. Establishment of a <u>police post</u>	1. Existence of <u>River Arabal</u> 2. Willingness to <u>contribute</u> to projects 3. <u>Arusin dam</u> willingness 4. Existence of <u>primary school</u>
Two Priority Village Development Projects	1. Kapkole <u>water project</u> 2. Upgrading Kemoigut <u>Primary School</u>	1. Construct <u>irrigation dam</u> 2. Construct Ndambul <u>Water Tank</u>	1. Drilling of <u>bore-hole</u> 2. Expansion of Loturo <u>Dam</u>	1. Tikirich intake construction and <u>irrigation</u> 2. Completion of Inga'rua <u>Dispensary</u>	1. Construction of Kamaech <u>Dam</u> 2. Sandai <u>Dispensary</u> self-help project	1. <u>Control of Ngasotok for irrigation</u> 2. Improve the <u>road network</u>	1. Expansion of Arusin <u>Pan</u> 2. Tapping water from Arabal River ( <u>water tank</u> )

Only the major areas of questions were decided beforehand and interviews were done in a non-structured way. The areas were as follows:

- 1) Occupation, major source of income, seasonal calendar
- 2) Family structure, education, family history
- 3) Type of house, assets
- 4) Drinking water, diet, cooking
- 5) Health and sanitation
- 6) Daily life, expenditure

### **3.2 Results of RRA**

A summary of the results of RRA is shown in Table T.3-1. Some of the findings were that:

- 1) More people moved in from outside in the Marigat, Salabani and Lobo Locations.
- 2) The number of cattle owned by each household was higher in Mukutani Location.
- 3) Most people use firewood for cooking.
- 4) People need to go far to fetch firewood, especially in Salabani Location.

## **4. Project Cycle Management (PCM) Method**

### **4.1 PCM Workshops with the Central, District and Division Administration**

PCM Workshops with the Central, District and Division Administration were held four times during the first field work which lasted three months. (The records of the workshops are shown in Appendix G.)

- 1) PCM Workshop with Central Administration on 13 August, 1999

The purpose of this workshop was to share information and to analyze the general situation of the Study Area. A participation/Stakeholder Analysis was done.

- 2) PCM Workshop with Division Administration on 24 August, 1999

The purpose of this workshop was to share information and to analyze the characteristics of each location.

- 3) PCM Workshop with Central, District and Division Administration in the week of 13 September, 1999

The Study Team spent several days training five PCM Workshop moderators/facilitators, one from Central Administration (Social Development Officer), one

