No.

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
(MOARD)

THE STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT
IN
THE BARINGO SEMI ARID LAND AREA
(MARIGAT AND MUKUTANI DIVISIONS)
IN
THE REPUBLIC OF KENYA

FINAL REPORT

MASTER PLAN

MARCH 2002

SANYU CONSULTANTS INC.

AFA
JR
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Exchange Rate as of September 2001

US Dollar	=	77.40 KShillings
US Dollar	=	118.80 JYen
KShillings	=	1.53 JYen

PREFACE

In response to the request from the Government of the Republic of Kenya, the Government of Japan decided to conduct a Master Plan Study on the Integrated Rural Development Project in the Baringo Semi Arid Land Area (Marigat and Mukutani Divisions) and entrusted the Study to the Japan International Cooperation Agency (JICA).

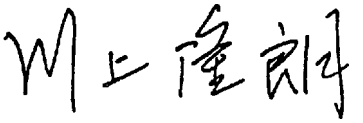
JICA sent to Kenya a study team headed by Mr. Seiji Takeuchi, Sanyu Consultants Inc., six times between August 1999 and December 2001.

The Team held discussions with the officials concerned of the Government of the Republic of Kenya, and conducted field surveys at the Study Area. After the Team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relation between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Kenya for their close cooperation extended to the Team.

March 2002



Takao Kawakami
President
Japan International Cooperation Agency

March 2002

Mr. Takao Kawakami
President,
Japan International Cooperation Agency (JICA)
Tokyo, Japan

Dear Mr. Kawakami,

Letter of Transmittal

We are pleased to submit to you the Master Plan report on the Integrated Rural Development Project in the Baringo Semi Arid Land Area (Marigat and Mukutani Divisions) in the Republic of Kenya. The Report presents the Master Plan formulated with the advices and suggestions of the authorities concerned of the Government of Japan and your Agency. Also included were comments made by the Ministry of Agriculture and Rural Development and Inter-Ministerial Steering Committee of the Republic of Kenya during the technical discussions on the draft final report which were held at Nairobi in December 2001.

This Master Plan serves as a rural development plan for the Study Area at the broad level of economic and social planning, and a plan which could be replicated in other semi-arid land areas. The Plan has coordinated plans at a sectoral level, thereby becoming an integrated rural development plan. The Plan was fit into higher-level plans for district and national development, and at the same time feed-backs from the Study were also made to the higher-level plans on the course of the Study.

The study has been carried out in a phasing manner; namely, Phase-I, Phase-II and Phase-III. The Phase-I study formulated a tentative Master Plan for the study, from which seven verification projects came up through the discussions with the Kenyan government staff, NGOs, local community peoples, etc. The Phase-II and Phase-III studies then have assumed the implementation, monitoring and evaluation of the verification projects, which have finally been disseminated to ten areas through inter-location monitoring tours. The outcome and lessons from the verification projects have been thoroughly incorporated in preparing the final Master Plan.

The overall objective of the Study is to raise the living standard of the local communities in the Marigat and Mukutani Divisions by encouraging local activities through the formulation of the Master Plan. The plan was prepared in partnership with the local communities, the national and local governments, as well as with other stakeholders. The process of participatory planning itself is therefore so vital to the Study that actually carrying out the process itself is as important an objective as the final Master Plan.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, Ministry of Agriculture, Forestry and Fisheries of the Government of Japan. We also with to express our deep gratitude to the Ministry of Agriculture and Rural Development and Inter-Ministerial Steering Committee of the Republic of Kenya for the close cooperation and assistances extended to us during our investigation and study.

Very truly yours,

Seiji Takeuchi
Team Leader of the Study Team

March 2002

Mr. E. C. Chesiyna
Director, Land Reclamation (ASAL)
Ministry of Agriculture and Rural Development
(MOARD)

Dear Mr. Chesiyna,

Acknowledgement

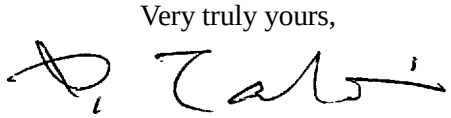
The JICA Study Team would like to acknowledge with gratitude all those people and organizations that assisted us in pursuing the Study on the Integrated Rural Development Project in the Baringo Semi Arid Land Area (Marigat and Mukutani Divisions) in the Republic of Kenya.

The GOK division and district staff gave their continuous assistances during all the stages of the field works for which the Study Team is deeply grateful. Members of the Inter-Ministerial Steering Committee and District Working Committee availed useful comments, which enriched the Study and guided the Study Team to remain focused on the study objectives.

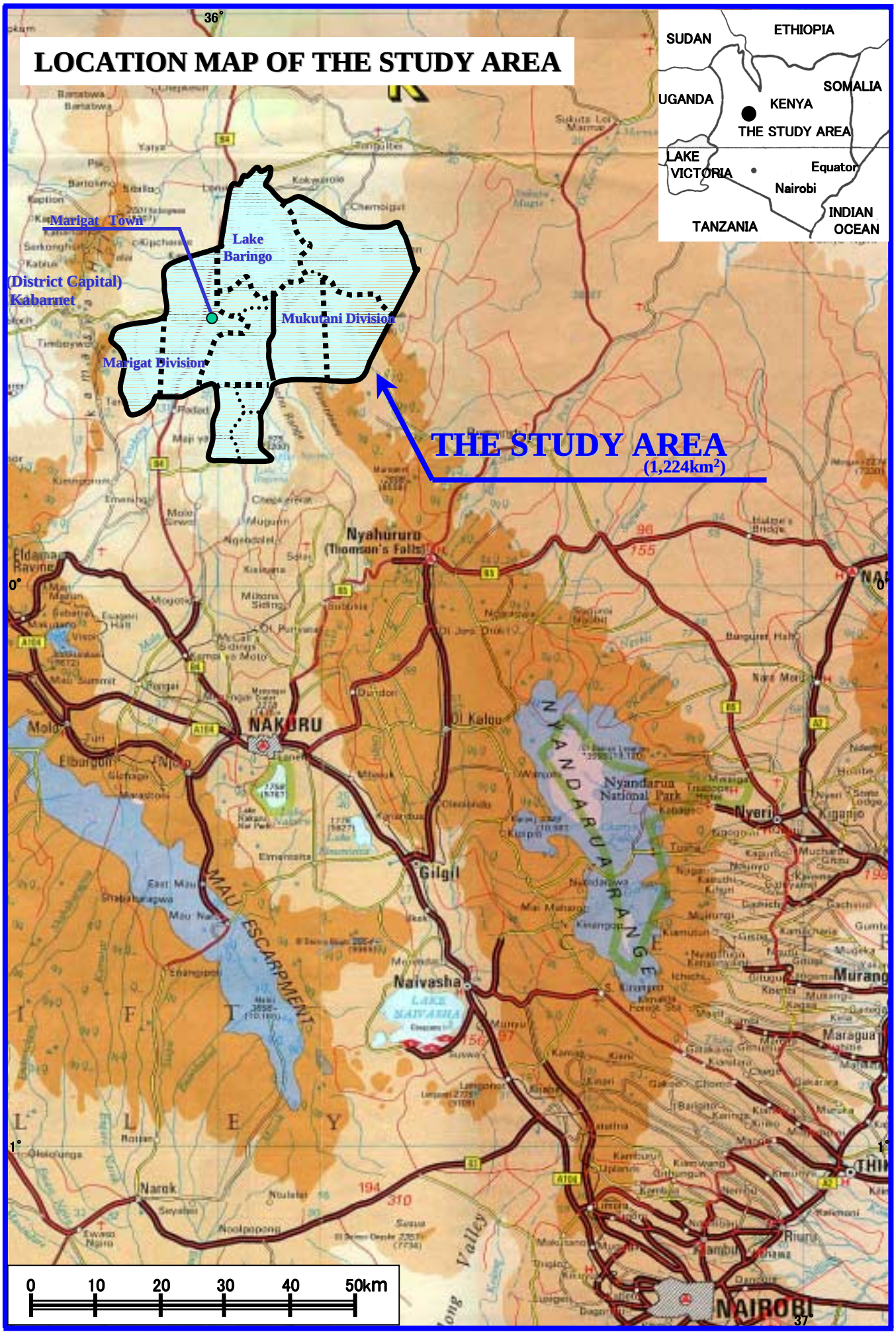
The JICA Study Team would also like to thank the community people in Marigat and Mukutani Divisions not only for playing the host to the JICA Study Team, but also for providing their time to answer questions, participate in workshops and verification projects.

Lastly, the JICA Study Team would like to express its sincerest gratitude to the Kenyan and Japanese governments for giving the Study Team an opportunity for sharing in the development of Baringo as well as other semi-arid areas of Kenya.

Very truly yours,



Seiji Takeuchi
Team Leader of the Study Team


LOCATION MAP OF THE STUDY AREA
SUDAN
ETHIOPIA
SOMALIA
UGANDA
KENYA
THE STUDY AREA
LAKE VICTORIA
Equator
Nairobi
INDIAN OCEAN
TANZANIA
Marigat Town
(District Capital)
Kabarnet
Lake Baringo
Mukutani Division
Marigat Division
THE STUDY AREA
(1,224km²)
Nyahururu (Thomson's Falls)
NAKURU
Gilgil
Naivasha
Nyandarua Range
Nyandarua National Park
Nyeri
Murang
Maragua
Mau Escarpment
Rift Valley
Narok
NAIROBI
0
10
20
30
40
50km
36°
37°
0°
1°

The Study Area：View of Lake Baringo from the Eastern Escarpment of the Rift Valley

Lake Baringo：Source of tourism, fishery and domestic water, but containing high fluoride

Rainfed maize crop：People have been gradually shifting from full pastoral to settled life

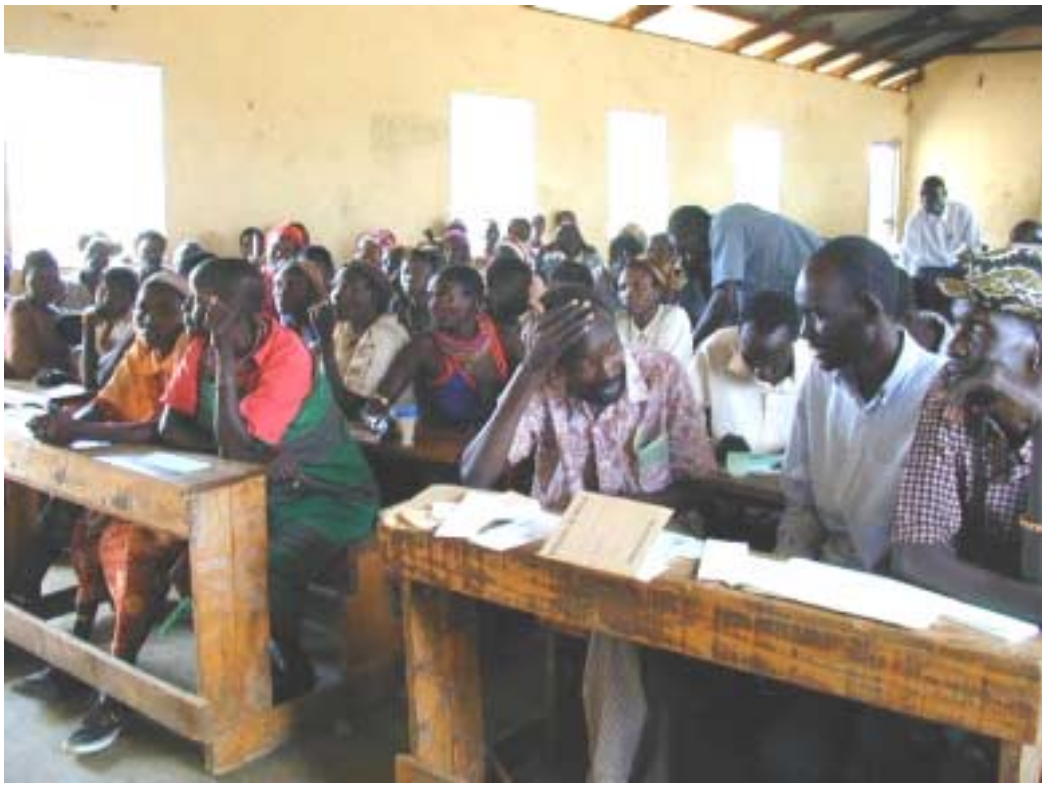
Irrigated agriculture practiced only in 1.5% of the Study Area

Livestock: Cattle are cultural value and mean of savings as well as source of milk

Auction: Not only traders but also local people join the bidding

A cow affected by the drought: About 70% of cattle in Mukutani were lost in 2000

After the drought: Lands are filled with flowers in bloom in a very short period after rain



Workshop: Series of workshops were held for the implementation of the verification projects

Inter-location Monitoring: Exchanging views on rainfed agriculture

SUMMARY

Introduction

At 1,700 m above sea level on a hilltop, Kabarnet, the capital of the Baringo District, is cool and green. Beyond the steep escarpment and 700 m below, lie the two divisions of Marigat and Mukutani in the vast expanse of the Rift Valley. The two divisions make up our project area. Much hotter and less green than Kabarnet, it is a small area of 1,244 km^2 inhabited by 54,000 people under the harsh conditions of semi-arid land. Once it was the land of a proud pastoral people who could roam around their country at will, but times have changed.

The pressure of population growth, modernisation and commercialisation, ethnic conflicts, and the resulting degradation of the environment, are factors which are forcing local inhabitants to change their way of life. Under such circumstances, what do local people want? What can they do by themselves to realise their dreams? What can the government and foreign donors do for them? This Master Plan Study attempts to answer some of those questions.

The overall objective of the Study is to raise the standard of living of the local communities in the Marigat and Mukutani Divisions by encouraging local activities through the formulation of a Master Plan. The Plan should be prepared in close partnership with the local communities and the national and local governments, as well as with other stakeholders. The process of participatory planning itself is so vital to the Study that actually carrying out the process itself is as important an objective as the final Master Plan. A special attention is given to 'capacity building of the local communities in meeting their basic needs through self-help', 'strengthening of the local government and NGOs in assisting the local communities' and 'technology transfer and exchange between the Study Team and its counterparts'.

This Master Plan serves as a rural development plan for the Study Area at the broad level of economic and social planning, and as a plan which could be replicated in other semi-arid land areas. The Plan is prepared by integrating sectoral plans to fit into higher-level plans for district and national development. The Plan is characterised by the fact that local communities actively participate in its preparation. In addition, before the Master Plan is finalised, several of the most important hypotheses of the draft plan were verified by the actual implementation of certain pilot projects called Verification Studies.

This Study was initiated by a request in October 1997 from the Government of Kenya that the Government of Japan send a study mission to formulate the Plan. The Government of Japan sent a JICA Preliminary Study mission of Japan International Cooperation Agency (JICA) in September 1998 and a Scope of Work (S/W) mission in February 1999. The Minutes of Meeting on the Scope of Work was signed in March 1999 between the two governments, and Sanyu Consultants Inc. of Japan was contracted by JICA in July 1999 to carry out the Study. Implementation of the Study commenced in August 1999 and completed in December 2001.

Challenges and Opportunities in Kenya Today

Kenya today faces a real crisis. The average growth in GDP declined from about 6.6% in the second half of the 1960s to 4.1% in the 1980s, and below 1.0% in 2000, falling far

below the current average population growth of 2.2%. The GNP per capita in 1999 stood at US$360, which ranked Kenya about 20th out of 48 sub-Saharan African countries. The physical infrastructure is dilapidated, and even tourism has declined. The commercial loan interest rate is as high as 27%, and inflation is about 7%.

Income inequality and poverty have worsened. Social indicators such as the unemployment rate are alarming. It is now estimated that about 53% of the rural population and 49% of the urban population live beneath the absolute poverty line. The highest incidence of poverty is found in the Semi-Arid Land Area (ASAL). Women are considerably more vulnerable to poverty than men. Of the active female population, 69% work as subsistence farmers compared to 43% of men.

The decline of the Kenyan economy can be attributed to many factors. The oil crises of 1973 and 1978, periodic droughts, adverse export prices of coffee and horticultural produce, combined with population increase and the devastating impact of HIV/AIDS, have all contributed to the declining economy. The World Bank, however, singles out the lack of governance as the main culprit for the slumped economy. In fact, since 1997, most members of Kenya's donor community have kept a low profile in their development assistance to the country pending reform in the direction of establishing good governance.

In Chinese, "crisis" is spelled using two characters signifying "danger" and "opportunity". Indeed, every crisis presents opportunities, and the present Kenyan crisis is no exception. The general public and local beneficiaries, who had become accustomed to the idea that government would provide everything, now realise that they themselves will have to be directly involved in planning their own future, and will have to participate in implementing any chosen course of action. If the donor contributions have dwindled, an opportunity has thereby been presented to mobilise resources from the beneficiary through cost recovery and cost sharing. It provides incentives to carry out self-help schemes, even if the scale of the development is small. The timing is ideal to carry out reform programmes, but there needs to be an awareness of how to go about such programmes effectively.

Rural Development in Kenya

The first real attempt by the Government to decentralise planning came into effect in 1974 when District Development Officers (DDOs) were appointed to coordinate district plans. During the rest of the 1970s, minor measures were taken to further the drive towards decentralisation, but it was the District Focus for Rural Development (DFRD) strategy, launched in March 1983, that pushed decentralisation into the heart of Kenya's rural development policy. Its main purpose was to allocate resources more equally amongst poorer regions, and the regions were then encouraged to submit proposals for funding. This reform meant to delegate the central government's responsibilities down to the district level, hence its name of the 'District Focus'.

Although the DFRD strategy is not the only policy responsible for the progress of Kenya's rural development, it has contributed little given the poor performance of the agricultural

sector for the last quarter century. Development funds, as shown in the National Development Plan, seldom reach the districts in their full amount, and as a result individual projects are left alone with no supportive budget. Decision-making on development project planning and implementation has not been accelerated, neither has rural-urban migration been arrested. The target beneficiaries, the poor and vulnerable, are still largely excluded from direct involvement in the process of project design and implementation. The projects are therefore seen as government rather than community projects.

The most important factor which has contributed to the lack of progress in DFRD strategy is the real or at least perceived weakness of governance in general. In 1995, Danish International Development Agency (DANIDA) withdrew from financing the Rural Development Fund on the grounds that Kenya's public sector lacked any proper governance to manage such funds. This resulted in the dissolution of the Fund and contributed to a most dramatic decline of confidence in the strategy. The lack of power on the part of the local communities, the resulting (and continued) dominance by the state in almost every aspect of development, combined with the ever-shrinking financial base, have all contributed to the current crisis concerning the DFRD.

Giving the further declining performance of the rural sector during the last decade, the Government of Kenya has embarked on the preparation of the Kenya Rural Development Strategy (KRDS), which is to cover the period from 2001 to 2016. The first draft of the KRDS came out in July 2001, and presented its vision as "sustainable and equitable rural development for all". In comparison with the DFRD of 1983, what is most notable in the draft KRDS is its stronger emphasis on empowerment of the rural beneficiaries; the need to strengthen budget execution to ensure that resources are reaching communities; combating corruption; and participation of the private sector, NGOs and community based organizations (CBOs).

KRDS argues that administrative and political decentralisation has not been enough and there is a need to improve local tax bases and to design inter-governmental fiscal transfer so that local governments can take up more fiscal responsibilities. Further, the KRDS recommends changes in the government structure so that the district officers are accountable to local-level government for the development, implementation and funding of development initiatives. To serve this purpose, it suggests that the DFRD would have to be drastically modified.

The guiding principle underlying the development of the rural sector in Kenya is going to be the KRDS, which is being finalised by the Government. As far as its July 2001 draft is concerned, it is a bold step forward, furthering political, administrative, fiscal and market decentralisation. The allocation of resources from the national level is to be made to the local authority, and the implementing officers are to be accountable to the local authority. In addition to the measures being contemplated, a people-centred, participatory approach would be at the core of all necessary measures taken to raise the level of rural people's livelihoods and thereby reduce rural poverty.

The Study Area

Surprisingly, the area around Lake Baringo was once producing surplus grain and was referred to as a granary. According to geographers in the 1800s, Arab traders, who visited the area en route from the Kenyan coast to Uganda and eastern Congo, considered the Il Chamus community as being one of the most dependable sources of grain. In this century, the Baringo basin became the scene of important pastoral migrations in search of fodder, thereby, even at that time, initiating population congestion.

In the early 1900s, European settlers established ranching areas at Nakuru and Laikipia plateau forcing the southern Tugens in Nakuru to move north into the Study Area. Since the Laikipia plateau used to be an area reserved to the Il Chamus during dry seasons, the loss of it to the European settlers was a serious blow for the Il Chamus. The Tugens who were in the Tugen Hills also started moving down into the Study Area. Newly established irrigation schemes such as Sandai and Perkerra also exacerbated the congestion. From northeast of the area came encroachment by the Pokot people and refugees have been pouring into the town of Marigat. The population has thus dramatically increased from a population density of 4.4/km^2 in 1948, the first census year, to 44/km^2 in 1999.

In addition to increases in the numbers of humans and livestock, a factor contributing to the degraded condition of the environment is the vegetation, which has been changing increasingly towards bushland, suppressing the growth of grasses, particularly perennials. The cause for this change is not only overgrazing but also a change in traditional range management, namely, the discontinuation of burning of grazing land. As the vegetation has been changing, the livestock habitat has also shifted from grazers such as cattle to browsers such as goats. The browsers can survive harsher conditions than cattle, but this, in turn, causes further depletion of vegetation when land is overgrazed. All these factors have contributed to soil erosion, land degradation and deforestation in the Study Area, and are now posing a serious threat to the environment.

In order to cope with the deteriorating environment, most people in the Study Area are struggling in their daily life. The people are composed of Tugens, Il Chamus, Turukanas and Pokots, with the first two ethnic groups being the majority. The total population in 1999 was estimated at 54,200, of which Tugens numbered about 24,000 and Il Chamus about 22,000. In the Study Area, there are 178 villages where 9,850 households in total are estimated to live. Although pastoralism once dominated the Study Area, farming activities have been gaining momentum as a supplement or as the mainstay, particularly in irrigated areas. The majority of the people in the Study Area, therefore, can be called “Agro-Pastoralists”.

The physical features in the Study Area vary a great deal depending on the location. The central and the lowest parts are formed of very flat land, called the Floor of the Rift Valley, and have relatively fertile soils, while the western and eastern sides slope gently up to the steep escarpment which defines the valley. Rainfall is scarce and also erratic, as expected in an ASAL area, ranging from 1,000 mm to as low as a meagre 270 mm per annum. The land use in the Study Area also varies. Grazing land occupies as much as 85% of the total area,

followed by a lake area (11.4%), irrigated land (1.6%), forest (1.1%), and rain-fed land (0.5%).

The grazing land rears a large number of livestock: about 52,000 cattle, 194,000 goats, and 55,000 sheep (1999 estimates). The vast majority of the livestock graze in the communal land, while there is a small number of semi-zero-grazing farms. There are no cases of zero-grazing in the Study Area. Often pastoralists have to herd their cattle very far from their homestead, roaming hilly areas where pasture still can be found under conditions of relatively high rainfall compared to the lower part of the Study Area. The practice of herding the cattle far away usually takes place during the periods of September to October and January to April, extending to, in total, as long as six months if the drought is severe.

The major crops, either in the irrigated or the rain-fed areas, are first and foremost maize, which occupies about 70% of the entire farmland, with an average yield under rain-fed conditions of a mere 1.7 ton/ha. Maize is more susceptible to drought than sorghum and millet, thus leading at times to a nil harvest in periods of severe drought. ASAL areas are used to plant sorghum and millet; however, maize was brought in during the colonial period and has been spreading over the country without much consideration being given to the climatic conditions. Food self-sufficiency in the Study Area is very low even in a normal year; for example, cereal self-sufficiency in 1999 was only 43%.

Very severe drought tends to occur every 10 to 15 years and minor drought about every three to four years. Large number of cattle died of drought in 1984, the severest drought in decades. Also, noticeable is the fact that recent drought tends to stay over a couple of years as in 1992, 1993, and 1994. The area was stricken by yet another drought in 1999 to 2000, during which time villagers in the Rugus and Upper Mukutani sub-locations lost over 70% of their cattle. Under such circumstances, the local residents depend on the food relief and also practice such survival strategies as selling livestock, and eating grasses and even dead cattle.

Medical services are provided in such institutions as three health centres, one being Marigat Health Centre, eight dispensaries, and seven Bamako Initiative Stations. There are 41 primary schools (attendance is compulsory) and four high schools in the Study Area. The 41 primary schools provide 341 classes in total which accommodate 11,800 students; at present about 8,200 students attend. The 4 high schools have, as of 1999, 408 male and 279 female students, giving a total of 687 students. Public roads have been constructed by the Ministry of Roads and Public Works, and the national highway running from Nakuru and the roads near Marigat town are tarmac. Other roads, however, are only graveled or dirt tracks, and often unusable during the rainy season.

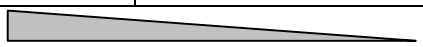
Development constraints are the shortage of water, overgrazing and poor breeding stock management, low agricultural productivity, poor market conditions, unhygienic living conditions and disease, a low level of education, and the aid dependency syndrome. The local people always try to increase their herds just as we try to increase our savings in the bank. This, however, results in severe overgrazing. An average yield for maize is just 1.7 ton/ha, and this sometimes disappears altogether when drought strikes. The people are very often

dependent on food relief, which often invites the dependency syndrome. Diseases found in the Study Area are malaria, dysentery, and typhoid. The primary school enrolment rate is only 46%. The 1989 census gives a very low literacy figure for the Baringo District, a mere 37%.

Development potential is seen in the abundant stocks of acacia (suitable for bee-keeping), livestock, fertile soil (agriculture), the wildlife of Lake Baringo (tourism), and the solidarity among villagers. There are abundant acacias in and around the Study Area, which provide high-quality nectar. Goats rate highly in terms of breeding potential and can be raised with low investment costs even under the harshest climatic conditions. About 35% of the Study Area is associated with alluvial deposits which are moderately fertile. Lake Baringo attracts as many as 30,000 tourists a year, thanks to the wildlife. There still exits inter-dependence and mutual aid among the community members, which had been necessitated by the harsh living conditions.

The Study Area can be classified into 7 clusters of 'locations' as follows taking into account the ethnicity, topography and other specific characteristics. These clusters were used for site selection of participatory planning approaches and the formulation of an area-focused development master plan.

Clustering of the Study Area (from 11 locations to 7 clusters)

Location	Kimalel	Marigat	Salabani	Eldume Ngambo	Sandai Loboi kapkuikui	Mukutani Kiserian	Arabal
Cluster	E	A	C	B	D	F	G
Ethnicity	Tugen	Tugen (Il Chamus)	Il Chamus (Tugen)	Il Chamus (Tugen)	Tugen	Il Chamus	Tugen
Land Use	LM-5	IL-6			LM-5	IL-6	LM-5
Topography							
Character	Hilly	Cosmopolitan, Commercial		Swamp, Crop field		Traditional	Livestock

Note: LM-5 Lower Midland Livestock-Millet Zone, IL-6 Inner Lowland Ranching Zone

Present Resource Assessment and the Prospects

The Study Area currently supports a human population of 54,200 and 68,545 livestock units, which consist of 34,185 LU of cattle, and 34,360 LU of sheep and goats. The current population growth rate is about 5.5% and livestock is on a rising trend as well. The irrigated area, at present 1,904 ha, would be expanded as the population increases. Should the population and the livestock increase at the same rate as at present, and should the irrigated area be expanded to the maximum that the availability of river water permits, the impact on the Study Area would be as follows:

Resource Assessment with Projection of Population and Population-related Indicator

Year	2000	2005	2010	2020	Remarks
Population	54,202	71,412	94,132	163,323	
Livestock (LU)	68,545	87,175	100,700	116,195	
Irrigated Area (ha)	1,904	2,311	2,845	4,447	
Water use (MCM)	22.8	33.5	47.5	88.9	
Cereal Self-sufficiency (%)	43	48	52	56	
Forage Self-sufficiency (%)	76	60	52	45	
Fuelwood Self-sufficiency (%)	98	75	57	33	
Water depth of L. Baringo (m)	8.5	7.3	6.5	4.6	**At the deepest point**

The projection above shows that population would be three times the present by the year 2020, and the number of livestock would increase by 1.7 times. Due to the population increase, fuel-wood consumption would drastically increase and so would water use. Hence resources would become highly deficient within the Study Area, except for food. The assumed expansion of irrigated land would raise self-sufficiency in cereals to 56% against the present 43%. However, in turn, the water depth of Lake Baringo would go down from the current 8.5 m at the deepest point to 4.6 m in the year 2020 due to water abstraction. These expected outcomes dictate a development policy based on no further resource exploitation; rather, there is a need for resource management.

Participatory Planning Approach

This Study has conducted three types of participatory approach apart from the conventional survey tools: namely, 1) Rapid Rural Appraisal (RRA) to work "for the people," 2) Project Cycle Management (PCM) to plan projects "with the people", and 3) Participatory Rural Appraisal (PRA) for development "by the people". However, since the purpose of the Phase I Study was to formulate a provisional master plan and the first field study was limited to three months, the Study Team did not introduce the advanced form of PRA "by the people", which is also called Participatory Learning and Action (PLA). Instead, the PRA and PCM methods "with the people" were followed, in which the Study Team, the people, the Government representatives and other stakeholders were partners.

PRA was carried out in seven villages representing each of the seven clusters mentioned above. 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. The last two communities were selected because the Study Team was aware of the possibility that marginalised communities and minorities might not be included in the seven villages. After analysing the results of PRA workshops, RRA and conventional surveys, the Study Team selected five PCM workshop sites to represent the Study Area.

PRA identified that concerns related to water, such as "insufficient drinking water" and "lack of irrigation water", were the most common problems, and "disease" was also chosen as a priority problem by all the seven villages. "Shortage of food" and "low income" were mentioned in four villages. Concerning priority projects, again most villages upheld solving

"water problems". Other projects were to "upgrade the primary school", which was the second choice at Kapkole village (Kimalel), "completion of the dispensary" chosen as the second choice at Ntepes village (Eldume), and "improvement of the road network" at Noosukuro village (Mukutani).

As to RRA, only major topics were identified beforehand and interviews were done in a non-structured way. The areas were: 1) occupations, major sources of income, the seasonal calendar; 2) family structure, education, family history; 3) type of house, assets; 4) drinking water, diet, cooking; 5) health and sanitation; and 6) daily life and expenditure. Some of the findings were that: 1) more people moved in from outside in the Marigat, Salabani and Loboi locations, 2) the number of cattle owned by each household was higher in Mukutani location, 3) almost all people used firewood for cooking, and 4) people needed to go far from home to fetch firewood, especially in Salabani location, and wood was becoming scarcer and scarcer.

The core problems identified during the PCM workshops were "not enough money" or "low income" in Kampi Turkana and Arabal, "low standards of living" in Kampi ya Samaki, "shortages of food" in Sandai / Loboi / Kapkuikui, and "not enough water for drinking" in Rugus. The direct causes were identified as "jobs" in Kampi Turkana, "water" in Rugus and "livestock" in Arabal, but covered a wider range of subjects in Kampi ya Samaki and Sandai / Loboi / Kapkuikui. Population growth and family planning were hot issues in Kampi Turukana, Kampi ya Samaki and Sandai / Loboi / Kapkuikui. Health services including veterinary services for livestock were discussed intensively at all the sites apart from Rugus.

Noted during the workshops was people's very high expectation for some input from outside. Therefore, outsiders need to be careful not to raise the local people's expectations too high, and to facilitate and moderate in order to find ways to solve development problems with minimal input from the outside. The outcomes from the workshops suggest, on the whole, that each cluster is at a "different development stage" of a "different development process". Therefore, this Study should not consider the whole study area as one model, but consider that each cluster is a part of a unique development process. This means that some components of projects would be common throughout the Study Area, but others must be specific to the development stage and the process.

Planning and Implementation Disciplines

The Master Plan formulated in this Study centres, as the overall goal, on improving the living standard of the target beneficiaries in the Baringo Semi-Arid Land Area (Marigat and Mukutani Divisions). As the beneficiaries stand amid different local conditions, which are, especially in the ASAL areas, complex, diverse and risk-prone, improvement of the standard of living should be described in various ways. Pivotal to realizing the overall goals of this Study is, therefore, decentralised process, diversity and choice for local fit and adaptability.

It is usually difficult to draw up a precise blueprint for a community project at an early stage, so continuous refining of the original plan is necessary in order to finalise it. The

monitoring and evaluation cycle needs to be shorter as well while a continuous refining process helps in the decision-making and cost sharing processes. As compared with conventional construction projects, objectively verifiable indicators are hard to define for community projects. Consequently, participatory monitoring and evaluation not relying so much on objectively verifiable quantitative indicators is more important for community projects.

In participatory projects, planning, implementation, monitoring and evaluation are a continuous learning process rather than static phases of a project cycle. That means there are no essential differences between monitoring, evaluation, and even project re-designing. Thus, it is always necessary to check the milestones, such as schedules and outputs, but more important ideas in the participatory approach are: "What were good for the participants?" "What kind of difficulties did they encounter?" "What are the countermeasures for those difficulties?" and "What lessons did they learn?" These subjects need to be discussed freely in the workshops and the question "for whom," i.e. how do projects affect such people as community leaders, community members, government officers or consultants, must be clarified too.

There are different levels of public (villagers) involvement usually categorized in 5 steps. From level 1 to level 4, it is the public who are involved by the administration, but at level 5 it is the administration that participates in the public. Although the level 5 is ideal for community-based projects, it is usually difficult to start that kind of projects at this level. The level 5, however, should definitely be attained from the view point of sustainability by the time the project will have completed, and at that time the role of the administration turns out to be a supporter to the public. The practical way to achieve the level 5 is probably to strengthen the existing institutions and to build capacity in them.

Workshops, often called participatory workshops, do not necessarily mean a venue for decision-making. Even if the participants plan a project and formulate a plan of operation, still they may tend to feel that it is a sort of seminar in which they are given a new idea and study it rather than preparing for the real commitment needed to commence a project. Planners and GOK staff should not count any workshop as the venue for their decision-making unless the project is very small, like rain-harvesting which can be implemented by just a small group of farmers. Plans made in a workshop have to be delivered down to all the villagers concerned and GOK/donors should wait until a decision based on their consensus has come up.

In most organisation-building, there are three important decentralised parts: namely, 1) planning and recommendations, 2) decision-making for the plan recommended, and 3) day-to-day execution according to the decision made. If an organisation is relatively large and has to handle certain cash, this kind of institutional setting-up as well as demarcation of responsibilities have to be clearly established, so that the concentration of power can be avoided and the decision-making process can become more democratic and transparent.

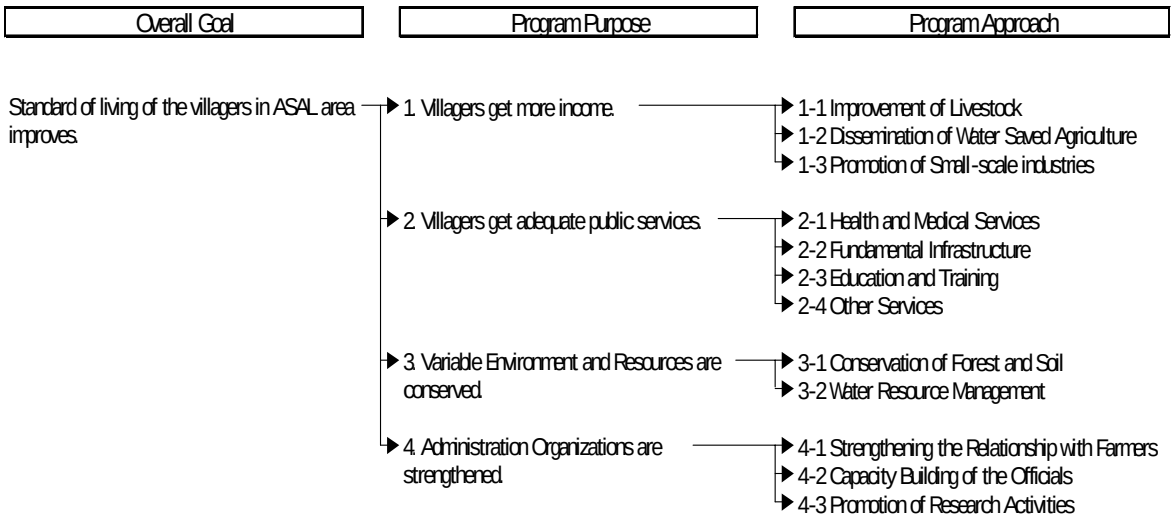
The Master Plan

The bottom-up participatory approach helps identify what the local communities really want and gives them a sense of ownership of the plans developed. However, the interests and

development projects identified through this process are often necessarily localised and narrow in scope. In order to gain a clear overview of the project area and to take into account the carrying capacity of the environment, overall resource availability and balance with other alternative plans, certain top-down approaches also need to be adopted. The bottom-up approach centres on the outcomes from various workshops carried out throughout this Study, while the top-down approach is based on conventional sector-wise development planning.