**Table 5.3-1 Summary of RRA Results**

Location (Administrative Boundary)	Kimalel	Marigat	Salabani	Eldume Ngambo	Sandai Lobo Kapkuikui	Mikutani Kiserian	Arabal
Population (Households)	6,790 (1,235)	11,852 (2,155)	7,377 (1,341)	11,347 (2,062)	5,167 (939)	8,372 (1,522)	3,297 (600)
Area (km <sup>2</sup> )	95.9	188.2	214.1	149.8	95.2	372.1	108.7
Cluster	E	A	C	B	D	F	G
PCM	○		○	○		○	○
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
Ethnic Group	Tugen(x 1)	Tugen(x 7), Il Chamus(x 2), Turkana(x 8)	Il Chamus(x 1), Turkana(x 1), NA(x 3)	Il Chamus(x 4), Tugen(x 1), NA(x 2)	Tugen(x 3), NA(x 3)	Il Chamus(x 5), Pokot(x 2), NA(x 2)	Tugen(x 6), NA(x 5)
Family History	Born here(x 1)	From Kapedo(x 7), from Kabarnet(x 3), born here(x 1), from Kiserian(x 1), from Arabal(x 1), from Turkana(x 1),	From Turkana(x 1), from North of Lake Baringo(x 1)	Born here(x 2), from Perkerra(x 1)	From Koibatec(x 2), from Kaibos(x 1), from Eminie(x 1)	Born here(x 3)	Born here(x 1)
Family Member	4	More than 19, 12, 10, 10, 8, 7, 6, 5, 4, 4, 4, 3, 3, 1, 1	10, 4	More than 8, more than 8, 8, 8, 7	19, 12, 6, 4	25, more than 10, 9, 9, 8, 8, more than 7,	11, 8, 6, 5, 4, 3
Source of Income	Livestock(x1), honey(x1)	Casual labor(x5), farming(x4), none(x2), livestock(x2), sales(x2), butcherman(x1), housewife(x1), charcoal burning(x1), restaurant(x1), honey(x1)	Livestock(x 1), farming(x 1), honey(x 1)	Farming(x 4), livestock(x 2), teacher(x 2), labor(x 1), milk(x 1)	Livestock(x 4), farming(x 3), honey(x 2), casual labor(x 1)	Livestock(x 6), farming(x 5), dispensary(x1), fish(x 1), honey(x 1), milk(x 1), aroe(x 1)	Livestock(x 4), farming(x 2), honey(x 1), aroe(x 1), policeman(x 1)
Assets	15 cattle + 20 goats	Restaurant + rental house + 15 acre + 12 cows, 8 cows + 12 goats + 7 sheep, kiosk + a few cows + goats + sheep, 3 cows + 10 goats + 40 sheep, 3 cows + 60 goats, 20 goats + 30 sheep, 30 goats + 8 hen, 6 goats, 4 goats + 8 hens, bicycle, 1 goat, 1 hen, none(x3)	40 cows + 30 goats + 4 sheep + 30 chicken + 4 beehives, a little goats + hens	25 cattle + 25 goats, irrigated land + 10 cattle + 50 goats, 8 cows + 7 goats + 12 sheep, 5 cows + 5 calves + 10 goats + 3 hens, 3 cows + 20 goats + 2 chicken,	40 cows + 30 goats + 4 sheep + 30 chicken + 4 beehives, 5 acre + 20 cattle + many goats + 10 sheep + 5 hens, 4 acre + 10 cattle + 20 goats + 15 hens, 2 acre + 2 cows + 6 goats + 15 beehives, 1 acre + 6 cows + 10 goats, 1 acre + 5 cows + 10 goats + 6 chicken + 2 beehives + 1 dog	2 acre + 200 cows + 300 goats + 100 sheep + 8 donkeys, irrigated land + 20 cattle + 60 goats, 15 cattle + 20 goats, 3 acre + 14 cows + 20 goats, 3 acre, 2 acre + 5 cows + 5 goats, 4 cattle + 15 goats + 8 beehives + 1 donkey	15 cows + 60 goats + 3 chicken + 3 donkey, 0.5 acre + 8 cows + 10 goats, 0.5 acre + 8 goats + 10 beehives, 0.5 acre rainfed + 4 cows + 24 goats + 2 beehives, irrigated land + 4 cows + 8 goats, 3 cows + 20 goats