This Study advocates the importance of sharing knowledge with the stakeholders as well as natural resource management. To respond to these special concerns, the Study Team fully used RRA, PRA and PCM workshops, which made sure that the local communities, Government officers, and the Study Team worked closely to share knowledge. The Study Team also paid special attention to natural resource management and concluded that this Master Plan should not include any further resource exploitation but should be based on better resource management.

A development framework should be prepared as the first step in formulating the Master Plan. The framework presented here is composed of a development goal, programme objectives, and a relevant programme approaches. Not only conventional surveys but also all outcomes from PCM workshops and PRA workshops, as well as discussions with government staff, not only at central but also at district and divisional levels, have contributed to preparing the development framework shown below, the overall goal of which is: "the standard of living of the villagers in the ASAL area improves" together with the four programme objectives below:



In this Master Plan, the first five years are considered the short term, the next five years the medium term and the following 10 years the long term. Projects which require urgent attention are included in the short-term phase as long as they do not pose any serious threat to the environment. Most of the projects identified in the workshops fall into this category. For the subsequent periods, those projects included should be reviewed further taking into account

the results in the previous phases.

The Master Plan is firstly presented sector by sector, giving an overview of "Sector Development". This sector development could also be referred to in preparing the development of other ASAL areas. After the development plan is made sector by sector, an area-focused development plan is presented. It is necessary to consider a different process at least for each cluster, leading to area-focused development. Also considered in formulating the area-focused development plan is a balanced development over the Study Area and development priorities among the sectors. The following table shows the future development vision for each cluster together with a short description of their priority programmes/projects which fall in the first five years of the development term:

Area Focused Development Master Plan

Cluster	Development Vision	Priority Project/Program
Cluster E (Kimalel Location)	Promote rain-fed agriculture together with soil conservation. Develop further as a home of Koriema goats which are famous nationwide.	Promotion of small-scale industry (jar honey, and marketing of skins and hides) Rainfed agriculture and environmental conservation such as rehabilitation of denuded and eroded land. Supply of drinking water.
Cluster A (Marigat Location)	Develop as a regional centre of administration, education, health, commerce and small-scale industry	Strengthening of the facilities for the regional centre such as Marigat Health Centre, Marigat Youth Polytechnic and Kenyan Agricultural Research Institute (KARI), and Regional Research Centre Electricity service expansion.
Cluster C (Salabani Location)	Develop as a tourist town beside Lake Baringo with diversified culture.	Promotion of improved Jiko and small-scale industry (jar honey, fried fish, handicrafts and tourism). Rehabilitation of denuded and eroded land. Supply of drinking water. Expansion of electricity service.
Cluster B (Eldume/Ngambo)	Promote improved Jiko and rehabilitate eroded lands. Stabilise livelihood by means of irrigated agriculture and livestock improvement	Pasture development with tree planting. Promotion of small-scale industry (handicraft) and improved Jiko. Rehabilitation of denuded and eroded land. Installation of a public telephone at the centre of each location.
Cluster D (Sandai/Loboi/Kapkui kui)	Develop as an advanced agricultural area of communal irrigation.	Communal irrigation water management together with land registration. Promotion of modernised livestock feeding. Installation of a public telephone at the centre of each location.
Cluster F (Kiserian/Mukutani)	Provide safe water, thereby fulfilling BHNs. Harmonise traditional pastoral life and modernisation.	Rehabilitation of pan dams (domestic water supply). Support to pre-primary schools. Improvement of rainwater harvesting.
Cluster G (Arabal Location)	Stabilise food production by means of rainfed agriculture promotion and livestock improvement.	Improvement of livestock and improvement of rainfed agriculture. Promotion of small-scale industry (jar honey) Support to pre-primary schools. Rehabilitation of denuded and eroded land. Road improvement.
Area wise support	Strengthening of community organisations such as irrigation association, buck group, rain-fed agriculture group; learning from best practice; capacity building of government staff including PRA and PCM training; and inter-location monitoring.	

Some projects presented in the Master Plan have already been implemented as Verification Projects. The Verification Projects were intended to examine certain hypotheses of development strategies/approaches, technologies and implementation arrangement. Through the actual implementation of these projects, these hypotheses had, been evaluated and conclusions drawn on as to the rightness of certain aspects and definitions, which are considered to be more practical, more effective and more sustainable in the development of the Baringo Semi-Arid Land Area. This allowed valuable lessons to be learnt.

Through the Verification Projects, those projects which had performed very well were improved Jiko, rainwater harvesting and buck (breeding goat) scheme. It can be recommended that these projects extend widely over the ASAL areas. On the other hand, improvements in dipping systems, rehabilitation of pan (small-scale reservoir) and participatory irrigation management (PIM) have been evaluated as not being so sustainable. In the case of dipping, in the ASAL area, where people take cattle far away from their base during the dry season, the number of cattle decreases to a level so low as to make it difficult to purchase accariside. The rehabilitation of pan, for similar reasons, requires periodical assistance from outside to sustainably maintain the pan. As for the PIM in Sandai, though the project was successful in terms of efficiency and effectiveness, a dependency syndrome in the people was strongly observed.

The final Master Plan, short-term development of which is presented in the table above, was formulated with the feedback from the above evaluations and the "how" and the limits of implementation were learned through the Verification Projects, which would give useful information for applicability and further extension to other ASAL areas. Major lessons from the Verification Projects are as follows:

- Improved Jiko: Though normal conditions ensure the sustainability of the Jiko, an area of water scarcity would have difficulty in maintaining it. As the full-sized Jiko requires a kitchen house separate from the living house, a small Jiko with two fireplaces should be promoted for poor people.
- Rainwater Harvesting: As the rainwater harvesting system becomes bigger, there will be more disparity between the upper part and the lower part of the farm in allocation of water collected from the catchment area. As the farmers around the project site have copied the rainwater harvesting technique by themselves, the technique should be extended with a small group (around 5 members) or on an individual basis.
- Livestock Improvement (Buck Scheme): The programme may tend to be on an individual basis. Therefore, a group-based scheme may be preferable as a pilot and also for poor people who cannot afford to buy the buck individually.
- Small-scale Industry: For the development of income-generating activities in ASAL areas, diversification – bee-keeping, handicrafts, and fishing etc. – is necessary to stabilise a certain level of income, considering the unreliability of resources over the years.
- Rural Water Supply: In the area, people do not put aside cash at any time, but save their property in the form of livestock. Therefore the operation and maintenance cost borne by the community should not be charged through a small amount whenever they

fetch water from the taps, but just once or twice per year perhaps at the price of a goat.

- Marigat Youth Polytechnic: Like many other polytechnics in the region, it is difficult to achieve the sustainability of the polytechnic through training fee income only. Some form of sponsorship, fund-raising, subsidisation and income-generation activities is necessary to achieve financial sustainability. As an example, students' selling their own products from a carpentry course is a good means of stabilising the financial conditions.
- Marigat Health Centre (MHC): Collaboration with the Ministry of Environment and Natural Resources will be needed for both effective health promotion and water resource development. Also, in order to realize the financial sustainability of MHC, administrative reform in order to give it discretion over medical bills and, fees for inspection of restaurants will be needed.

Implementation Arrangements

In implementing the programmes/projects presented in the Master Plan, the GOK should organise a project implementation unit to undertake the responsibility for front-line activities and day-to-day management in the course of the implementation. The project management unit is headed by the district programme officer and composed of relevant divisional officers from the Ministries of Agriculture and Rural Development, Environment and Natural Resources, Roads and Public Works, Health, etc.

In line with the implementation of the project presented in the Master Plan, the Project Management Unit should hold monitoring and evaluation meetings preferably every two weeks. These meetings should call, aside from the divisional technical officers, the location chief, assistant chief, board members of relevant villagers' organisations, and also district officers. The officers in the relevant central ministries should also attend the meeting preferably every three months at least. The issues discussed during the meeting should be conveyed down to all the relevant villagers and also up to the central ministries at an early date.

The process from entry to dissemination is: 1) identifying communities for entry programmes and those for implementation, 2) dissemination of implemented programmes through an inter-location visiting tour called Inter-location Monitoring, 3) taking up programmes/projects from a basket of choices with reference to the people's needs and also to the development policy of the GOK/donors, and then 4) Inter-Location Monitoring for these, once again from the basket. This process would improve the people's living conditions gradually but in a wider area rather than radically but in a relatively confined area.

The entry programmes should be small in scale and should be well adapted in the project area. The projects are already suggested through the verification projects and are placed in the short-term development period (the first five years). The entry programmes are summarised as follows together with the places where they are to be undertaken:

Entry Programmes and Venue

Program	First Priority Area	Second Priority Area
Introduction of Improved Buck	Arabal, Kimarel	Mukutani
Rainfed Agriculture promotion together with Soil Conservation	Arabal, Kimarel	Mukutani
Improved Jiko promotion together with Primary Health Care	Marigat, Salabani	Eldume, Ngambo
Pan Rehabilitation with Sanitation improvement	Sandai, Mukutani	Arabal

Conclusion

There has been no real consensus as to what community participation is and how to carry out such an approach, and this has perpetuated a top-down approach from the state on the one hand and, on the other, the dependence of the community on the state. In this respect, this Study offered an excellent chance to try out various hypotheses on participation methodology throughout the two and half years study period. For this reason, the Study's participatory and verification process was in fact its own main objective, and the resulting Master Plan is in practical terms a by-product of this process.

The lack of governance has been the major cause of Kenya's declining economy during the last quarter century. True decentralisation, particularly fiscal decentralisation, has turned out to be really true through the Verification Projects. All the officers concerned (DC, DDO, DPO, District Officers, Divisional Officers, Chiefs and Sub-Chiefs) were appointed by the President, or by a President-appointed DC. Under the severe budget crisis and resulting retrenchment, more than ever, the minds of those administration staff were on their own survival, and at divisional level they cannot carry out their extension activities despite their high capability.

As to local communities, they were inclined to list what they wanted donors/GOK to do for them at an early stage of this Study. With the existence of powerful outsiders like donors and GOK, it is difficult to avoid the dependency syndrome coming up from the communities. However, the communities' own future vision should somewhat resemble a master plan envisaged by themselves. If they assign a priority to a project, they should be confident they can implement it primarily on their own initiative and in partnership with external partners. The Verification Projects are perhaps the first time the local community has been requested, even where a donor exists, to take the responsibility for determining their future.

Faced with the reality of non-existent fiscal decentralisation in the present administrative system, the local communities and the Study Team attempted to devise development projects which would minimise any outside financial resources but instead make them rely on their own available resources. What was tried throughout the Verification Projects was that ownership should belong entirely to the communities and outsiders should be merely subsidy providers. This approach is very different from conventional projects in which donors/GOK are mainly responsible for the implementation of projects in which the communities then participate. In this regard, communities should try to overcome their own constraints primarily by their own resources and initiatives so that the project has a good chance of becoming sustainable and being placed in the process of the community's own development.

All the stakeholders for this Study, especially participants in the Verification Projects, have learnt a great deal. Participants in the study tours and inter-location monitoring tours have also learnt a lot of lessons. Some suggested that they should start, literally, from what they can chew: "When we eat ugali, we first pick up some, make a ball, push the top to make it like a spoon, and scoop soup with it, and then eat. If the ball is too big we cannot swallow it. So we make a ball of a size that we can chew. Likewise, we can start with self-financing and later, if needed, ask for subsidy," one participant in a workshop remarked.

This Study concludes that a people-centred participatory approach, tried out through the Verification Projects and fed back in the Master Plan, could be at the core of remedial measures aimed at improving rural living standards and thereby reducing rural poverty in the Study Area. Therefore, the Government of Kenya should embark, either with assistance from a donor country or at its own expense, on implementing the integrated rural development plan for the Marigat and Mukutani Divisions as presented in this Report, and extend similar programme to other ASAL areas.

Recommendations

For rural development, both top-down and bottom-up approaches are needed. However, in present-day Kenya, the gap between the two direction arrows is huge. The two directions must meet or mesh. The District Focus for Rural Development and also the draft Kenya Rural Development Strategy suggest district to be such a level. However, there is still a huge gap between the district government in Kabarnet and the local communities in Marigat and Mukutani and it is unlikely that the district office can efficiently coordinate grass-root-level development. This Study, therefore, recommends that this take place further down, at the divisional level.

The most important thrust for administrative reform ought to be the implementation of true decentralisation in the political, fiscal, administrative and market sense. Very little of this currently exists in Kenya. Increasing transparency and accountability and rooting out corruption are urgent issues. Perhaps the most important and urgent aspect of the decentralisation at the Baringo level is fiscal decentralisation for sustaining whatever local initiatives are undertaken by the community. The Government should give more resource-raising and spending authority to the community and at least to the district if not to the divisional level rather than keeping it at the national level.

The starting point of the reform is awareness-building and the best way to go about this is to learn from best practice elsewhere with a similar semi-arid environment. There are indeed many such examples within Kenya, and a series of in-country study tours should be organised, which attendants are, to start with, the national, district, divisional and locational officers and community leaders concerned, followed separately by various specific groups, such as rain-fed farmers, irrigated farmers, women's groups, pastoral groups, etc.

As the beneficiaries have to deal with different local conditions, which are, especially in the ASAL area, complex, diverse and risk-prone, implementation of the development

plan presented in this Report should be flexible. A conventional approach, tried regardless of such diverse conditions, but featuring centralisation, standardisation and simplification, has many times failed to serve the rural population in the ASAL areas. Not presenting a standardised package, the development should be open at all times to any choices and be ready to undergo any modification.

A huge gap may be seen between rural society and modern society without a well-established intermediary system. The huge gap which bipolarises the entire country cannot be underestimated in planning any community-based project. The more materials are brought to the community in the rural society, from the outside modern society, the less sustainable the project becomes. Planners/GOK should be well aware of that kind of huge gap or lack of intermediate technique, or otherwise an idea which sounds good may not function well on the ground. The input from the outside community should be small and made available step by step.

In a rural area like Baringo, livestock has a much greater role to play than money-stock in terms of savings as the livestock is literally equivalent to a savings account in a modern society. Cash flow and its availability are therefore so limited in rural societies that the financial sustainability of a project could finally be affected. Consideration should be given to a mobile banking system with postal savings accounts that would contribute to increasing money circulation in the rural areas. Conversion of livestock to cash also contributes to environmental conservation.

Having been faced with a financial crisis, the GOK has difficulties in providing financial support or sufficient public services to the rural communities in the Study Area and over the Country by and large. It is now directed that the communities should basically go with their capacity and resources and emphasised that, wherever possible, an income-generating activity should be built into their projects as a component to financially sustain their activities from then on.

In undertaking a community-based project, the GOK/donors shall not, as long as the community within their jurisdiction can manage on its own, come in but stand back in order to assist it from the technical point of view and as a subsidy provider. The communities have the resources, such as local materials and labour, which they can and should mobilise. By definition, the cost-sharing between the community and the GOK/donor advocated in this Study applies only to foreign materials such as cement, reinforcing bars, pipes etc. including transportation, that are outside the control of the community.

In line with the cost-sharing policy above, the communities are required to provide not only local materials, labour, etc. but also a certain amount of cash for purchasing the foreign materials, say 10 to 30% of the cost. The cash, however, could be diverted toward investing in the community's future or in the future of the rural development sector on condition that GOK/donors agree to bear all necessary costs incurred. The investment, recommended here, should be made in an O & M fund, a trust fund called Children's Education Fund, or otherwise a revolving fund called Rural Development Fund.

Setting-up of a community-based organization should be carried out in line with the project implementation. Project implementation can be started as early as right after potential leaders have been identified who will be in charge of relevant project activities. In this case, the potential leaders would have to collect the villagers' cash due, mobilize labours, and arrange local materials such as river sand through which they are tested and trained on the job, thereby becoming a real leader. Official election of the committee members and registration to the Department of Social Services shall take place after going through the testing process.

Many pilot projects have so far hardly achieved their role; that is, extension of the project to other areas. This Study strongly recommends that a scheme should be devised in order to disseminate a project to other areas even if the project is so designed that could in fact be easily copied by neighbours. In this respect, inter-location monitoring tours should always be arranged when implementing a community-based project; this will so motivate the sets of participants that each side will be willing to try the other's activities.