Type of House	Wooden house with iron roof(x1)	Thatched roof / semi-permanent / wood & mud(x7), iron roof(x6), wooden house with iron roof(x3)	Round one-roof by stone & mud(x1)	Round one-roof by tree and mud(x1), wooden house with iron roof(x1)	Round one-roof by tree & mud(x3), wooden house with iron roof(x1),	Round one-roof by tree & mud(x4)	Round one-roof by tree and mud(x4), modern house(x2)
Water source	Communal water tap(x1)	Perkerra canal(x12), tap(x2)	Lake Baringo(x1)	Perkerra canal(x2), Moro River(x2), tap(x2)	Lobo River(x4), tap(x3), Waseges River(x1), spring near Lobo River(x1)	Mikutani River(x4), pan water(x1), Arabal River(x1), Lake Baringo(x1)	Arabal River(x6), Arusian Pan(x2), spring(x1)
Time / Distance	0.5 km	30 min(x4), few minutes(x2), very close(x1), in the house(x1)		4 km(x1), near house(x1)	Near(x1)	3 km(x1), 2 km(x1), 1 km(x1), near(1),	4 km(x1), 3 km(x1), 1 km(x3), 300 m(x1)
Amount per day		40 little(x7), 100 little(x1), 60 little(x1), 20 little(x1), irregular(x1)		60 little(x1), 50 little(x1), 40 little(x1)	40 little(x2), 80 little(x1)	25 little(x1)	20 little(x4), 50 little(x1)
Fuel	Firewood(x1)	Firewood(x12), charcoal(x2), paraffin(x1), kerosene(x1), electricity(x1)	Firewood(x1)	Firewood(x5)	Firewood(x4), kerosene(x1)	Firewood(x5)	Firewood(x4)
Fetching per week	Around the village	Twice(x4), purchase(x2), once(x1)	Twice 12 km away(x1)	Twice(x1), once(x1), around the village(x1), several times a month(x1)	Twice(x1), every two days(x1)	Around house(x1)	Everyday(x1)
Health Services		Malaria(x12), cough(x5), diarrhea(x2), cholera(x1), pneumonia(x1),		Malaria(x4), cough(x2), typhoid(x2), diarrhea(x1), pneumonia(x1)	Malaria(x5), cough(x1), yellow fever(x1), TB(x1), diarrhea(x1), typhoid(x1)	Cholera(x2), malaria(x1)	Malaria(x4), Cough(x2), cholera(x1), diarrhea(x1), high fever(x1)
Where		Marigat Health Center(x11)		Marigat Health Center(x1)	Lobo Dispensary(x3), Marigat Health Center(x2)	Mikutani Dispensary(x2)	Kiserian Dispensary(x3), Marigat Health Center(x1), mobile clinic(x1)
Expenditure		Food(x9), clothing(x2), education(x2), renting house(x1), utensils(x1), animal treatment(x1), chemicals(x1)			Food(x2), education(x2), clothes(x1), seeds(x1)		Food(x1)
Food	Ugali(x1), skim milk(x1)	Ugali(x8), vegetable(x6), donated maize(x1), fish(x1), goat(x1), beans(x1)	Ugali(x1), vegetable(x1), fish(x1)	Ugali(x2), milk(x2), vegetable(x2)	Ugali(x3), milk(x3), vegetable(x3)	Ugali(x4), milk(x3), vegetable(x3), fish(x1)	Ugali(x5), milk(x4), vegetable(x2), beans(x2), maize(x2), millet(x1)
Dreams		Children's education(x3), no dream(x3), to have a kiosk(x2); a car(x1); 5 cows(x1); farming land(x1), animal trading(x1), water(x1)		Education(x3), irrigation water(x1)	Having a kiosk(x2), education(x1), new house(x1)	Buying generator for pump(x1), fruit trees(x1), children's education(x1), farming land(x1), having 100 cows and 300 goats(x1)	Better life(x1), relaxed life(x1), irrigation(x1), having 100 livestock(x1), making and selling sisal rope to buy maize and to borrow farmland(x1), to have children(x1), to make clothes(x1)

from District (District Project Officer), two from Division (Livestock and Nutrition) and one local consultant.