Composition of Reports

Master Plan
Verification Study
Annex
- Master Plan
- Verification Study
- Water Source Survey for Domestic Water Supply

Manual

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ABBREVIATIONS AND GLOSSARIES

1. Related Agencies

ADB	:	African Development Bank
CBOs	:	Community-Based Organizations
CCF	:	Christian Children's Fund
CETRAD	:	Center for Reseach in ASAL Development
CIDA	:	Canadian International Development Agency
CORPS	:	Community Organizers Consultants
DANIDA	:	Danish International Development Agency
DFID	:	Department of International Development (UK)
Div.FRD	:	Divisional Focus for Rural Development
Div.WC	:	Divisional Working Committee
DLR	:	Department of Land Reclamation
DRD	:	Department of Rural Development, MOARD
DSS	:	Department of Social Services
EU	:	European Union
FAO	:	Food and Agricultural Organization of the United Nations
GOK	:	Government of Kenya
GTZ	:	Deutsche Gesellschaft fur Technische Zusammenarbelt (German Agency for Technical Cooperation)
IFAD	:	International Fund for Agricultural Development
IMF	:	International Monetary Fund
IMSC	:	Inter-Ministerial Steering Committee
JBIC	:	Japan Bank for International Cooperation
JICA	:	Japan International Cooperation Agency
KARI	:	Kenya Agricultural Research Institute
KEFRI	:	Kenya Forestry Research Institute
KITI	:	Kenya Industrial Training Institute
KPLC	:	Kenya Power and Lighting Company
LDC	:	Location Development Committee
MOARD	:	Ministry of Agriculture and Rural Development
MOEST	:	Ministry of Education, Science and Technology
MORPW	:	Ministry of Roads and Public Works
MOWR	:	Ministry of Water Resources
NGOs	:	Non Governmental Organizations
NIB	:	National Irrigation Board
RRC	:	Regional Research Center
SIDA	:	Swedish International Development Agency
TAC	:	Transect Area Committees

UK	:	United Kingdom
UNDP	:	United Nations Development Programme
USAID	:	United States Agency for International Development
WB	:	World Bank
WUA	:	Water User's Association
WVK	:	World Vision of Kenya

2. Glossaries

ASAL	:	Arid and Semi Arid Land
BOD	:	Board of Director
BSAAP	:	Baringo Semi Arid Area Project
DC	:	District Commissioner
DDO	:	District Development Officer
DFRD	:	District Focus for Rural Development
DPO	:	District Programme Officer
FAL	:	Functional Adult Literacy
GDP	:	Gross Domestic Product
GNP	:	Gross National Product
HIPC	:	Heavily Indebted Poor Countries
I-PRSP	:	Interim Poverty Reduction Strategy Paper
IRDP	:	Integrated Rural Development Programme
KRDS	:	Kenya Rural Development Strategy
KTBH	:	Kenya Top Bar Hive
MTEF	:	Medium Term Expenditure Framework
MYP	:	Marigat Youth Polytecnic
NFE	:	Non-Formal Education
PCM	:	Project Cycle Management
PDM	:	Project Design Matrix
PHC	:	Primary Health Care
PIM	:	Participatory Irrigation Management
PIS	:	Perkerra Irrigation Scheme
PLA	:	Participatory Learning and Action
PRA	:	Participatory Rural Approach
PRSP	:	Poverty Reduction Strategy Papers
RAE	:	Rehabilitation of Arid Environment
RRA	:	Rapid Rural Appraisal
SAP	:	Structural Adjustment Programme
SARDEP	:	Semi-Arid Rural Development Programme
SDDP	:	Samburu District Development Project
SOFEM	:	Social Forestry Extension Model Project
S/W	:	Scope of Work
TBA	:	Traditional Birth Attendant

3. Unit of Measurements

mm	:	millimeter
cm	:	centimeter
m	:	meter
km	:	kilometer
sq.m	:	square meter
sq.km	:	square kilometer
ha	:	hectare
l, lit	:	liter
cu.m	:	cubic meter
MCM	:	million cubic meter
cu.m/day	:	cubic meter per day
lit/sec	:	liter per second
cu.m/sec	:	cubic meter per second
ppm	:	parts per million
pH	:	potential of hydrogen
EC	:	electric conductivity
g	:	gram
kg	:	kilogram
t, ton	:	metric ton
sec.	:	second
min.	:	minute
hr.	:	hour
yr.	:	year
ave.	:	average
min.	:	minimum
max.	:	maximum
kcal	:	kilocalories
kw	:	kilowatt
kwh	:	kilowatt-hour
%	:	percent
No.	:	number
℃	:	degree centigrade
cap.	:	capita
md	:	man-day
mil.	:	millimho
pers.	:	person
mmho	:	micromho
msl	:	meters above mean sea level
vpd	:	vehicle per day
ET	:	evapo-transpiration
N	:	nitrogen
P	:	phosphorus
K	:	potassium
Kenya shilling (Ksh)	:	Kenya shilling
K£	:	Kenya Pound (20 Kenya Shillings)
US$	:	US Dollar = 77.40 shillings = 118.80 yen (September 2001)

CHAPTER 1

Background and Objectives of the Study

CHAPTER 1 BACKGROUND AND OBJECTIVES OF THE STUDY

1.1 Introduction

At 1,700 m above sea level on a hilltop, Kabarnet, the capital of the Baringo District, is cool and green. Beyond the steep escarpment and 700 m below, lie the two divisions of Marigat and Mukutani in the vast expanse of the Rift Valley. The two divisions make up the Study Area. Much hotter and less green than Kabarnet, it is a small area of 1,224 km^2 inhabited by 54,000 people under the harsh conditions of semi-arid land.

Once the area was the land of a proud pastoral people who could roam around their country at will, but times have changed. The pressure of population growth, modernisation and commercialisation, ethnic conflicts and the resulting degradation of the environment are factors which are forcing local inhabitants to change their way of life. Under such circumstances, what do these people want? What can they do by themselves to realise their dreams? What can the government and foreign donors do for them? This Master Plan Study attempts to answer some of those questions.

1.2 Rationale of the Study

About 80 per cent of Kenya is classified as Arid and Semi-arid Land (ASAL) with less than 1,000 mm annual precipitation and more than 2,000 mm annual evaporation. About 30 per cent of Kenya's total population lives in the ASAL area. Because of the fact that there is little precipitation in the area, land productivity is low. Inadequate land management and deforestation aggravate environmental problems such as desertification. All these problems contribute to a standard of living which is lower than the national average, and this is one of the priority issues of the Eighth National Development Plan (1997-2001).

Baringo District lies in the mid-west of the Republic of Kenya, the larger part of it in the ASAL area. The average annual rainfall over the last 30 years in Marigat town is only 600 mm and it is well known that the rainfall fluctuates widely from year to year and place to place. Thus, the chronic shortage of water hampers agriculture and animal husbandry, which are the core activities of the area. Other problems include a low standard of education, poor condition of health, nutrition and sanitation, the low status of women, a lack of income-generating opportunities, environmental deterioration, and ethnic conflicts.

In order to solve these problems, it is necessary to establish and improve sustainable agriculture and animal husbandry based on sound water management. Other solutions include improving soil and forest management, constructing the physical and social infrastructure needed to meet the basic needs of local people, disseminating basic knowledge of health and sanitation, motivating the local communities to practise those, organizing villagers' associations, and helping the traditional pastoralists of various ethnic groups in establishing a new way of life. All these measures, however, are difficult to

carry out without the full participation of the local communities, especially women, who after all do the bulk of daily work.

With this backdrop in mind, it is necessary to draw up a new plan for the development of the area together with the local communities, taking into account its social structure, mores, agricultural and animal husbandry technologies, natural resource utilisation and environmental conservation. The plan should include a new role for the government, and practical measures which can be taken in order to build up capacity of the administration systems as well as that of the local communities.

For this purpose, the Government of Kenya requested in October 1997 that the Government of Japan send a study mission to Kenya. The Government of Japan sent a Preliminary Study mission of Japan International Cooperation Agency (JICA) in September 1998 and a Scope of Work (S/W) mission in February 1999. The Minutes of Meeting on Scope of Work were agreed and signed in March 1999 between the two governments, and Sanyu Consultants Inc. of Japan was contracted by JICA in July 1999 to carry out the Study.

1.3 Objectives of the Study

The overall objective of the Study is to raise the standard of living of the local communities in the Marigat and Mukutani Divisions of the Baringo District by encouraging local activities through the formulation of a Master Plan. The Plan is to be prepared in partnership with the local communities and the national and local governments, as well as with other stakeholders. The process of participatory planning itself is so vital to the Study that actually carrying out the process is itself as important an objective as the final Master Plan. The process should take into account the need for:

- increasing the capacity of local communities to meet their basic needs primarily through self-reliance, hence there is a need for greater reliance on cost-recovery and cost sharing;
- strengthening the support activities of national and local administration and other support institutions such as NGOs and local consultants, and;
- exchanging technology between the Kenyan counterpart personnel and the JICA Study Team members.

1.4 Study Approach for Plan Formulation

What do we mean by the term ‘Master Plan’ for the semi-arid land area of Baringo? Basically the term describes an integrated rural development plan for the Study Area at the broadest level of economic and social planning, a plan which could be replicated in other semi-arid land areas. The Master Plan coordinates plans at a sectoral level, but also has to fit into higher-level plans for district and national development.

In the 1970s and 1980s, integrated area development was a popular method in rural development. Most of those development projects, however, did not achieve their objectives, mainly because they were planned and prepared by the government and/or donors without involving the beneficiary communities. Furthermore, too many components were included, which made the coordination of project implementation almost impossible.

Learning from these past mistakes, this Studycontains two new elements apart from conventional master plan formulation: a participatory planning approach and verification projects. The Master Plan is, therefore, characterised by the active participation of local communities in its preparation; also, before the Plan is finalised, several of the most important hypotheses of the provisional plan are verified through the actual implementation of certain pilot projects, which are defined as verification projects. This process of formulating the Master Plan is shown in Figure 1.4.1 and summarised below:

- make a broad study of the Study Area by collecting data on its physical, social, and economic features and compiling relevant statistics on these topics;
- analyse this information to identify trends that could be influential in the future;
- assess the needs of the local communities and identify community-based development projects through Participatory Rural Appraisals (PRAs), Rapid Rural Appraisals (RRAs) and Project Cycle Management (PCM);
- prepare sector-wise development plans and then a provisional master plan by incorporating the community-based development projects identified through the participatory approach described above;
- implement certain verification projects to try out particular key hypotheses developed through formulating the provisional master plan, and
- prepare final Master Plan by feeding back the experience gained and lessons learnt by the team through the implementation of the verification projects.

As shown in Figure 1.4.1, the approach to formulating the Master Plan is a hybrid type, composed of both top-down and bottom-up approaches. In order to gain a clear overview of the Study Area and to take into account the carrying capacity of the land, overall resource availability and the need to maintain a balance with other alternative plans, a certain degree of top-down approach definitely needs to be adopted. On the other hand, a bottom-up approach is also required in order not to repeat the same kind of mistakes that were made in the 1970s to 1980s.

Implementation of the verification projects is another key to formulating the Master Plan that could really work on the ground. This Study is composed of two phases, Phase I and Phase II. During Phase I, a provisional master plan is prepared and a number of verification projects are identified. Phase II of the Study puts the verification projects into practice, and converts the provisional plan into the final Master Plan by feeding back into it

the experience and lessons coming up through the implementation process.

For some verification projects, however, the time frame allowed may not have been long enough to see their real impact in order for results to be reflected in the final Master Plan. Nevertheless all the lessons learned through the implementation of the verification projects are fully taken into account in order to formulate more realistic and more practical development strategies, project design and implementation disciplines as well as sector-wise technical recommendations.

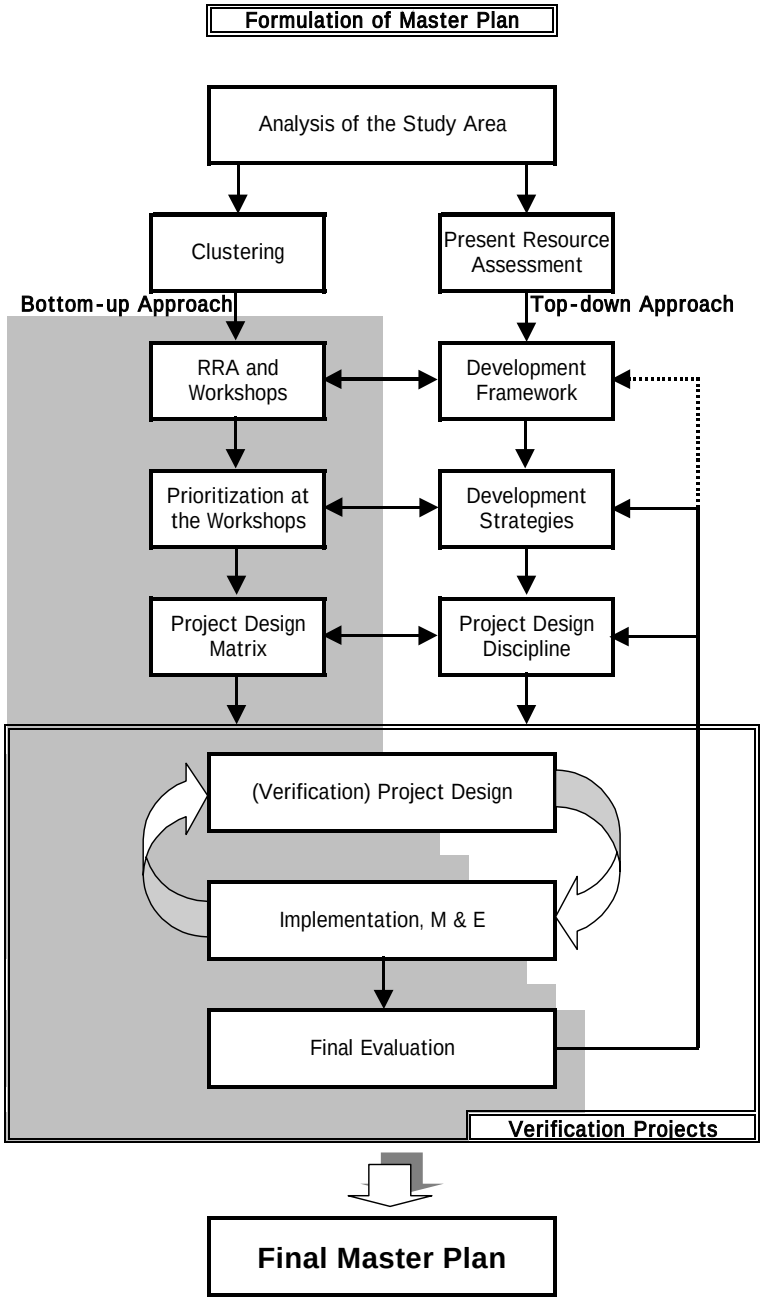


Figure 1.4.1 Flow Chart of Master Plan Formulation

CHAPTER 2

Challenges and Opportunities in Kenya Today

CHAPTER 2 CHALLENGES AND OPPORTUNITIES IN KENYA TODAY

2.1 Overview of the Country

2.1.1 General Feature of the Country

The Country is geographically classified into Coastal Belt, Rift Valley, Highlands, Western Kenya and Northern and Eastern Kenya. While the Highlands and Coastal Belt are regarded as agriculturally productive with suitable climate, the adjacent floors of the Rift Valley and Eastern Kenya are Arid and Semi-Arid lands (ASAL), and present many challenges to their productive use. Of the total land surface of Kenya, about 80 percent are defined as ASAL. About 25 percent of the country's total population of 30.4 million live in the ASAL areas, and over 50 percent of livestock are found there.

2.1.2 The Economy

When Kenya achieved its independence in 1963, all the eyes of its policy makers were turned to areas and sectors where economic returns were high. Most resources were poured into the Highlands and Coastal Belt, where coffee, tea, fruits, and tourism made good returns. It was hoped that the returns from such investments would 'trickle down' to the rest of the economy such as the ASAL area. The Kenyan economy, as a whole, indeed realized an average of 6 percent GDP growth in its initial years. Within several years, however, it became clear that the 'trickle down' theory did not work and areas such as ASAL were further marginalized.

The economy as a whole also started declining in the 1970s. The average GDP growth declined from about 6.6 percent in the second half of the 1960s to 4.1 percent in the 1980s, and bellow 1.0 percent in 2000, falling far below the current average population growth of 2.2 percent. The GNP per capita in 1999 stood at $360, which ranked about 20th out of 48 sub-Sahara African countries[1]. The physical infrastructure is dilapidated, even the tourism has declined, the commercial loan interest rate is as high as 27 percent, and inflation is about 7 percent.

It is now estimated that about 53 percent of the rural population and 49 percent of the urban population live beneath the absolute poverty line.[2] The highest incidence of poverty is found in the ASAL lands. On gender basis, women are considerably more vulnerable to poverty than men. Of the active female population, 69 percent work as subsistence farmers compared to 43 percent of men.[3]

1 Sourcce: World Bank, "World Atlas", 2001

2 Sources: Central Bureau of Statictics, the Government of Kenya, "Welfare Monitoring Survey" 1997. The poverty line established by the WMS (1997 and 2000) for the rural person was at Kshs. 1,239 per month or Kshs. 41.30 per day or less than one US dollar.

3 Ministry of Agriculture and Rural Development, the Government of Kenya, "Kenya Rural Development Strategy (draft)", July 2001.

Agriculture accounts for 26 percent of the total GDP, followed by industrial sector at 19 percent and tourism, also at 19 percent. Kenya's foreign debt is high, but debt service is fairly reasonable (26 percent of foreign exchange receipts in 1998) because of the large proportion of concessional debt. Interest payments on domestic debt are a serious burden, accounting for 18 percent of government revenues.[4]

After the onset of independence, Kenya's agricultural sector initially performed better than the average sub-Sahara Africa, making the annual growth rate of 6.2 percent from 1965 through 1973. Agricultural performance, however, has worsened steadily since, and now the growth rate is about zero percent, which is far below the country's population increase.

To reverse this declining trend, the Government has introduced a number of reforms during the last two decades. For example, the Structural Adjustment Programs (SAPs) of 1986 and 1993 introduced, among other things, a liberalization of agricultural prices, an abolishment of import licenses, and floating exchange rates. There have been, however, few signs of an improved economy.

The decline of the Kenyan economy since the mid-1970s can be attributed to many factors. The oil crises of 1973 and 1978, periodic droughts, adverse export prices of coffee and horticulture produce, combined with population increase and the devastating impact of HIV/AIDS, among others, have all contributed to the declining economy. The World Bank, however, singles out the lack of governance[5] as the main culprit for the slumped economy. In fact, since 1997, most members of the Kenya's donor community have kept a low profile in their development assistance to Kenya pending Kenya's reforms in establishing good governance.

In August 2000, however, and in recognition of the significant reform efforts made by the Government, the World Bank approved a US$150 million credit to support Kenya's economic recovery efforts. The Kenya Economic and Public Sector Reform Credit is intended to support the implementation of the country's Interim Poverty Reduction Strategy Paper (see section 2.2.3). The IMF provided a similar package at the same time. Nevertheless, upon the failure of passing the first anti-corruption bill at the Congress in August 2001, the IMF credit is now frozen.

4 World Bank, "PRSP: Kenya Case Example", World Bank's web-site, 2001.

5 The World Bank defines the "governance" as (a) the process by which authority is exercised in the management of a country's economic and social resources for development, and (b) the Government institutions' capacity to formulate and implement policies and programs.

2.2 Development Reform Programs in Rural Area

2.2.1 Recent Trends in Administration Systems

In this Study, the term 'administration systems' is defined as 'a form of social, economic, political organization or practice'. It is a thread of sewing a social, economic and political fabric. It is also the glue to put the government and local communities together. It is deeply affected by the society's history, culture and mores. It is related therefore every aspect of this Study. Main ingredients of administration systems include such items as roles of various stakeholders, government structure, policies, rules, regulations, and procedures, as well as governance, participation, and empowerment.

Since the end of the cold war, the focus of development assistance has changed significantly. Market-oriented economic policies and democratization have been further emphasized. The revolutionary development of information technology, burgeoning international trade, much increased flow of private funds into developing world, have all attributed to the stepped up pace of economic and social globalization.

Along with these shifts of focus, the role of the state has also changed. The government used to be the provider of all manners of goods and services. Now it is seen more as a facilitator, regulator, and provider of technical services and security. In short, the purpose of the Government is to create an enabling environment for people-centered development. Thus, decentralization has become a crucially important ingredient of rural development and poverty reduction.

2.2.2 District Focus for Rural Development

The first real attempt by the Government to decentralize planning came into effect in 1974 when District Development Officers (DDOs) were appointed to coordinate district plans. During the rest of the 1970s, minor measures were taken to further the decentralization drive, but it was the District Focus for Rural Development Strategy (DFRD strategy) launched in March 1983 that pushed decentralization into the heart of Kenya's rural development policy. Although the DFRD strategy has never been passed by an act of parliament, it has provided the guiding principles for Kenya's rural development.

The two most important objectives of DFRD Strategy were as follows and the external donor community supported the strategy, and in particular DANIDA contributed generously to the Rural Development Fund, the major source of financing for the DFRD initiative:

- broaden the base of rural development by moving most decisions concerning the planning and management of district specific projects closer to the point of implementation and the people who will be affected by these decisions.

- encourage local participation in order to improve problem identification, resource mobilization and utilization, project design and implementation.[6]

Like many other policies in Kenya, DFRD was a step towards the right direction. Popular buzzwords, such as "participation", "greater equity", "reducing delays in decision making", "sharing of development resources" and " arresting rural-urban migration" abounded throughout the statement of DFRD objectives. Nevertheless, the implementation of this strategy had been disappointingly slow and faced a crisis by the late 1990s.

Although DFRD was not the only policy responsible for the progress of Kenya's rural development, it has contributed relatively little, given the poor performance of the agricultural sector for the last quarter century (see 2.1.2 The Economy). Development funds, as shown in the National Development Plan, have seldom reached the districts in their full amount, let alone the projects. Decision making on development project planning and implementation has not been accelerated, neither has rural-urban migration been arrested. The target beneficiaries, the poor and vulnerable, are still largely excluded from direct involvement in the process of project design and implementation. The projects are therefore seen as Government rather than community projects.

What were the reasons behind the lack of success of DFRD strategy? The 1995 revision of DFRD strategy itself cited three reasons for the slow implementation, namely:

- lack of adequate resources both for development and recurrent operations
- shortage of housing and office accommodation
- inadequate communication facilities.

Although these were real constraints, there were more fundamental problems in the implementation of DFRD strategy, both in the policy content and in the manner in which policies were managed. Most importantly, it did not represent true decentralization. Decentralization – the transfer of authority and responsibility for public functions from the central government to subordinate or quasi-independent government organizations and/or the private sector – is a complex multifaceted concept. Types of decentralization include political, administrative, fiscal, and market decentralization.[7]

Political decentralization aims to give citizens or their elected representatives more power in public decision-making. It often requires constitutional or statutory reforms, the development of pluralistic political parties, the strengthening of legislatures, creation of local political units, and the encouragement of effective public interest groups. In Kenya,

6 Office of the President, "District Focus for Rural Development", March 1995, Chapter One, paragraph 1.1.

7 The definition and the types of decentralization described here are heavily quoted from the World Bank's Intranet website, "Decentralization On-Line Sourcebook", 2001.

among the legislative, judiciary and executive branches, the executive branch outweighs by far the other two, and true political decentralization is yet to take place.

Administrative decentralization seeks to redistribute authority, responsibility and financial resources for providing public services among different levels of government. It has three different forms as follows, and what actually happened under DFRD has been 'deconcentration' or at most 'delegation' and not the most desired 'devolution'.

- Deconcentration, which is the weakest form of decentralization, is used most frequently in unitary states and redistributes decision making authority and financial and management responsibilities among different levels of the central government.
- Delegation, which is a more extensive form of decentralization, transfers responsibility for decision-making and administration of public functions to semi-autonomous organizations not wholly controlled by the central government, but ultimately accountable to it.
- Devolution, which is the most thorough form of decentralization, transfers authority for decision-making, finance, and management to quasi-autonomous units of local government with corporate status. It usually transfers responsibilities for services to municipalities that elect their own mayors and councils, raise their own revenues, and have independent authority to make investment decisions.

Fiscal decentralization can take many forms including the following, and actually none of these took place systematically in large scale in DFRD, which was the most fatal weakness of the DFRD;

- self-financing or cost recovery through user charges;
- co-financing or co-production arrangements through which the users participate in providing services and infrastructure through monetary or labor contributions;
- expansion of local revenues through property or sales taxes, or indirect charges;
- intergovernmental transfers that shift general revenues from taxes collected by the central government to local governments for general or specific uses; and
- authorization of municipal borrowing and the mobilization of either national or local government resources through loan guarantees.

Market Decentralization shifts responsibility for functions from the public to the private sector. The most complete form of market decentralization is privatization and deregulation. Very few of these actually took place in DFRD. Such public sector organizations as Regional Development Authorities and National Irrigation Board have not performed well, but no institutional reform (such as privatization) has actually taken place in those organizations under DFRD.

To recap, what has happened under DFRD is not a real decentralization in a political, administrative, fiscal or market sense. Further, there were other problems in implementing DFRD, such as those listed below:

- There has been no real consensus about what constitutes community participation and how to facilitate this process. This perpetuates the dependence of the community on the state to provide them with developmental assistance.
- There are too many layers in the decision-making process from village to sub-location, location, division, district, province to the national level. Especially, the role played by the provincial government, the most noticeable of which is monitoring and evaluation, has been little, and one at times wonders if this layer of administration is in deed needed.
- At the district level, there is an absolute lack of capability to implement the DFRD strategy to the letter: officers are not sufficiently trained to facilitate community participation, nor are there enough financial and physical resources available for officers to carry out their responsibilities. Because of the lack of transport, district officers can hardly visit fields unless some donors' programs happen to offer such opportunities. In fact the communication gap (both in terms of physical distance and information) between the national government and district administration, and even at the local level, i.e., among district office, divisional office and the local community, are still huge. The Study Team observed almost helplessly that the national policies prepared in Nairobi had practically little relations to what is really happening at the grass root.
- There exists a lack of accountability and transparency in the use of resources, particularly the use of funds.
- The DFRD system was not sufficiently strong to prevent individuals from manipulating or altering the decisions made by communities.[8]

However, the most important factor, which has contributed to the lack of progress in DFRD strategy, would be the real or at least perceived weak governance in general. One official who was interviewed by the Study Team put it this way: "At the time of independence, local communities in Kenya did everything through *'harambee'*, which is a local self-help scheme. But soon the Government came in and 'governmentized' every program, in that, the Government did 'favors' to communities, and bribery started."

In 1995, DANIDA withdrew from financing the Rural Development Fund on the grounds that Kenya's public sector lacked any proper governance in managing such funds[9]. This resulted in the dissolution of the Fund and contributed to the most dramatic decline in confidence in the strategy. The powers vested in the District Commissioner, lack of power on the part of the local communities, the resulting (and continued) dominance by the state in almost every aspect of development, combined with the ever shrinking

8 GTZ, "District Focus for Rural Development : Proposed Revisions", June 1998.

9 Interview with a DANIDA staff in the Netherlands Embassy in Kenya.

financial base, have all contributed to the current crisis concerning DFRD.

Towards the end of the 1990s, however, the Government of Kenya started introducing a series of new reforms. In particular, during the Phase II of this Study (2000-2001), there were two important developments in Kenya related to administration systems, namely, the introduction of the Interim Poverty Reduction Strategy Paper (I-PRSP) and draft Kenya Rural Development Strategy (KRDS). These are discussed below.

2.2.3 Interim Poverty Reduction Strategy Paper (I-PRSP) for Kenya

Since 1998, in an attempt to improve economic governance, the government of Kenya has made significant changes in the management of the economy – bringing in a new 'change team' to manage the key sectors of finance, agriculture, civil service and transport infrastructure. In September 1999, the World Bank Group and the IMF determined that nationally-owned participatory poverty reduction strategies should provide the basis of all their concessional lending and for debt relief under the enhanced Heavily Indebted Poor Countries (HIPC) Initiative. This approach has led to the development of Poverty Reduction Strategy Papers (PRSPs) by country authorities for submission to the Bank and Fund Boards.

In mid-1999, the Government of Kenya started putting together the process for the 3-year Interim Poverty Reduction Strategy Paper (I-PRSP) and the Medium Term Expenditure Framework (MTEF). This involved a core team of local experts at the national level (treasury) and various sector committees at the ministerial levels, preparing their inputs in the draft I-PRSP with the objective of presenting it to the I-PRSP Consultative Forum. The I-PRSP Consultative Forum was organized by the Government and held in March 2000. The National Forum brought in about 300 persons from the government, private sector, NGOs, civil society and development partners.[10]

The Government committed itself to bring the "voice of the poor" to this debate and stated that it will take the debate to the provinces, districts and lower administrative levels. The NGOs volunteered to support the development of an inclusive participatory process using their machinery at the districts and the local levels.[11] Implementation of these activities, however, seems to have been slow.

2.2.4 Draft Kenya Rural Development Strategy

In parallel to the PRSP exercises and as part of the 'change team' effort, the Government of Kenya[12] has embarked on the preparation of the Kenya Rural Development Strategy

10 World Bank Website, "(PRSP) Poverty Reduction Strategy Formulation: Kenya Cse Example", 2001.

11 ditto.

12 The Ministry of Agriculture and Rural Development, Ministry of Finance and Planning, Ministry of Environment and Natural Resources and Ministry of Lands and Settlement,

(KRDS), which is to cover the period from 2001 to 2016. The first draft of KRDS came out in July 2001. This document was prepared through a highly consultative process that involved a wide range of stakeholders including primary producers, civil society, private sector, and public sector as well as donors.

Having described the declining performance of the rural sector during the last decade and analyzing the reasons for it, the draft KRDS presents its vision as "sustainable and equitable rural development for all". Its mission statement reads as: "To contribute to rural development through the promotion of food security, poverty alleviation, agro-industrial development, trade and rural employment, mainstreaming gender equity and sustainable utilization of the environment".[13]

Given the PRSP's statement that the agricultural sector will have to grow at about 4-6 percent per annum if it is to contribute to national growth and poverty reduction, the KRDS has chosen the following broad categories of policy interventions for realizing growth:

- Increasing agricultural and pastoral productivity;
- Empowering and creating opportunities for the private sector to operate;
- Policy and institutional reforms; and
- Enhancing public security and response to drought.[14]

In comparison with DFRD of 1983, what is most notable in the KRDS is its stronger emphasis on empowerment of the rural beneficiaries; the need to strengthen budget execution to ensure that resources are reaching communities; combating corruption; and participation of private sector, NGOs and CBOs. It argues that administrative and political decentralization will not be enough and there is a need to improve local tax bases, design intergovernmental fiscal transfer so that local governments can take up more fiscal responsibilities.

Further, the KRDS recommends changes in the government structure so that the district officers are accountable to the local level government for the development, implementation and funding of development initiatives. To serve this purpose, it suggests that the DFRD would have to be drastically modified. The allocation of resources from the national level would be made to the local authority and the implementing officers would be accountable to the local authority. The national subvention would be supplemented heavily with resources raised locally (fees, cess, taxes, NGOs) and stakeholder contributions. This devolution of development management

13 The Government of Kenya, "(draft) Kenya Rural Development Strategy (KRDS), 2001-2016", July 2001, Chapter Three, p.26

14 Do, Chapter Four, p.28

must be removed from any political connotations, the KRDS argues.[15]

For capacity building, the KRDS stresses the importance of developing village level committees and their linkage to the local government structure which would act as the local authority for regional planning, sourcing of external resources and a channel for the flow of the same. It suggests local institutions such as women's groups, trader associations and farmer cooperatives will serve the useful purpose of steering development.

The draft KRDS spells out the roles of major players in rural development and poverty reduction as follows:

- Communities: planning, implementing and monitoring of proposed interventions (this presupposes empowerment and capacity building for the community organizations)
- Civil society: enhancement of the beneficiary capacity to organize, generate and utilize resources more effectively and in transparent manner; advocacy works for improved governance; and representation of community interests
- Local authorities: through participatory methodologies, determining the aspirations of the local area and leading the communities in implementing the development; collection of local taxes and raising of subventions or grant funds from the central government or any other sources
- Private sector: commercial activities including production, processing, input and output marketing, import and export; provision of goods and services with strong 'private good' characteristics (e.g., research and extension for commercial crops)
- Public sector (rural sector ministries): sector development coordination (policy and legislation); promoting protection of natural resource base for agriculture; regulatory functions; funding agricultural research, extension and information activities; monitoring and management of food security; disease and pest control; promotion of private sector development
- Public sector (other ministries): creating and sustaining enabling policy and institutional environment; addressing market failure; social functions (health, education and relief activities); maintaining political stability.

15 Do, Chapter Four, p.34

2.3 Rural Development Administration and Services in ASAL Areas

2.3.1 Organizational Structure and Functions

On September 6, 1999, the Government announced a cabinet reshuffle, a result of which was that the number of ministries was reduced from 27 to 15, although the total number of ministers remained the same. The Ministry of Rural Development, the Study Team's counterpart ministry, was merged to become the new Ministry of Agriculture and Rural Development (MARD). In the new ministry, there are two Ministers, one for agriculture and the other for rural development. There are three Assistant Ministers and only one Permanent Secretary.

The counterpart department for the Study is 'Department of Land Reclamation, ASAL Development and Wastelands' commonly referred to as Department of Land Reclamation (DLR) (refer to Figure 2.3.1). The detailed functions of the DLR, according to Presidential Circular of May 2001, are:

- Formulating Integrated Rural Development Programmes (IRDP's),
- Coordinating multi-sectoral IRDP's,
- Coordinating and backstopping Regional Development Authorities,
- Coordinating ASAL development research activities e.g. Laikipia Reasearch Programme (now Center for Reasearch in ASAL Development – CETRAD),
- Addressing regional development imbalances,
- Providing rural development policy guidelines,
- Empowering communities to make decisions, initiate their development project, implementing them, monitor and own them, and
- Mobilizing communities to manage resources (local and external) for rural development.

Since this Study covers a wide range of subjects, many other government agencies are involved, and they form, at the national level, the Inter-Ministerial Steering Committee (IMSC). Down to the district level, the counterpart agency to the Study is the District Working Committee, composed of officers from the ministries' district offices and chaired by the District Commissioner. At the divisional level, there is a strong Divisional Working Committee (Div.WC). This is chaired by the District Program Officer and comprises extension officers from the relevant ministries at the division and the representatives of World Vision Kenya (WVK) and Christian Children Fund (CCF). The Div.WC has been very active in meetings and field work, and contributed a great deal in the implementation of this Study.

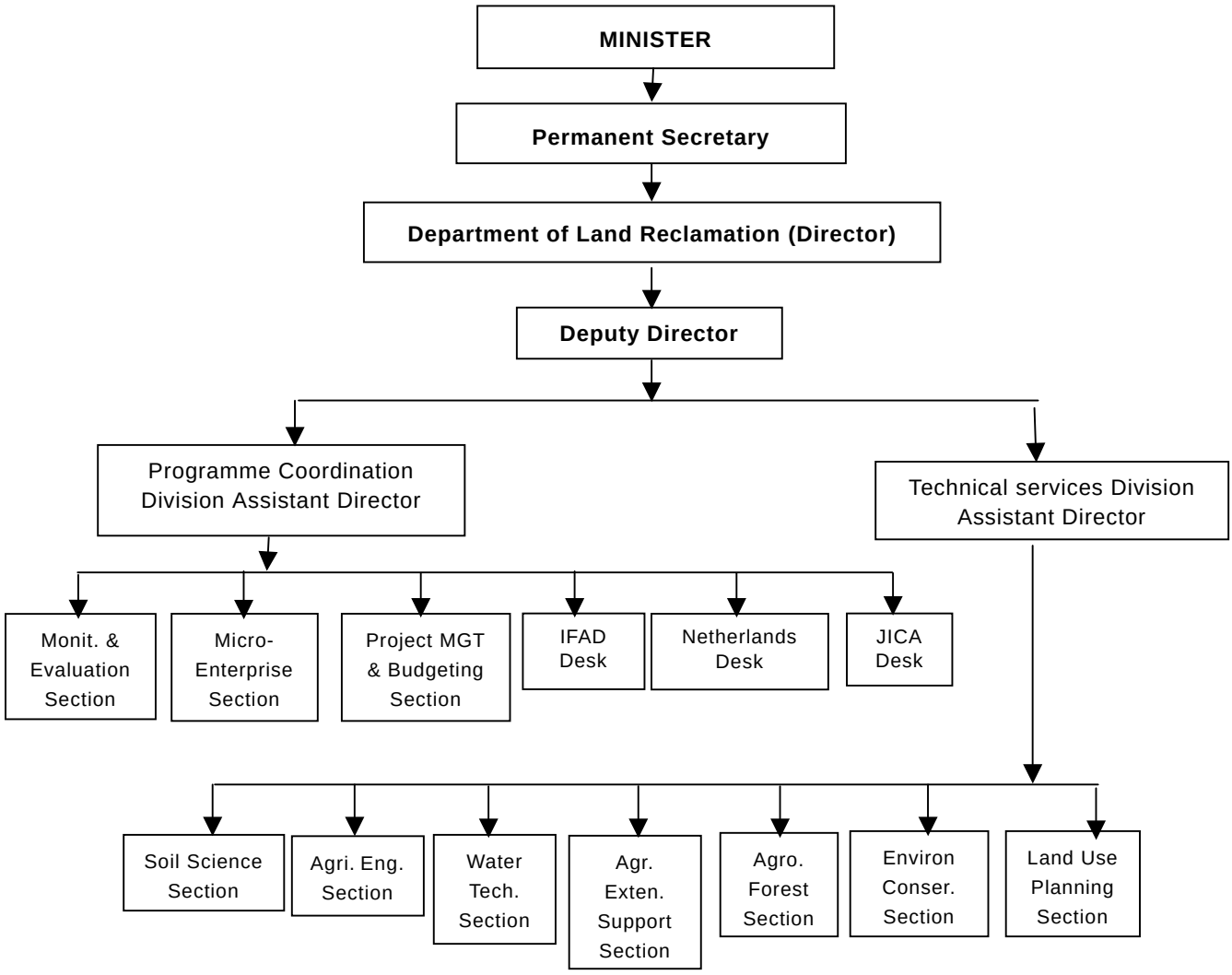


Figure 2.3.1 Organisation Chart of Department of Land Reclamation, MOARD

2.3.2 Budget Status and Personnel of the Department of Land Reclamation[16]

Figure 2.3.2 shows the 2001/2002 financial year's MOARD budget. Of the total budget, about 1 BKsh is grant type while 822 MKsh is loan. The DLR was allocated about 5 MKsh in the financial year against a formal request of 87 MKsh, which is only 6% against the formal request. Only the recurrent budget is made available and to make the matter worse, the release of funds is being done in piecemeal. The development budget has not been released yet.

16 The official name is Department of Land Reclamation but functions include rural development.

Table 2.3.1 presents the DLR gross allocation and expenditure for the financial year 1998/1999. The figures relevant to the Study are those on the Integrated ASAL Programs. Of these figures, the most relevant data are those in the Development category. The actual data for 1998/1999 shows that, while the Treasury approved much greater sum than the amount the DRD had proposed, in the end, the amount actually received by the DRD was only 64 percent of the DRD proposal and only 35 percent was actually spent (Noted is that ASAL appears to have spent less than amount actually received because funds form donors such as the Netherlands do not pass through the Government expenditure system and so are not captured).