#### 4) PCM Workshop with Central and District Administration on 27 October, 1999

Based on the results of PCM Workshops at the community level, rough Project Design Matrices (PDM/Logical Framework) were made in Nairobi.

### 4.2 Selection of PCM Workshop Sites

After analyzing the results of PRA Workshops, RRA and conventional surveys, the Study Team selected five PCM Workshop sites to represent the Study Area. Future application of the verification projects in other ASAL areas was also considered as a factor in the selection.

As described in 2.3, many issues could be better explained by the assumption that each cluster is at a “different development stage” of a “different development process”. Therefore, the Study Team tries to not only analyze the whole Study Area using one model, but to also consider that each cluster is parts of a unique development process. That means, some components of verification projects are common throughout the Study Area, but some are specific to the stage and the process. The five PCM sites were selected as follows.

- 1) Kampi Turkana : The poorest community in the Study Area
- 2) Kampi ya Samaki : A cosmopolitan community near Lake Baringo, in the Study Area. Potential for tourism, fishery and small scale industries is high.
- 3) Sandai, Lobo and Kapkuikui: Relatively abundant in irrigation water, and the most developed locations in the Study Area
- 4) Rugus : A traditional community. Isolated, but rich in grassland.
- 5) Arabal : Abundant in land resources for livestock, but poor in health and sanitation conditions.

### 4.3 Procedure of PCM Workshops

The participatory planning components of the PCM Method, a method similar to Objectives Oriented Project Planning (ZOPP) developed by GTZ, consists of Participation/Stakeholder Analysis<sup>4/</sup>, Problem Analysis<sup>5/</sup>, Objectives Analysis<sup>6/</sup>, Project

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<sup>4/</sup> Participation Analysis identifies the conditions and characteristics of local residents groups and organizations likely to be affected by the aid project and determines whose problems should be solved. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>5/</sup> Problem Analysis visually represents the causes and effects of existing problems pertaining to the project area or sector in the form of a problem tree. This process begins with selection of a core problem. The tree is then expanded both upward and downward as the causes and effects of the problem are identified. (*PCM Management Tool for Development Assistance*, 1997, FASID)

Selection<sup>7/</sup> and Project Design Matrix<sup>8/</sup> (PDM or logical framework).

In the early stage of planning, tools such as Participation Analysis, Problem Analysis and Objectives Analysis are more important in deciding the “what” and “where” of the potential project, and it is usually too early to do a detailed project design to describe “how.” Also for drawing up a Master Plan, Project Selection is used for prioritizing projects in the short-term, medium-term and long-term rather than for selecting one or two projects. Thus, the Study Team used the PCM Method in the following ways.

#### 1) Participation Analysis

The Study Team avoided using the word “project” at this stage. “Project” could be mistaken to mean a large construction project, even though the Team repeatedly explained about community-based projects. The Team also noticed that the understanding of the meaning of “opportunities” and “potential” by the local people was different from that of the Team, so the Team used the phrase “what the villagers can do” instead. The Team did not identify the Target Group, because the term “the villagers” is good enough to describe the Target Group at this stage of planning.

#### 2) Problem Analysis

Since the Study is still at the Master Plan stage, the Study Team asked the moderators/facilitators to keep as wide a scope as possible when participants were deciding upon a core problem. By doing this, the participants could analyze and plan not only for one sector such as water, but also for many sectors such as health, income generation, and education. The Study Team also noticed that the scope of discussion sometimes tended to become too focused during the Problem Analysis. Thus the Team asked the moderators/facilitators to let the participants go back and see the results of the Participation Analysis. During a discussion about marketing, most of the participants only mentioned issues concerning “few buyers” or “poor market” and did not talk about their specific problems which they could solve or improve by themselves. In those cases, the Team asked the moderators/facilitators to explain the problems of the supply side such as quality, quantity and delivery of products and services.

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<sup>6/</sup> Objectives Analysis is a process for identifying the desirable situation that would be attained once problems have been solved, and clarifying the *means-end* relationship required to attain such a condition. Like the Problem Analysis stage, this stage also requires the development of a tree called objectives tree. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>7/</sup> Project Selection is a process of identifying project components and the feasibility as well as selecting a specific project strategy based on the information obtained in the Objectives Analysis process. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>8/</sup> Project Design Matrix is a summary of the project design process to elaborate the major project components and plans based on the approaches selected in the Project Selection (*PCM Management Tool for Development Assistance*, 1997, FASID)



### 3) Objectives Analysis

There were no special instruction for this Study was used to carryout an Objectives Analysis.

### 4) Project Selection

The aim was the prioritization of approaches rather than the selection of projects. The only criterion used for prioritizing wasagain “what the villagers can do.”

### 5) Project Design Matrix

At the workshops with the villagers, only a narrative summary, which contains the Overall Goal<sup>9/</sup>, Project Purpose<sup>10/</sup>, Outputs/Results<sup>11/</sup> and Activities<sup>12/</sup>, was determined. As for activities, whether or not the villagers can take action by themselves was also clarified. At Workshops with Central and District Administration, activities that could be done by the villagers and by the GOK were also clarified separately. Other elements such as Input, Important Assumptions<sup>13/</sup>, Objectively Verifiable Indicators and Means of Verification were not considered in the Phase I Study. The Study Team judged that there was not enough information to define them at this stage where it is not clear how much activity and input will be possible for the verification projects. Also the Team did not want to raise the expectations of the villagers too much, when no commitment could be made.

## 4.4 Results of PCM Workshops

The outline of the results of the PCM Workshops is shown in Table T.4-1, T.4.2 and the details are in Appendix G. The main purpose of the PCM Workshops was to take a participatory approach and to think “with the people” for planning and finding possible verification projects. Therefore, the projects prioritized by the PCM Workshops are different from those prioritized in the Master Plan or in the PRA Workshops.

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<sup>9/</sup> Overall Goal: The development effect expected as a result of the achievement of the *Project Purpose*. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>10/</sup> Project Purpose: The objective that is expected to be achieved by the time the project is completed. It should be described as a specific benefit or impact given to the target group. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>11/</sup> Outputs/Results: Outputs/Results are objectives to be realized by the project in order to achieve the *Project Purpose*. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>12/</sup> Activities: Activities are specific actions intended to produce the *Outputs/Results* of the project by effective use of the *Inputs*. (*PCM Management Tool for Development Assistance*, 1997, FASID)

<sup>13/</sup> Important Assumptions: Conditions required for the success of a project but that exist outside the control of the project. Also, it is not assured whether the assumptions are fulfilled or not. (*PCM Management Tool for Development Assistance*, 1997, FASID)

## 1) Participants of the PCM Workshops

The number of participants at the five PCM sites ranged from 31 to 66 at maximum. The attendance rate was highly constant in Kampi Turkana and Arabal, but not much so in Kampi ya Samaki and Sandai / Lobo / Kapkuikui.

The female ratio was as high as 66 percent in Kampi Turkana and 49 percent in Rugus, but was not so high in Kampi ya Samaki (35 percent) and was low in Sandai / Lobo / Kapkuikui (24 percent or eight women) and in Arabal (16 percent or eight women).

By age distribution, people in their 30s and 40's made up around 60 percent in Kampi Turkana and Kampi ya Samaki, while people in their 20s made up around 60 percent in Sandai / Lobo / Kapkuikui, and people in their 20s and 30's made up around 70 percent in Arabal. In Rugus, about 40 percent were older than 50 years old.

The gap between female and male education was quite high at all the sites. About 80 percent of the women in Rugus and about 50 percent of women in Arabal had never been to school at all. In contrast, about 50 percent of men and about 40 percent of women proceeded to secondary school in Sandai / Lobo / Kapkuikui. The differences among the sites are obvious even if the age distribution of the participants is taken in account.

The major sources of income were basically farming and livestock, apart from in Kampi Turkana and Kampi ya Samaki. Most of the villagers were engaged in casual labor in Kampi Turkana, and about 60 percent was officers or in business in Kampi ya Samaki. Fishermen made up almost 20 percent of the working population in Kampi ya Samaki and Rugus.

Participants responded that they had around seven siblings at all sites except Rugus, where the number was less than six.

## 2) Core Problem and Direct Causes

The Core Problems were "not enough money" or "low income" in Kampi Turkana and Arabal, "low standards of living" was reported in Kampi ya Samaki, "shortages of food" in Sandai / Lobo / Kapkuikui, and "not enough water for drinking" in Rugus.

The Direct Causes were focused on "jobs" in Kampi Turkana, "water" in Rugus and "livestock" in Arabal, but covered a wider scope in Kampi ya Samaki and Sandai / Lobo / Kapkuikui.

Population growth and family planning were hot issues in Kampi Turkana, Kampi ya Samaki and Sandai / Lobo / Kapkuikui. Health services including those for livestock were discussed intensively at all the sites apart from Rugus.

### 3) Priority Projects

It did not take much time to decide the Priority Projects in Kampi Turkana (“Villagers of Kampi Turkana can sell ballast and other products well?”) and Rugus (“A long standing pan / a separate dam for people and cattle?”), but there was hot discussion between several issues at the other sites. As a result, Kampi ya Samaki chose projects to ensure “clean drinking water” and “enough income”, Sandai / Lobo / Kapkuikui chose “irrigation”, “animal disease” and “farming method” projects, and Arabal chose “livestock” and “prevention of disease (including those of animals).

### 4) PCM Workshop at Kampi Turkana

Participants : Total : 32 (female 22, male 10) recorded  
Peak : 35 (female 23, male 12) counted  
Average age: 35 years old, mode: 40s (12 people)  
Core Problem : Villagers of Kampi Turukana do not get enough money.  
Priority Projects : (1) Villagers of Kampi Turkana can sell balast and other products well.  
(2) Skill development.