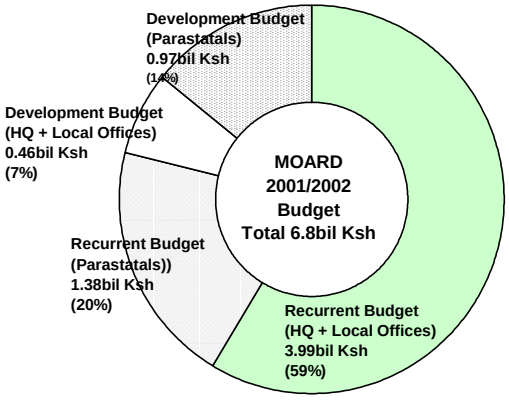


Figure 2.3.2 MOARD Budget[17] (Kshs.) 2001/2002 Financial Year

Table 2.3.1 Gross Allocation and Expenditure for the Department in 1998/1999

Descrition	Proposed	Treasury Appr'd	Acutually Rec'd	Actually Spent
Recurrent				
General Adm.	2,316,201	1,809,024	1,527,938	1,644,931
Regional Development	22,321,943	17,294,469	17,149,823	17,103,319
Integrated ASAL Prog.	1,115,726	892,407	703,106	691,702
Total, Ksh	25,753,870	19,995,900	19,380,867	19,439,952
Developemt				
General Adm.	90,000	10,000	10,000	9,890
Regional Dev.	26,355,740	22,322,614	12,707,935	15,783,305
Integrated ASAL Prog..	**9,369,270**	**16,005,046**	**6,067,093(64%)**	**3,241,489(35%)**
Total, Ksh	35,815,010	38,337,660	18,785,028	19,034,684

During the Phase 1 and 2 Field Study, Kenyan representatives at both the Nairobi and district level, brought up time and again the subject of a lack of funding for their operating costs. Despite the agreement signed between the Governments of Kenya and Japan for the Kenyan government to provide such funding, the representatives pointed out that there was no such provision made in the government budget as this had not been foreseen in the forward budget.

Aisde from the budgetary crisi in Kenya, one of the reasons for the lack of a budget for counterpart was the fact that JICA did not have the time to finally commit a specific amount for their contribution to the Study due to its single-year budget system, making

17 Budget Statement, 2001/2002, GoK.

GOK difficult to prepare for their due. Anyway, without this funding, GOK side concluded that it was impossible for them to participate in the activities of the Study Team. As a result of this, they requested that JICA pay their per diem and travel expenditures including vehicle operating costs.

As shown in Table 2.3.2, there are 247 staff in position in 1999/2000, of whom 133 staff members were located in the Ministry/Department Headquarters in Nairobi, and 114 were in the field. In the Baringo District, there were only 5 staff members[18]:

Table 2.3.2 Ministry/Department of Land Reclamation Staff

Number for 1998/99		Number for 1999/2000		Number for 2001/2002	
Authorized	In position	Authorized	In position	Authorized	In position
917	272	492	247	418	222

The DLR has lost, like other government departments, over 25 members of staff from central planning, administration, clerical, secretarial, telephone operation, messenger, cleaning and driving units. The loss has been due to the on-going civil service reform programme (retrenchment), transfers to other departments/ministries and death. Several respondents interviewed by a Short Term (local) Consultant during September 2001 mentioned that "inefficiency and corruption is higher now than before retrenchment exercise". This contradicts the objective of reducing civil servants was to improve efficiency.

2.4 Donor Activities in Rural Development for the ASAL Area and Related Services

Although dramatically reduced since 1997, many multilateral and bilateral donors still provide financial and technical assistance to Kenya. These multilateral donors include the World Bank, IMF, the African Development Bank, EU, UNDP and other UN agencies such as IFAD and FAO. The major bilateral donors are Japan (JBIC/JICA), UK (DFID), Germany (KfW/GTZ), Canada (CIDA), Sweden (SIDA), and USA (USAID). In the past, the Netherlands and Denmark (DANIDA) were big donors, but they have now largely withdrawn from Kenya.

The amount of external aid to Kenya has been declining significantly. The downward trend is expected to continue until Kenya succeeds in installing good governance in its public sector. In fact, there is a remarkable consensus among donor organizations on this point. One notable exception, however, is the stance of the Government of Japan. Unlike other donors, Japan continues a high level of assistance to Kenya. One reason for this is Kenya's strategic position as the central point of the entire East Africa Region. Japan,

18 1 District Program Officer, 1 clerk, 1 Copy Typist/Secretary, and 1drivers.

however, is now in the minority, because the other aid agencies are significantly reducing their levels of assistance. For example, between 1997 and 1999, the World Bank reduced its number of investment projects from 23 to 12, and its new commitment value from $1,078 million to $543 million.

In the ASAL areas, the major donors have included the Netherlands, Denmark (DANIDA), Germany (GTZ), and the World Bank. In addition, there are strong and active NGOs, such as Plan International. Care Kenya, World Vision Kenya (WVK) and Christian Children's Fund (CCF). Further, religious organizations have a strong presence. To date, except this Study and the Kitui Forestry Project in the south, Japan has not been active in the ASAL areas, particularly in Baringo and its neighboring districts.

2.5 The Role of the Administration Systems in the People-Centered Participatory Approach

2.5.1 Future Direction of Rural Development Sector

The guiding principles surrounding the development of the rural sector in Kenya is going to be the Kenya Rural Development Strategy, which is being finalized by the Government. As far as its July 2001 draft is concerned, it is a bold step forward pushing further the political, administrative, fiscal and market decentralization. The Study Team hopes that the strategic direction suggested in the draft becomes the government's official policy soon. There are, however, two areas that the Study Team is still concerned:

- For rural development, both top-down and bottom-up approaches are needed. However, in the present day Kenya, the tips of the arrows do not meet. In fact there is a rather large gap between the two. Where should they meet or mesh? The draft KRDS suggests that to take place at the District level. On the other hand, judging from the experiences in Baringo, the Study Team recommends further down at the divisional level. There is still a huge gap between the district headquarters in Kabarnet and divisions and locations in the Study Area. It would be impossible to coordinate any of grass root activities from the district headquarters.
- Real political decentralization cannot take place unless the power imbalance among the executive, judiciary and legislative branches is corrected. Further, there should be an independent local civil service system working under elected local government heads.

The broad direction of the rural development sector, however, is clear enough at least in terms of what ought to be done. These areas include:

- Enhancing community mobilization and participation,
- Separating development from control functions,
- Reducing administrative layers in development planning and implementation

processes,

- Giving more resource raising and spending authority to the community and at least to the district if not to the divisional level rather than keeping it at the national level,
- Giving the state a new role as facilitator and provider of technical services and security rather than provider of all the goods and services for communities, and
- Increasing transparency and accountability and looting out corruption.

The interviews that the Study Team carried out revealed that there is an almost unanimous consensus regarding the above issues amongst the government officials both at the national and district levels, as well as among other non-governmental stakeholders. The real questions are: 1) how much political will exists to carry out these reforms among the nation's leaders, 2) how well the various stakeholders are equipped to carry out such reforms, and 3) exactly how to go about implementing the reforms.

2.5.2 Crisis and Opportunity in Kenya

Kenya is still in crisis. In Chinese, however, "crisis" is spelled using two characters signifying "danger" and "opportunity". Indeed, every crisis presents opportunities, and the present Kenyan crisis is no exception. The public sector might have lost its confidence, but it means that the public sector is more than ever ready to accept the need for change. The general public and local beneficiaries who had become accustomed to the idea that government would provide everything for them, now realize that they themselves will have to be directly involved in planning their own future, and will have to participate in implementing such course of action.

If the donor contributions have dwindled, an opportunity has thereby been presented to mobilize resources from the beneficiary community and to carry out more modest but realistic development programs on a cost-sharing and cost recovery basis. The timing is ideal but there needs to be an awareness of how to effectively go about such programs. In fact, there are many remedial actions already being taken. GOK has embarked on an ambitious PRSP exercise, and the draft KRDS is a living proof of the Kenyan government's willingness to introduce a bold change for rural development and poverty reduction.

Among these measures being contemplated, the people-centered approach would be at the core of all remedial efforts in rural poverty reduction. Tools such as the Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA), and Project Cycle Management (PCM) should be fully utilized, and government officials, whose new role would be as facilitator ought to be well trained in these techniques.

CHAPTER 3

The Study Area

CHAPTER 3 THE STUDY AREA

3.1 Historical Context of the Study Area

Looking at the present land already environmentally deteriorated, whoever could imagine that the Study Area around once used to be called a GRANARY? Vegetation depletion, land denudation, and soil erosion are taking place over the Study Area, and some lands are already so degraded that those could not be recovered unless strong measures were undertaken. Being difficult to imagine, the area around Baringo Lake was once producing surplus grains as Peter D. Little described in his book titled "The Elusive Granary". Why has the environment of the Study Area been so deteriorated?

Geographers in the 1800s had received reports of the existence of Baringo Lake, probably from the many Arab traders who visited the area en route from the Kenyan coast to Uganda and eastern Zaire. The traders considered the Il Chamus community being one of the most dependable sources of grain along the entire route. In the last century, the Baringo basin became the scene of important pastoral migrations seeking fodder. Water was much available throughout the year from the lake, Perkerra River and Molo River than the present. Excellent swamp-pastures were found along the fringe of Baringo Lake and in the Molo-Perkerra drainage area. The hills located southeast of the lake also contained excellent perennial grasses. All these had attracted many herders, initiating population congestion already at this time.

In early 1900s, European settlers had established ranching areas at around Nakuru and in Laikipia plateau. The southern Tugen, living around Nakuru, were seriously affected by competition for land with the white settlers, and they were forced to move towards north which was Arabel, giving pressure on the then Il Chamus grazing land. Laikipia plateau used to, until 1920s, be a reserved area by herders during most dry seasons. The loss of Laikipia was a serious damage for Il Chamus. That kind of squeezing pastoral grazing rights came at a time when livestock numbers were growing rapidly in Baringo. Besides Il Chamus, the Tugen who were in the Tugen Hills also increased their livestock in line with the population growth and started moving down from the Hills into lowland grazing areas. The pressure on the land had thus been rapidly increased.

The loss of grazing lands became very severe when the area was stricken by a series of droughts. Drought of the 1920s and 1930s, sometimes accompanied with locust, must have given larger damage to the environment already being overexploited. Drought took place during the times; 1921–1922, 1924–1925, 1927–1928 and 1931–1933. Though the livestock had almost recovered following these calamities, the environmental degradation such as soil erosion and vegetation change is thought to have initiated during these time.

In addition to above losses leading to crowding problem, newly established irrigation schemes had exacerbated the congestion though they provided grains. Those are Sandai

Irrigation, initiated at 1932, and Perkerra Irrigation being started in 1956, following which other irrigations such as Kamoskei, Kiserian and upper Mukutani had also shown up. All these have attributed to further congestion.

Besides above, from northeast of the area was encroachment by Pokot who has moved deep into the lands near Rugus and Mukutani. The western side of the Study Area has almost continuously had new settlers from the Tugen Hills pressured by the population growth there. Refugees had also come into near Marigat town from the northern part of the County. The population has thus dramatically increased, given a population density from 4.4 person/km^2 in 1948, the year of the first census in the Country, to 44 person/km^2 in 1999, the year of the latest census.

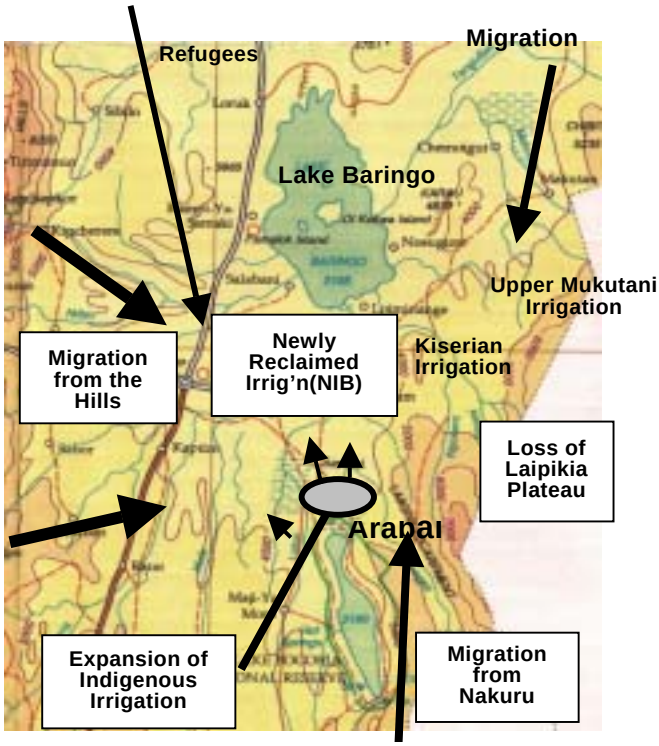


Figure 3.1.1 Migration into the Study Area

Adding the condition degraded considerably by human and livestock increases, one thing that we don't have to forget is a vegetation change from glasses to bushes. "There used to be more grasses and less trees, but now we see less grasses and more trees. The bushes are eating our grass!" This quote from an Il Chamus elder whom the Team interviewed highlights their main problem concerning pasture. The area is changing increasingly towards bushlands, suppressing the growth of grasses, particularly perennials. The reason for this is not only overgrazing but also a change of traditional range management.

The local people had practiced burning rangeland about one month before rainy season started. This practice has several desirable effects, which includes the elimination of bushes, the regeneration of young and fresh grass, and control of tsetse-flies and ticks. Once there is dense bush, the people could only eliminate it by burning. However, this has been officially prohibited since colonial time, and even if allowed it is no longer practical under the present condition .The Il Chamus elder stated that the number of the current livestock was so big that neither could they wait until the new grasses grew up nor other places to herd them during the time.

As the vegetation has been changing, the livestock habitat has also changed from favoring grazers to favoring browsers. There used to be more cattle and less sheep and goats, but now sheep and goats exceed cattle in number. The browsers can survive harsher condition than cattle, and are well-known to eat up grasses including part of roots. This, in turn, causes further vegetation depletion when overgrazed. Thus, current condition is in a sort of downward vicious circle and one may see camels in the coming decades that are already familiar in the northern part of the District.

As Dahl remarks: "pastoralism remains viable as long as the population (human and animal) stays static, or as long as population growth can be met with territorial expansion". Pastoralism, once widely practiced in the area, is sustainable way of life as long as they could move following available pasture. Today, however, the area is rather diminishing because of population congestion, and furthermore pasture qualities are deteriorating in the vicious circle. Thus, most of the balancing mechanism has gradually lost their dynamics with the many socio-economic changes taking place. Consequences of soil erosion, land degradation and deforestation in the Study Area are now posing a serious threat to the environment.

3.2 People, Land and Livelihood

Coping with the deteriorating environment, most people in the Study Area are struggling in the daily life, some of whom just make ends meet and depend on survival strategies they have devised. The people are composed of Tugen, Il Chamus, Turukana and Pokot with the first two being the majority. The total population in 1999 is estimated at 54,200, giving a population density of 44 persons/km^2 over 1,224 km^2.

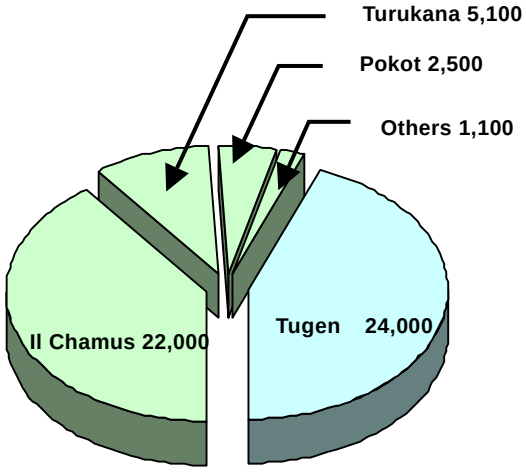


Figure 3.2.1 Ethnic Composition

Total number of households is estimated at 9,850, and the average family size comes to 5.5 persons (defined as members who eat together and not means extended family with blood and polygamy). There are 178 villages in the Study Area, thereby the average population of a village is 305 (or 55 households). Although pastoralism once dominated the Study Area, farming activities have been getting momentum as a supplement or being the mainstay in an irrigated area. Thus, those people, being the majority in the Study Area, can be called "Agro-Pastoralist".

The land where the people are living gives vast transformation. Lower part of the Study Area is located at a very flat land, called the Floor of the Rift Valley, and has relatively fertile soils, while western and eastern sides are stretching up onto the slopes of the Valley. Soils found in the slopes are relatively shallow and infertile often accompanied with stone outcroppings. Rainfall is little and also erratic, as expected in ASAL area, ranging between 600 and 700 mm. The Study Area's land use under these condition is categorized in rangeland being the majority of as much as 85 percent, forest, irrigated land, rainfed land and lake area.

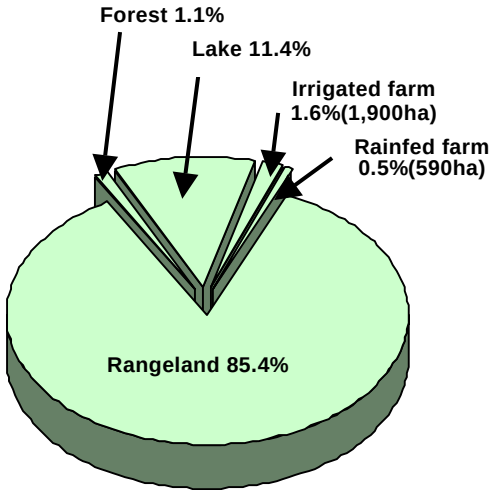


Figure 3.2.2 Land Use of the Study Area

The rangeland rears large number of livestock; in 1998 about 62,000 cattle, 230,000 goats, and 55,000 sheep. East African Zebu dominates the cattle, occupying about 80 to 90 percent, and goats are almost all East African Goat. Milk is very important and actually the staple food for pastoralist. Although the local East African Zebu can well be adapted to ASAL condition, they produce only one to two litters milk per day (while four to six litters for cross-bred and eight to 10 litters for grade).

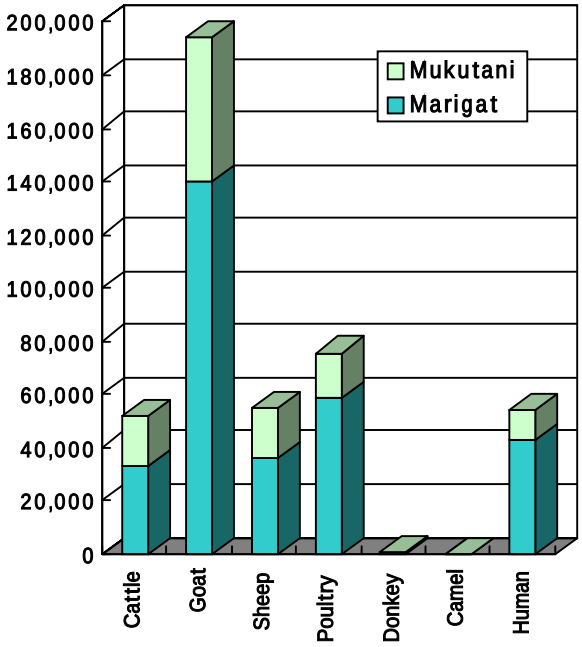


Figure 3.2.3 Livestock Distribution

Prevailing is the grazing looking for grass and leaves on the communal land, with several number of semi-zero-grazing (no zero-grazing over in the Study Area). Often pastoralist has to herd their cattle very far away from their homestead, directing to hilly areas where pasture still can be found under a relatively high rainfall compared to lower part of the Study Area. The far-herding usually takes place during the periods of September to October and January to April, reaching to as long as six months if the drought is severe.

Agriculture, either rainfed or irrigated, mostly cultivates maize and, to a lesser extent, sorghum, millet and groundnut. The maize occupies about 70 percent of the whole

farmland and the average yield under rainfed is a mere 1.7 ton/ha. Maize is more susceptible to drought than sorghum and millet, thus leading to sometimes total nil harvesting when a drought comes. ASAL areas used to plant sorghum and millet, however maize was brought in during colonial period and has been spreading over the Country without considering the climatic condition much. Food self-sufficiency in the Study Area is very low even in a normal year; an example is that cereal self-sufficiency in 1999 is just 43 percent.

Very severe drought tends to come every 10 to 15 years and small drought just every three to four years. Large number of cattle had died of drought in 1984, the severest drought in decades. Also, notified is that recent drought tends to stay over a couple of years like 1992, '93, and '94. This drought had devastated fish production of Baringo Lake. Though normal years' fish production is usually more than 200 tons, 1994 year's production was only 8 tons. In addition, the people had been stricken by yet another drought over the years of 1999 to 2000. People in Rugus and Upper Mukutani sub-locations had lost 74% and 73% of their cattle respectively, and also the People of Sandai and Arabal had lost about half the cattle they used to have before the drought (identified during PCM workshop).

The people depend on food relief and also practice such survival strategies as selling livestock, and eating grasses and even dead cattle when they are hit by very severe drought. Baringo district has actually been receiving relief food chronically, monthly average of which was about 360 tons. In 1998, the Study area had received relief food for a period of between five months and as long as whole the year, depending on the location. Recent drought had taken place in 1999 and 2000, and about 61% population of the Study area had received about 1,560 tons maize for a period of between June and November of year 2000, giving 12 kg/capita/month.

3.3 Public Services

The Ministry has a divisional office in Marigat town, which is in charge of Marigat and Mukutani Divisions. The office has two agriculture subject matter specialists, one for irrigation and the other for soil conservation, under whom 8 extension officers are in charge of Marigat division and one in charge of Mukutani Division. Concerning livestock, there are two subject matter specialists, under whom there are two assistant livestock specialists and 8 extension officers. Lack of mobility greatly hinders their activities.

Medical services are provided in such institutions as 3 health centers, one being Marigat Health Center, 8 dispensaries, and 7 Bamako Initiative Stations. Since a cost sharing is applied to those services, people who are very poor and/or live in very remote area cannot access. Medical facilities are not well equipped so that the route and source of an infection cannot be identified and they cannot prevent the infectious diseases like cholera from further infection. Annual operational budget is not well arranged, as represented in

the case of Marigat Health Center being given only 60,000 Ksh. Even the mere operational budget cannot arrive to those institutions on time, hindering their activities.

Turning to education, there are 41 primary schools (compulsory) and 4 high schools. The 41 primary schools provide 341 classes in total that can accommodate 11,800 students while at present about 8,200 students are attending. The 4 high schools have, as of year 1999, 408 male and 279 female students, giving a total of 687 students. Besides the formal school education, there are 14 adult education classes, but the lack of the teachers hinders the activity. There is a polytechnic operated on community basis, called Marigat Youth Polytechnic, providing dressmaking, masonry, and carpentry courses. Those terms are 2 years long so that many students cannot continue, resulting in only 15 students as of end of 1999.

Public roads have been constructed by the Ministry of Roads and Public Works, and the national highway from Nakuru and roads near Marigat town are tarmac. The tarmac roads facilitate people's activities, however other roads than the tarmac are just gravel-paved or otherwise earthen-compacted. Rain makes those roads very slippery and hinders mobility of the people. Electricity and telephone are available only in and around Kampi ya Samaki and Marigat town. The users are in most cases hotels and restaurants. Because of small number of the users, there is still enough room; 1.0 MVA for electricity and 234 telephone lines that are waiting for.

3.4 Development Constraints

Following are the development constraints and causes in the Study Area. Those are based on what the Team has observed, interviews, and outcomes from PRA and PCM workshops.

3.4.1 Water Shortage

Seven PRAs had been carried out in September and October of 1999 by this Study. The PRAs revealed that major problem for the 7 communities was concerned about water and their development opportunities and priority project were also water related in most cases. World Vision, very active in the Study area, had carried out another PRA in Baringo District including the Study area in 1998. There were 8 communities in the Study area that the World Vision carried out the PRA. All the 8 communities raised water shortage as their one of top three problems. The fact that there are only 3 perennial rivers in the Study area clearly tells us the people who live far away from those rivers have severe problem of getting water.

A mean to get water in a dry and semi-dry area is in most cases hand pump attached to a deep well. However, the groundwater along the Rift Valley does not suite for domestic use due to its high fluoride content. Only a meager area, which is southern-west patch of the Study area, can get groundwater free from high fluoride content. The groundwater is

replenished from an aquifer stretching into the Tugen Hills different from deep groundwater aquifer along the Rift Valley. People who cannot access the perennial rivers or Lake Baringo have no means to get water than depending on pans (small pond replenished by rainwater), and seepage water that could be taken by digging river bed of seasonal ones. Though there are rainfall roof-catchment systems in the Study area, these are restricted only to buildings for institution such as school and hospital, which roofs are wide enough to collect rainwater.

3.4.2 Overgrazing and Poor Breeding Management

Livestock owned by pastoralist have many roles such as providing milk that is their staple food, dowry (2 to 15 cattle, 5 to 20 goats), offerings served during circumcision, marriage, ascending of age-group, income source, social status, etc. They sell their livestock when they need cash urgently. In this sense, their livestock is comparable to our bank savings. They always try to increase their herds just same as we try to increase our bank saving. This, however, results in overgrazing (detailed in sub-chapter 4.2.3). Mobility over vast areas is nowadays very much restricted as compared to the past. This causes close inter-marriage in their herds so that their livestock's quality is genetically getting poor. The native livestock can survive in the harsh environment but in turn gives less milk and is small in size as compared to improved ones.

3.4.3 Low Agricultural Productivity

Agricultural productivity under rain-fed condition is very low due to little rainfall and drought often taking place, and even irrigated areas cannot produce high yield because of chronicle water shortage and uneven water distribution. An average yield for maize is just 1.7 ton/ha, this sometimes becomes nil when hit by drought. The people are very often dependent on food assistance which usually invites dependency syndrome. Rain-harvesting technique may be a promising scheme in that kind of water shortage areas but has not yet been tried. Soil conservation technique is not seen either. Erratic climatic condition lowers intensives of applying such techniques. As a result, soil erosion is getting worse especially at western part of the Study area, and inviting further degradation of the productivity and vegetation.

3.4.4 Poor Market Condition

Although a national highway connecting Nakuru runs at west of Marigat town, most products are sold and consumed within the Study area or otherwise middlemen buy the products at very low prices. The middlemen buy honey and hand craft at very low prices and the people do not know where the middle come from and where they sell at and how much. Lock of these information results in decreasing their motivation towards quality improvement. One may see some people going to Kabarnet to sell their milk and honey and coming back with some commodity to sell by means of Matatu, but they are very few in number.

3.4.5 Unhygienic Living Condition and Diseases

Diseases found in the Study area are malaria, dysentery, and typhoid that are water-born. Cholera has taken place in years of 1995, 1998 and 1999. It is very difficult to get water in the Study area and some people tend to live near Lake Baring, which in turn increases malaria infection. Medical facilities and medicine are not enough and cost-sharing prevents poor people from the access. Foot and mouth disease in livestock is also prevailing, and TB, hydrophobia and tetanus are transmittal to human (TB is most probable). Some communities raise donkey for the purpose of transportation. The donkeys are in most cases common property so that community people do not take care well, resulting in a medium of transmitting disease to other livestock.

3.4.6 Low Education Level

Primary school enrollment ratio in the Study area is just 46%. 1989 census gives a very low literate figure of Baringo District, which was only 37%. Though there are 41 primary schools which can accommodate 11,800 students, present enrollment is about 8,200 (about 70% of the prospective enrollment). High school enrollment, not compulsory, is mere 13% for male and 10% for female. Of high school graduates in 1998, only 6 had marked enough to go to public college and university. Causes for the low enrollment and high drop rate are; some schools are very far from their homestead (small children cannot walk to), high expenses of purchasing text book, uniform and others, an obliged donation for school maintenance, purchase of desk and chair, and premature marriage and pregnancy for female students.

3.4.7 Difficulty in Institutionalization and Financial Management

While there are great numbers of organizations, reaching to 220 for only women and youth groups, only a few organizations are operational. Given an example, Mogoswok Cooperative Society whose membership was about 1,000 has ceased the operation since 1992 due to over-capacity of the management and misappropriation by the committee members. Most members were illiterate so that check function for financial management did not work. Also, one may tell that norm regarding interdependence works negatively in terms of establishing transparency. Likewise, their way of survival living may make it difficult to keep financial soundness over years. A drought would require them to use up even the capital to survive.

3.4.8 Weakening of Government Support

On the course of structural adjustment, Kenyan government is now moving in a downsizing way; retrenchment of the staff, curtailing budget, etc. Since government staff cannot arrange transportation, allowance and lodging, they have almost nothing rather than staying in their office. An agricultural extension officer has to cover as many as 800 farmers. The houses are scattered over the Study area and curtailed transportation makes really

difficult to contact farmers. Despite their capability, most extension officers have to spend about 70% official time in their office but not in the field.

3.4.9 Dependency Syndrome

Baring District has received better assistance in emergency cases like drought. Also, many donors have been engaged in this area such as WB, FAO and NGOs. A negative impact, dependency syndrome, can often be seen in some communities. Leaning from past projects, any projects carried out by NGOs are now on basis of cost-sharing. It is very difficult to cease dependency syndrome; for example, people think even maintenance of a pan should be done on a cost-sharing basis or otherwise new pan should be constructed again on basis of cost-sharing although such maintenance, apart from initial investment, should be managed by the users.

3.5 Development Potential

Following are the development potentials the Team has observed and identified based on PRA and PCM workshops.

3.5.1 Abundant Acacia (Bee Keeping Promotion)

There are abundant Acacias in and around the Study area, which provide high quality nectar. The Study area has been experiencing bee keeping since long time ago. The area has, as of year 1998, 246 modern Kenya Top Bar Hives (an improved hive) and 7,220 traditional log hives. Haney production in 1998 was 15,000kg for crude, 175kg for semi-refined, and 30kg for refined. About 30% of the production is consumed domestically, and 70% is for selling. Of the 70%, about 95% is handled by middlemen and taken out of the Study area. Honey demand in Kenya is very high so that production has yet to meet the demand.

3.5.2 Livestock Promotion (Goat Promotion)

Most Kenyans are very fond of goat meat. The biggest production area over Kenya is Lift Valley province, of which Baring district has the second biggest goat in number after Turukana district. Goat meat costs about 140 to 160 Ksh per kg while cattle meat 120 to 140 Ksh, thus the former is higher. Goat is superior in terms of propagation and can be raised with low investment cost. Though vegetation gets depleted easily if once goats are overgrazed, there is a possibility of goat promotion accompanied with castration and introduction of an improved buck.

3.5.3 Fertile Soil (Agriculture Promotion)

About 35% of the Study area is associated with alluvial deposits which are somewhat fertile. Little rainfall characterized in the ASAL holds back the full utilization of the lands without irrigation. Even reclaimed land does not usually have soil conservation

work, so that soil erosion takes place easily when hit by heavy rains, lowering the productivity further. The alluvial soil is fertile and deep in many places, and no salt accumulation can be found. Though little rainfall makes difficult to realize very high productivity, food security could be more increased if the agriculture on the alluvial lands was associated with rain-harvesting technique and introduced drought tolerant crops like sorghum.

3.5.4 Lake Baringo Wild Life (Tourism Promotion)

Lake Baringo invites as many as 30,000 tourists a year. Tourists are coming from all over the world, and are welcomed by about 150 hippopotamuses (there used to be about 400 before 1994's drought) and about 480 species of birds. Lake Baringo Club hotel marked 11,173 beds in 1998 and the income reached as much as about 700,000 US$. Though people cannot compete against that kind of well-equipped hotel, there is a youth group providing boat to those guests. Handcraft making, introduction of their traditional lifestyle, honey selling could be promoted focusing those tourists.

3.5.5 Solidarity of Villagers

Cattle rustling and tribal conflict often take lace in the Study area. When one sees a community, he/she feels that solidarity among the members is very high. During PRAs, 3 among 7 communities were very proud of the unity, harmony and solidarity among the community members. Interviews often brings up complaints against the Government but nil against their leaders like chief, sub-chief and elders. Inter-dependence and mutual aid among the community members still highly exists so that they could cope with their harsh living condition.

3.5.6 NGOs

Such NGOs as World Vision and Christian Children Fund are working in the Study area. These NGOs provide assistance to community projects as well as training like financial management. The NGOs play a great role of supporting communities in lieu of the Government or otherwise work together with the Government. Also, missionaries like African Inland Church provide food or necessary assistance to poorer people. Those NGOs and organizations play a great role of assisting communities since the Government does not have enough budget.

3.6 Clustering the Study Area, and those Features

The Study Area gives broad transformation, despite the smallness of just about 1,200 km^2, as one moves between the north and the south and descends from the hilly sides down to the Floor. The transformation can be seen over the people living there, the agro-ecology, the topography, the socio-economy, etc. Looking at these transformations together, the Study Area can be demarcated in several clusters. The map below shows the clusters

divided in seven areas, taking location boundary in mind:

Of 11 locations, Eldume and Ngambo locations can be put in a same cluster considering similarity in terms of ethnicity, land use, and topography (Cluster B). Same can be done among three locations of Loboi, Sandai, and Kapkuikui, specially taking into consideration their major economic activity of irrigation (Cluster D). Also, Mukutani and Kiserian can be grouped in one cluster as the two locations resemble in view of traditional way of life; the pastoralism (Cluster F). Thus, all these lead to getting the 11 locations grouped in seven clusters, the character of which are summarized in the following table:

Figure 3.6.1 Clustering of the Study Area

Table 3.6.1 Clustering of the Study Area (from 11 locations to 7 clusters)

Location	Kimalel	Salabani	Marigt	Eldume Ngambo	Sandai Loboi kapkuikui	Mukutani Kiserian	Arabal
Cluster	E	C	A	B	D	F	G
Ethnicity	Tugen	Il Chamus (Tugen)	Tugen (Il Chamus)	Il Chamus (Tugen)	Tugen	Il Chamus	Tugen
Land Use	LM-5	IL-6			LM-5	IL-6	LM-5
Topog'hy							
Character	Hilly	Cosmopolitan, Commercial		Swamp, Crop field		Traditional	Livestock

Note: LM-5 Lower Midland Livestock-Millet Zone, IL-6 Inner Lowland Ranching Zone

Bar graph below shows the income, including the value of home consumption, of seven villages selected as the representative of each cluster. People in Kimalel have the lowest monthly income of only 1,200 Ksh, and the second lowest which is 1,800 Ksh is for Mukutani people. On the other hand, highest income is greatly associated with irrigation as shown in Marigat location (Perkerra irrigation) and Sandai location (Sandai irrigation). The monthly incomes are 5,500 Ksh and 5,200 Ksh in Marigat and Sandai respectively.

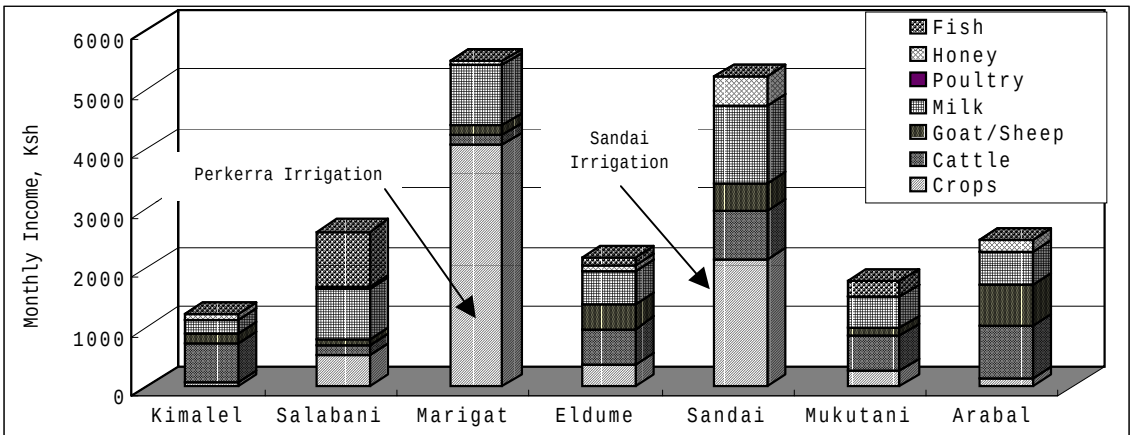


Figure 3.6.2 Monthly Income Distribution by Location

In order to grasp detail situation of the clusters, a representative village had been selected for PRA exercises from each cluster, and RRA had also been carried out for poor and marginal people who could not attend the PRA workshop so that the Team was secured not to overlook the problems associated to them. The results of PRA are summarized in Table 3.6.2 with the location shown in Figure 3.6.3, and a brief description based on not only PRA but also RRA is made hereunder by cluster:

3.6.1 Cluster A (Marigat)

This cluster holds Marigat Town that is the biggest center in the Study Area. The cluster's population (1999 estimation) is about 11,900, giving a population density of 63 persons/km^2. The population of 11,900 consists of 22 percent of the whole Study Area's 54,000, of which about 5,600 reside in the town. The economy is the most highly diversified, upheld by general commerce, irrigated agriculture, livestock, bee-keeping, etc. The people living there are also very diversified with Tugen being the majority.