Others :

- The number of female participants was more than twice that of male participants, but men were always in the first row.
- Some women were very active in the workshop.
- Since not many people could read or write Swahili, and some people could not speak Swahili, community leaders played the role of sub-facilitator / interpreter.
- During a detailed participation analysis, one of the cards was “Hostility from other people.”
- Also during the detailed participation analysis, there was hot discussion about the problem of drinking alcohol.
- Educational approach was turned down as one of the priority projects because “The school building is there, but we refused to send our children to it”
- Childbirth was put down to “God’s wish” and was another hot issue but the villagers eventually decided to accept family planning.
- In contrast to other PCM Workshops, many people answered that they always boil their water.
- People tend to think a poor market means few buyers and do not think about the problems with their product in terms of quality, quantity and delivery. For example, the answer to the question “From which store do you buy beans if Shop A sells 1 kg of beans at Ksh 20 and Shop B at Ksh 15 and the quality of the beans is same?” did not come. The villagers thought that the prices could not be different if the quality was same.
- The Study Team decided to provide 1kg of ugali and 1kg of beans for lunch because most of the participants were casual workers and were not able to get food for the day

if they attend at the workshop.

#### 5) PCM Workshop at Kampi ya Samaki

Participants : Total: 87 (female 31, male 56) recorded  
Peak: 66 (female 23, male 43) counted  
Average age 38 years old, mode: 30's and 40's (25 people each)

Core Problem : Low standards of living of the people in Kampiya Samaki.

Priority Projects : (1) People of Kampi ya Samaki keep clean water.  
(2) People of Kampi ya Samaki have enough income.

#### Others:

- The majority of the participants were employed in tertiary industries such as business, trade and tourism. Fishermen made up the next most common occupation.
- A lot of the participants were in their 30's and 40's.
- Consistency of attendance was not very high, though the number of participants was high.
- In Participation /Stakeholder Analysis, the names of as many as 78 groups and institutions were mentioned: 28 in Kampi Turkana, 63 in Sandai / Lobo / Kapkuikui, ten in Rugus and 51 in Arabal.
- There was a hot discussion about a tourism association whether it is really community-based or not.
- Some participants including community leaders came from outside of the Study Area.
- There was a long discussion about the definition of "starvation", because "starvation" was nominated as a core problem.
- There was another hot discussion on the relationship between the number of fish and the growth of the fisherman population.
- There was an accident in which a boy was bitten by hippo in front of the workshop site, which was an abandoned fish factory. A moderator at the workshop carried the injured boy to a car.
- To save time at lunch, the Study Team provided half loaf of bread (250g) and a bottle of soda (300ml) per person.

#### 6) PCM Workshop at Sandai / Lobo / Kapkuikui

Participants : Total :50 (female 8, male 42) recorded  
Peak :31 (female 8, male 23) counted  
Average age 29 years old, mode: 20s (20 people)

Core Problem : The villagers of Sandai, Lobo and Kapkuikui face shortage of food

Priority Projects : (1) Good yields of crops.  
(2) Healthy reproductive animals.

#### Others :

- There were only a few female participants and they were not so active.
- Young participants led the workshop and some of them played the role of sub-facilitator.

- Compared with other workshop sites, the consistency of attendance was not so high.
- The education level of the participants was the highest among the PCM Workshop sites. About half of them completed secondary school.
- Since most of the participants could speak and write English, most of the cards were written in English during the Workshop.
- In Participation /Stakeholder Analysis, the names of as many as 63 groups and institutions were mentioned: 28 in Kampi Turkana, 78 in Kampi ya Samaki, ten in Rugus and 51 in Arabal.
- When the participants talked about possible projects, they seemed to think a 25 percent contribution from the villagers was almost prerequisite. On the other hand, they did not talk much about operation and maintenance.
- The Study Team provided half loaf of bread (250g) and a bottle of soda (300ml) per person at lunch, because many of them had traveled for a long distance.
- A young fellow complained that the bread and soda were not enough for lunch, and he did not come the next day.

#### 7) PCM Workshop at Rugus

- Participants : Total: 56 (female 21, male 35) recorded  
Peak: 47 (female 23, male 24) counted  
Average age 39 years old, mode: over 60s (13 people)
- Core Problem : People in Rugus cannot get enough water for drinking
- Priority Projects : (1) A separate long standing pan/dam for people and cattle.  
(2) People can get clean water to drink
- Others :
- 13 participants said they were more than 60 years old and 7 participants said they were in their 50's.
  - One of the participants said he had killed eight lions before, but had lost his left arm by the seventh lion.
  - About half of the participants were women. Some of them sat in the first row. Also the women took the soda and bread first and all the men wait for them.
  - Double interpretation was necessary from Swahili to IlChamus to Pokot.
  - Community leaders and teachers played the role of sub-facilitator / interpreter.
  - In Participation/Stakeholder Analysis, the names of only 10 stakeholders are mentioned: 28 in Kampi Turkana, 78 in Kampiya Samaki, 63 in Sandai / Lobo / Kapkuikui and 51 in Arabal.
  - It was said that a lion was last seen in Mukutani in 1995. A hyena was seen the day before the workshop.
  - There was a hot and long discussion concerning the Core Problem. An old woman played an important role in deciding the Core Problem, which was "not enough drinking water." The other candidates mentioned were problems of low income and not enough food.
  - Women needed to walk 200m in the mud to reach the lake. Many of them complained about backache.

## 8) PCM Workshop at Arabal

Participants : Total: 58 (female 8, male 50) recorded  
Peak: 50 (female 8, male 42) counted  
Average age 30 years old, mode: 20s (23 people)





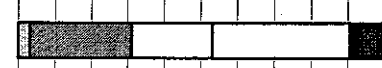
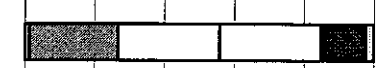

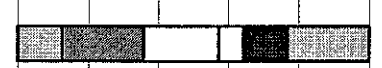
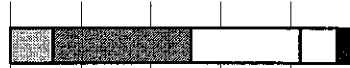
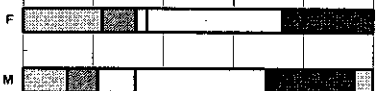








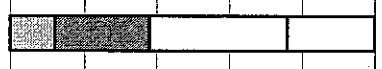


Core Problem : People of Arabal have low income.

Priority Projects : (1) Improvement of livestock production.  
(2) Reduction of diseases.





Others :

- There were only a few women and they sat in the back row, but a female teacher was very active and played the role of sub-moderator. She was the first lady who proceeded to secondary school from Arabal Primary School, and graduated from Moi Teachers College in Kabarnet this year. She said she walks to Marigat Town every week and it takes five hours one way.
- At lunch, women came to pick up the bread and soda last.
- A community leader asked where the Team had purchased the bread. (It was from a bakery in Kabarnet.) He said he had never had bread this soft.
- Five out of 43 people had latrines.
- A few people could not read or write.
- In Participation Analysis, not many groups and institutions were brought up, but six water projects were mentioned.
- There was hot discussion in deciding the Core Problem, whether it should be "low income" or "low standards of living."
- It took time to decide on the first priority project, which was to improve livestock production.
- Discussion was made on the necessity of price control for livestock.
- People said that one of the reasons for the low prices of livestock was that there is only one auction per month and that two auctions would increase the price. (The same middlemen, who are mainly from Nakuru, go around the auction sites in the area regularly. That would mean that two auctions would not appear to improve the situation.)

**Table 5.4-1 Summary of PCM Workshop Results (1/2)**

PCM Workshop Site	Kampi Turkana		Kampi ya Samaki	Sandai, Lobo and Kapkuikui		Rugus	Arabal
Location (Administrative Boundary)	(Kimalel)	Marigat	Salabani	(Eldume) (Ngambo)	Sandai Lobo Kapkuikui	Mikutani (Kiserian)	Arabal
Population (Households)	6,790 (1,235)	11,852 (2,155)	7,377 (1,341)	11,347 (2,062)	5,167 (939)	8,372 (1,522)	3,297 (600)
Area (km <sup>2</sup> )	95.9	188.2	214.1	149.8	95.2	372.1	108.7
Cluster	E	A	C	B	D	F	G
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
PCM Participants Ethnic Group	Turkana(x32)		Tugen(x58), Luo(x14), Il Chamus(x4), Turkana(x4), Others(x7)	Tugen(x50)		Il Chamus(x48), Pokot(x6), Tugen(x1), Turkana(x1)	Tugen (x58)
Attendants at peak	35 (female 23 : male 12)		66 (female 23 : male 43)	31 (female 8 : male 23)		47 (female 23 : male 24)	50 (female 8 : male 42)
Age Distribution (10's / 20's / 30's / 40's / 50's / 60's or over)							
Formal Education [Female : Male] (NA / Std.1-3 / 4-6 / 7.8 / Secondary / College-)	NA						
Major Source of Income (Officer, business / Livestock / Farming / Fishing / Others)	NA			NA			
Number of Children (0-3 / 4-6 / 7-9 / 10 or over)							
Core Problem	Villagers of Kampi Turkana do not have enough money.		low standards of living of the people in Kampi ya Samaki.	Villagers of Sandai, Lobo and Kapkuikui face shortage of food.		People in Rugus cannot get enough water for drinking.	People of Arabal have low income.
Direct Causes	<ul style="list-style-type: none"> <li>* Villagers cannot work.</li> <li>* Villagers cannot sell ballast well.</li> <li>* Villagers cannot get casual works.</li> <li>* Villagers cannot grow crops.</li> </ul>		<ul style="list-style-type: none"> <li>* Malaria, Typhoid, Cholera etc.</li> <li>* No clean water to people.</li> <li>* Not enough food.</li> <li>* People do not have enough income.</li> <li>* Population too high.</li> </ul>	<ul style="list-style-type: none"> <li>* Villagers get poor yield of food crops.</li> <li>* Villagers' animals die.</li> <li>* Villagers are not able to buy food.</li> <li>* Villagers have poor storage.</li> <li>* Villagers give birth to too many children.</li> </ul>		<ul style="list-style-type: none"> <li>* Large number of livestock.</li> <li>* There is no clean water to drink at the lake.</li> <li>* Villagers travel far to get water.</li> <li>* Villagers stuck along the lake shore to get water.</li> <li>* Dams / pans dry up quickly.</li> <li>* Villagers share dam / pan water with livestock.</li> <li>* Fetched water shared with calves at home.</li> </ul>	<ul style="list-style-type: none"> <li>* Diseases killing livestock.</li> <li>* Poor price of livestock.</li> <li>* Poor animal production.</li> <li>* Poor market of honey.</li> <li>* Diseases e.g. Malaria and Typhoid.</li> <li>* Poor crop production.</li> <li>* Unemployment.</li> </ul>
Priority Approaches	1. Villagers of Kampi Turkana can sell ballast and other products well.  (2. Skill development.)		1. People of Kampi ya Samaki keep clean water.  2. People of Kampi ya Samaki have enough income.	1. Good yields of crops. (1) 2. Healthy reproductive animals.  3. Good yields of food crops. (2)		1. Long standing pan/dam for people and cattle separately.  (2. People can get clean water to drink.)	1. Improvement of livestock production. 2. Reduction of diseases.
Results / Outputs	1-0. Organization to manage activities is established. 1-1. Villagers can get enough buyers. 1-2. Villagers can make different varieties, 1-3. Villagers can make quality ballast.		1-1. More water sources. 1-2. Treatment of available water 2-1. Fish can be sold at favorable price. 2-2. Fair production of fish. 2-3. Honey can be sold at good price.	1-1. Irrigation. 1-2. Certified seeds. 2-1. Prevention of diseases. 3-1. Good farming method / Pests and diseases control. 3-2. Crops are not damaged. 3-3. Good storage of crops.		1-1. A long standing pan / dam. 1-2. Separate pan / dam from livestock.	1-1. Healthy animals. 1-2. Good price of livestock. 1-3. High animal production.  2-1. Drinking treated water. 2-2. Less presence of houseflies. 2-3. Less number of mosquitoes. 2-4. Health services received daily.

**Table 5.4-2 Summary of PCM Workshop Results (2/2)**

PCM Workshop Site	Kampi Turkana		Kampi ya Samaki	Sandai, Lobo and Kapkuikui		Rugus	Arabal
Location (Administrative Boundary)	(Kimalel)	Marigat	Salabani	(Eldume) (Ngambo)	Sandai Lobo Kapkuikui	Mukutani (Kiserian)	Arabal
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
Activities	<p>1-0-1. Organizing committee. 1-0-2. Electing Chairman, Treasurer etc.</p> <p>1-1-1. Collecting stones. 1-1-2. Breaking stones. 1-1-3. Grading. 1-1-4. Advertisement through sign posts. 1-1-5. Looking for buyers. 1-1-6. Looking for market. 1-1-7. Sell ballast and other products. 1-1-8. Seek support from different organizations (tools) government included.</p> <p>1-2-1. To have tools for breaking. 1-2-2. To make attractive products. 1-2-3. Different kind of goods. 1-2-4. Advertise to buyers. 1-2-5. <u>Seek support from government in terms of tools.</u> 1-2-6. <u>Seek assistance from World Vision.</u> 1-2-7. <u>Seek technical support from Japan.</u> 1-2-8. Organize ourselves into groups.</p> <p>1-3-1. Travelling looking for market. 1-3-2. Modern tools for grading. 1-3-3. Use standard control from time to time grading. 1-3-4. Price of ballast as per quality. 1-3-5. <u>Seek assistance from government.</u> 1-3-6. <u>Loan from various organizations.</u> 1-3-7. Register as Jua Kali Artisans to learn technical skills.</p>	<p>1-1. Identify the water source e.g. lake. 1-2. Buying construction materials e.g. cement / sand. 1-3. Siting of the tank on high altitude. 1-4. <u>Pumping water from the lake.</u> 1-5. Provision of labor by community. 1-6. Digging pipe canals. 1-7. <u>Drilling boreholes.</u> 1-8. <u>Dam construction.</u> 1-9. <u>Water technician from government.</u> 1-10. Transport of materials. 1-11. <u>Construction of storage dams.</u> 1-12. Electing committee for water project. 1-13. Inviting water engineers to visit site. 1-14. Tank mason. 1-15. <u>Distribution of water from water tank to the residence.</u> 1-16. <u>Building water pan house.</u> 1-17. Maintenance of water supply.</p>	<p>1-1-1. Digging main canals by farmers (Harambee) 1-1-2. <u>Construct water intakes to farm.</u> 1-1-3. <u>Construct water reserves.</u> 1-1-4. <u>Draining swamps to get land for irrigation.</u> 1-1-5. Farmers maintain main canals. 1-1-6. <u>Survey the level of the ground.</u> 1-1-7. Clear the land. 1-1-8. plowing of the land. 1-1-9. Level the land to get right yield with limited water. 1-1-10. Rotational irrigation. 1-1-11. Control the expansion of farms. 1-1-12. Develop but conserve the environment. 1-1-13. Talk with the upstream water users. 1-1-14. Catchment management. 1-1-15. Canal committee to control water.</p> <p>1-2-1. <u>Transport the seed to the farmers' nearest.</u> 1-2-2. Center as a group. 1-2-3. <u>Select suitable variety seeds.</u> 1-2-4. Form farmers consumer shops. 1-2-5. Buy the seeds. 1-2-6. Plant certified seeds. 1-2-7. Raise establishment rate by seed treatment &amp; others (better land preparation) 1-2-8. <u>Employ extension officers.</u> 1-2-9. Arrange with area chief to have seminars with agricultural officers to train the farmers.</p>	<p>2-1-1. Buy drugs for animal treatment. 2-1-2. <u>Build dips.</u> 2-1-3. Quarantine. 2-1-4. <u>Train farmers on livestock treatment.</u> 2-1-5. <u>Upgrade indigenous cattle.</u> 2-1-6. Practice rotation grazing. 2-1-7. <u>Vaccination.</u> 2-1-8. Plant grass for livestock. 2-1-9. <u>Use artificial insemination (AI).</u> 2-1-10. Buy accaricides. 2-1-11. <u>Employ qualified livestock personnel.</u></p> <p>3-1-1. Proper weeding. 3-1-2. Pruning / thinning. 3-1-3. <u>Control pests &amp; diseases in the firm.</u> 3-1-4. <u>Spray chemicals on crops.</u> 3-1-5. Gapping. 3-1-6. Rotational cropping. 3-1-7. Water management committee. 3-1-8. Early planting. 3-1-9. Proper spacing. 3-1-10. Cellar canals.</p> <p>3-2-1. <u>Fence to control wild animals.</u> 3-2-2. Use scarecrow. 3-2-3. Scare wild animals at night. 3-2-4. Early buying of pesticides. 3-2-5. Spray the weeds &amp; pests.</p> <p>3-3-1. Build modern stores. 3-3-2. Prevent grains from rain. 3-3-3. Dusting weevils. 3-3-4. Treat seeds before storing using pesticides. 3-3-5. Reduce moisture content of crops by drying. 3-3-6. Poison rodents e.g.. Rats. 3-3-7. Smoke seeds to prevent from being destroyed.</p>	<p>1-1-1. Site the dam area. 1-1-2. Clear bushes. 1-1-3. <u>Dig new dams.</u> 1-1-4. Fence dam using thorn trees. 1-1-5. Remove silt from the dam. 1-1-6. <u>Dig deep dams.</u> 1-1-7. Hire watchman for the dam / pan. 1-1-8. Soil erosion control. 1-1-9. Conserve water catchment areas. 1-1-10. <u>Construct another dam.</u> 1-1-11. <u>Dig the dam deeper.</u></p> <p>1-2-1. Cut trees. 1-2-2. Dig holes for posts. 1-2-3. Put posts in the holes. 1-2-4. Make posts firm. 1-2-5. Plant cactus around the dam / pan. 1-2-6. Fence the dam using thorn trees.</p>	<p>1-1-1. Take animals to dip. 1-1-2. Look for livestock experts to identify diseases. 1-1-3. Inject sick animals. 1-1-4. Splay livestock. 1-1-5. Buy livestock drugs. 1-1-6. Clear / clean cow shed. 1-1-7. Buy accaricides.</p> <p>1-2-1. Take animals for pasture. 1-2-2. Castrate male animals. 1-2-3. Rehabilitate denuded land. 1-2-4. Take livestock for water. 1-2-5. Provide a dam for livestock use. 1-2-6. <u>Maintain individual pasture land.</u> 1-2-7. Cut nutritive trees for animal feed. 1-2-8. Separate sick animals from healthy ones. 1-2-9. Select good livestock breed.</p> <p>1-3-1. <u>Collect and analyze market information.</u> 1-3-2. Take livestock for sale. 1-3-3. Sell livestock when prices are high. 1-3-4. Publicize the market information during Chiefs' meeting.</p> <p>2-1-1. Boil water before drinking. 2-1-2. Keep dam free from animals. 2-1-3. Use a Chepututwo (chlorine like) to make water clean. 2-1-4. <u>Keep off people from bathing in water.</u> 2-1-5. <u>Have bathroom.</u> 2-1-6. Fence dam to keep off animals. 2-1-7. Deworm livestock. 2-1-8. Buy accaricides.</p> <p>2-2-1. Dig toilets. 2-2-2. Use latrines to keep off houseflies. 2-2-3. Cut tall grass around houses. 2-3-1. Dig toilets. 2-3-2. Use latrines to keep off houseflies. 2-3-3. Clear bushes near hoses. 2-3-4. Drain stagnate water. 2-3-5. Burn cowdung. 2-3-6. Buy mosquito nets. 2-3-7. Smoke rooms to keep off mosquitoes.</p> <p>2-4-1. Use local herbs. 2-4-2. Go for local medicine men. 2-4-3. Build hospital. 2-4-4. Attended by mid-wives. 2-4-5. <u>Neem trees available any time.</u> 2-4-6. Maintenance of dispensary.</p>	

Footnote: Underline means the activity needs external assistance. / People think they cannot do by themselves.