Infrastructure is the most facilitated in the Study Area though mostly restricted in and around the town. These are Nakuru – Kapedo main tarmac road, telephone, electricity, schools and health facilities. Government offices and two NGO offices are located in the Marigat town, covering not only the Marigat division but also, to a lesser extent, other divisions in some cases. The communities in this cluster have, therefore, been exposing to considerable outside influence and is more inclined to adopt change.

3.6.2 Cluster B (Eldume, Ngambo)

This cluster is located on the Floor of the Rift Valley, being next to Marigat location, which occupies a lowest part of the Study Area. The population is about 11,300 (21 percent), and the density is 76 persons/km^2 that is the highest one over the Study Area. Most people are Il Chamus but few Tugen can be found in Eldume location. Though nomadic life style used to be widely practiced in this area, the communities are nowadays more or less sedentary with population being increased.

Livestock is still dominant component of the communities' economy but farming activities have been expanding thanks to the flat land often composed of very fertile clay loamy soil. An indigenous irrigation, called Eldume Irrigation, has been practiced since 1984, taking water from Molo River. Agriculture can be regarded as the most important supplemental livelihood together with bee-keeping, fishing, and craft making.

3.6.3 Cluster C (Salabani)

Baringo Lake rears more than 100 hippopotamuses and is a world famous ornithological sanctuary with more than 480 species. This cluster is located at western part of the Baringo Lake, and is best suited of seeing the wildlife thanks to the accessibility from the Nakuru – Kapedo tarmac road to the lakeshore. There are tens of thousands visitors annually (30,332 in 1998) who are not only Kenyan nationals but also foreigners consisting of about 30 percent. Kampi ya Samaki has thus become a center having about 3,000 population, the 2nd biggest town in the Study Area (total population of the cluster is about 7,400 with population density of 34).

The tourism potential has, in turn, attracted many local people. The people who once used to dominate this area was Il Chamus, but now are very diversified as one can see Tugen, Il Chamus, Pokot, Turukana, and even Ruo who are born in fisherman coming from Bictoria Lake area. The attendants of a PCM workshop held there stated this area was a Cosmopolitan. The economy is also highly diversified with tourism, fishing, bee-keeping, craft-making, general commerce, and traditional livestock. Found well around Kamyi ya Samaki are women who are very energetic of making fish fly for selling.

3.6.4 Cluster D (Sandai, Loboi, Kapkuikui)

This cluster occupies a southern part of the Study Area with its 5,200 population (population density is 54). The communities are very homogeneous, consisted of Tugen, largely sedentary and well exposed to education and other modernizing factors. Young generation can speak English very fluently. Economy is based on irrigated agriculture, livestock, bee-keeping, craft making (though limited), and tourism, and some parts have fair access to telephone, electricity, and a tarmac road leading to the Bogoria Lake.

Though higher lands of the cluster are dominated by stone outcroppings with loamy soil, the soils become loam-clay and then clay in swampy areas as the land slopes down. Thanks to the fertile lands, and also streams and Waseges River, the three locations in this cluster have all indigenous irrigation, one of which, Sandai irrigation system, started in as early as 1930s. With the income from the irrigated agriculture and also livestock for selling milk, this cluster enjoys relatively high living standard. Also, tourists going to Baringo Lake can find very active women who are selling honey.

3.6.5 Cluster E (Kimalel)

As driving down from Kabarnet to the Study Area, the first location to meet is Kimalel that is categorized as cluster E. The land is hilly and the soil is often so shallow that soil erosion takes place very easily. Stone cropping can be found over the cluster, and very severe gully erosions are already taking place. This sort of land hinders the people from practicing farming, but some people have already introduced some soil conservation technique with a form of contour ditch. Finger millet, a drought tolerant crop, can be well found in this area because the people do not like taking heavy risks of no harvesting.

The population of this cluster is about 6,800, giving a density of 71 persons/km^2. Communities are very homogenous, composed of Tugen, and actively participating in such modern institutions as churches, schools and other government agencies. Their economy is based on goats, cattle and rainfed farming with the first one being the mainstay. Goat can well survive under such agro-ecological condition, and people sell castrated goat, known as Koriema Goat, at a place beside the tarmac road bisecting the cluster.

3.6.6 Cluster F (Mukutani, Kiserian)

This cluster sits in the eastern part of the Study Area, covering a total of 372 km^2 which is about 30 percent of the whole Study Area. The population is about 8,400, giving the lowest population density of 23 persons/km^2. The people who live there are mostly Il Chamus, and sedentary and semi-sedentary settlement tendencies co-exist. This area is of the most traditional pastoralism, although rainfed farming and irrigation have been gaining momentum.

The only road to Marigat town is poor, and there is no telephones or electricity. Other social infrastructure such as health and education facilities is not well developed either. The remoteness of the cluster and high loyalty to their traditional cultural values, especially in Mukutani, have lead to the lowest participation in education, particularly girl-child education. The people still cling strongly to some traditional values and practices such as early marriage, female initiation, and polygamy.

3.6.7 Cluster G (Arabal)

This cluster is located on a hilly area in Mukutani division. The land varies from stone red-brown soils on hills and red soils with good water retention, giving a possibility of rainfed farming, on the land sloping down to lower areas. Though Mukutani are mostly inhibited by Il Chamus, the people in this cluster are Tugen who migrated from nearby Nakuru. The population is about 3,300 (six percent of the Study Area's total population) with a population density of a mere 30 persons/km^2. Their settlement pattern is mainly sedentary although semi-sedentary movement does occur.

Economy is based on livestock (cattle, goats, sheep) as their mainstay and, to a lesser

extent, rainfed agriculture. Some people also do bee-keeping. Most incomes derive from selling livestock, milk, honey, and poorer people do casual labor for richer people. Traditional attitudes and practices such as girl initiation rites are still prevalent and education participation is relatively low. Also, education and other social facilities are relatively few and accessibility to Marigat town is difficult.

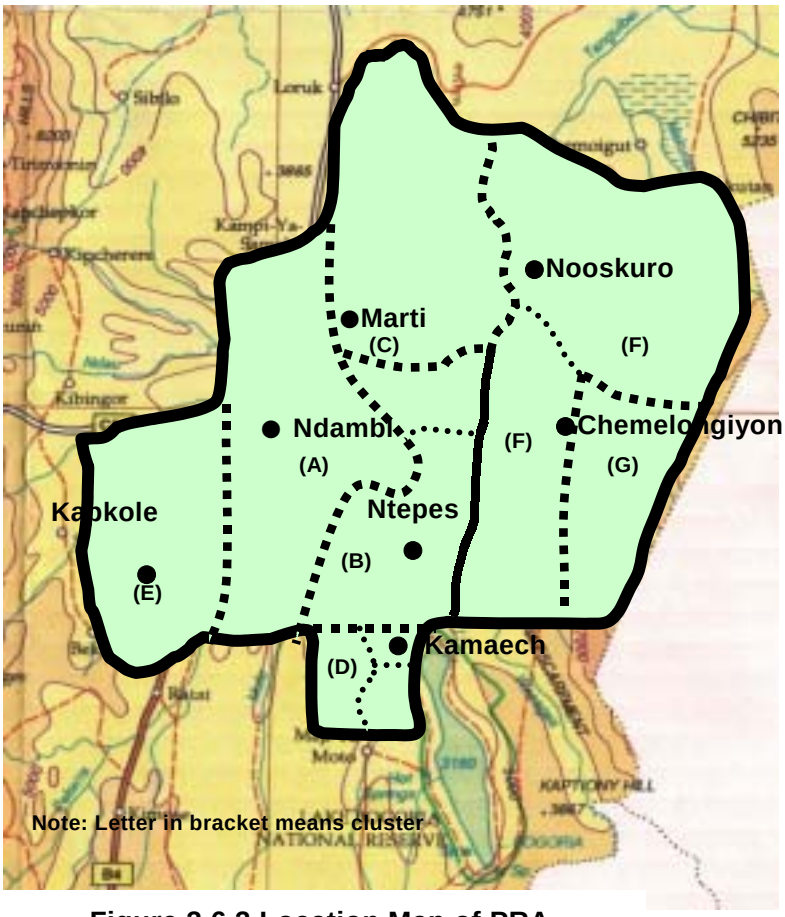


Figure 3.6.3 Location Map of PRA

Table 3.6.2 Summary of PRA Results (1/2)

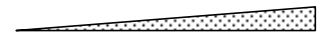
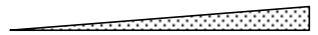
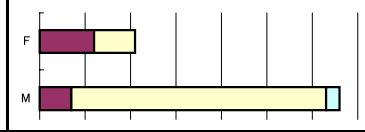
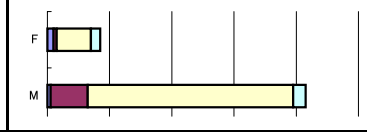
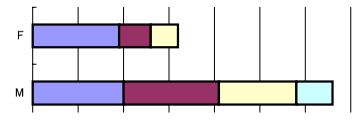
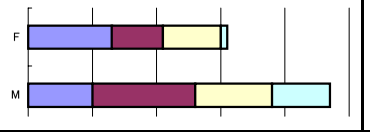
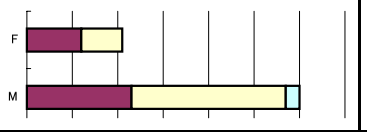
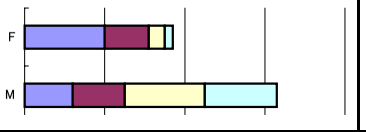
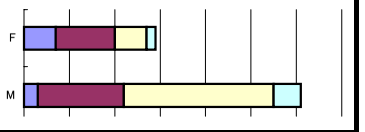
PRA Site	Kapkole Village, Sabor Sub-location	Ndambul Village I Perkerra Sub-location	Marti Village, Meisori Sub-location	Ntepes Village, Ilnga'rua Sub-location	Kamaech Village, Mpechot Sub-location	Noosukuro Village, Rugus Sub-location	Chemorong'ion Village, Arabal Sub-location
Population (Households)	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 Loboi Kapkuikui	Mukutani Kiserian	Arabal
PCM	○		○	○		○	○
Characteristics	Cosmopolitan, Commercial			Swamp, Crop field		Traditional, Pastoral	Livestock, Newly settled
Topography							
Historical Events				1880 People came from Iketayo due to fighting between Ilchamus - Trukana			
	1910 The village came into being					1912 Noosukuro Village established; District HQ at Kiserian by colonists 1915 First Chief 1918 Colonial Govern't moved District HQ from Kiserian to Kabarnett	
			1928 Ilchamus from Samburu settled 1935 Marigat-Kampi ya Samaki road surfaced with murram	1934 Ntepes Village established	1932-39 Komaech Village established; Irrigation / first intake started; bee-keeping started; wild animals	1920 Ilkisim drought 1929 1st circumcision (Ilparemo group) 1930 Second Chief 1935 Mukutani-Tangulbei Road 1938 Ngolongechai drought	1933 Tugen settled at Chemorong'ion
		1954 Irrigation Scheme originated 1956 The first crops (onions) planted	1947 Meisori Village became a Sub-Location 1954 Tugen from Kabartonjo settled	1943 Ngolonchai drought 1948 Eldume Primary School established 1950 Lariseur Rains, a bumper harvest 1951 Primary School moved to Salabani 1952 Perkerra Scheme established	1942-45 Drought; increase of population Second WW; outbreak of measles, malaria, and arthritis 1954-55 Heavy rains; land expansion 1958-60 Loboi Primary School; first iron sheet house; Chief's Office	1952 Kipira drought 1959 Circumcision (Ilmendoti group)	
	1961 Heavy rains 1965 Famine 1980 Village boundaries were marked	1979 Started residing in the village	1965 Severe drought 1972 Kampi ya Samaki Road tarmac; CCF started education and health services 1975 Salabani cattle dip built 1980 Cholera outbreak	1961 Floods 1964 Ngolongo Olkinoi drought 1970 Ilngarua Nursery School established 1973 Nadotolit drought	1961-65 Heavy rains; drought; Dysentery outbreak 1976-77 Sandai Nursery School; heavy rains blocked the canal; AIC Sandai	1969 Circumcision (Ilkiapu group) 1973 Ngolongeldama drought associated with an eclipse of the sun	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
	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	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	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 1992 Salabani became a Location	1983 Catholic Church established 1984 Ngolong Ekilo drought; Ilngarua Secondary School 1985 Eldume Irrigation Scheme established 1987 Tikirich Bridge constructed; Ntepes Women Group established 1988 Good harvest	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 1987-92 Permanent structure for Sandai Pri. School; planting trees / soil conservation campaign; Catholic church; a road to Mpechot Village; Bamako Organization came	1984 Ngolongee Samoli drought 1986 Good harvest; AIC Church built; Noosukuro Primary School started 1987 Good harvest; Noosukuro Women Group started	1981 Circumcision (Kaplelach 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 Intake for a piped drinking water system	1994 Ndambul Water Project initiated	1994 World Vision started education sponsorship program 1996 Salabani Secondary School started 1997 Cholera and Meningitis outbreak	1994 Circumcision (Ilmeseyaki group) 1995 Yellow Fever occurrence 1997-8 El-Nino rains; good harvest; Cholera outbreak	1993-98 World Vision came; Sandai Water Users Association; Pipes for domestic water supply; El-Nino rains		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 El-Nino rains caused havoc 1999 The piped drinking water system extended to several water points	1998 El-Nino period; bumper harvest and good agricultural product sales	1998 Londani Women Group formed 1999 Cholera outbreak	1998 New Apostolic Church established		1998 Mukutani Division and Divisional HQ established	1998 Chemorong'ion Pri. School; World Vision came; Cholera outbreak; Circumcision (Kipnyigen group) 1999 Army worms destroy crops

Table 3.6.2 Summary of PRA Results (2/2)

PRA Site	Kapkole Village, Sabor Sub-location	Ndambul Village I Perkerra Sub-location	Marti Village, Meisori Sub-location	Ntepes Village, Ilnga'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							
Poverty Profile Rich	* 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
Middle	* 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
Poor	* 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 * own no shamba, no plot * 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
Poorest of the Poor	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
Poverty Profile of female-headed and male-headed households (Poorest/Poor/Middle/Rich)							
Benchmark Years	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'olonge 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
Food Security Trend For how many months during the year was finding enough food to feed the family serious problem?	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)
Dev't Indicators Trend	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	↑ ↓ ↑ → →	↑ → ↓ ↓ ↓	– ↓ → → →	– ↑ → ↓ ↓	↓ ↑ ↑ ↑ ↑		↑ ↓ → → →

3.7 Socio-Cultural Backgrounds and Livelihood System

The ASAL, where the Study Area situates, is characterized with severe and unstable natural environment. Local people therefore, throughout their long history of habitation, developed a supporting social system that is both flexible and resilient. People are leading a nomadic life not because of poverty but in order to survive, and as a result there exist various surviving strategies. This section examines the socio-cultural background as well as their livelihood system.

3.7.1 Socio-Cultural Backgrounds

There are some social rules and knowledge in the Study Area that significantly differ from that of the societies with agricultural settlements:

1. Difficult to grasp an average regional characteristic,
2. Risk hedge and resource hunting,
3. Lives based on survival strategies not on increasing production,
4. Agriculture practices similar to hunting traps,
5. Norms with loose time framework,
6. Conflicts between external (modern) social system and the traditional social system, and
7. Weak structural and functional linkages between external and internal social systems.

1) Difficult to Grasp an Average Regional Characteristic

Typical case is the precipitation measurement. There are several places where one side of the area being dry area with zero precipitation, when the other side within several kilometers hold precipitation sufficient for farming. Such climatic differences and its time instability throughout the year affect people's lives to a great extent. Their living patterns, social patterns, and action patterns are thus emerged and influenced by such climatic conditions and most of the aspects of people's lives are constructed based on the concept of risk management in order to adjust to these continuous risks.

2) Risk Hedge and Resource Hunting

In relation to above-mentioned instability, risk hedge and resource hunting feature the ASAL society. In contrast to the society with agricultural settlement, which maximizes resource utility with its efficient use, the practices in ASAL gives some opposite characteristics. In other words, as precipitation varies in time and in space, people have adapted to the environment by adopting the most suitable occupational pattern – nomadism.

Similarly in their social system regarding polygamy, it is understandable if put within this

framework of "risk dispersion". It is the similar adaptation process in order to maximize the utility of scattered resource when each wife resides in different places such as in mountainous area or in the plains. In settled agricultural society, the society development is based on the use of intensive labour power achieved from the family members. However, the ASAL people created their development bases and ensured their living conditions by dispersing their family members. This therefore suggests the ways to make risk hedge as well as simultaneously do hunting their resources.

In this framework, in the Sandai area, until recently there had been shifting cultivation with shifting irrigation that were practiced by women, and similarly in the Kimarel area, there have been shifting cultivation. Though it does not mean that livestock farming has lower value or necessity, it is highly risky when production yield is low or none due to unstable precipitation. Thus the way people harvest products, whenever there is a blessing rain, could be considered as their way of agricultural practices.

This is supported by the fact that even in the irrigated agricultural area Sandai, the Waseges river which is the water source and seasonal river dries up for several month. In the dry season, people wait on a line for several hours to collect muddy water from the riverbed. Lack of precipitation around the watershed prohibits not only irrigation but also the cultivation itself. Therefore, too much investment on agriculture entails the excessive risks. It is therefore impossible to ensure people's lives without nomadism in the ASAL area.

3) Lives Based on Survival Strategies not on Increasing Production

People view the number of cattle such as cows and goats as a degree to measure security of their lives, not as commercial resource that will bring them financial profit. Their lives including living patterns, social, economic, and political patterns are all based on this understanding. This is particularly reflected in their land holding patterns. It is mainly the Tugen tribe and the Il Chamus tribe that live in the two districts of Baringo, and they each have their own communal land. Most of the land is managed under this communal possession although in some parts of the area private ownership is promoted by the Government. This community ownership concept differs from that of modern laws. When the modern property right or use right is exclusive and monopolistic, this communal land holds the opposite concept of "possession of non-possession".

For example, even though one claims a particular area to be his/her own property and it is highly exclusive, if there is no precipitation it means that (s)he owns a useless land, which is less significant to his/her survival. In such area, people with cattle are welcome to enter under the reciprocal system, which function as a surviving strategy. This can be seen from the fact that even to the Pokot tribe, who live next to these two divisions and who are threatening Il Chamus tribe's reserved area for several years, the land is open to the outsiders.

This reciprocal property rights or land ownership that is opposite to the exclusive private one signifies the existence of the land as COMMONS among the people. This commons includes the reserved, communal and protected forest area where, in the emergent situation such as in severe drought, it would be opened to people as in the case of the 1999-2000 drought. These lands are seen also in Il Chamus area's Mukutani location as well as in Tugen area's Arabal location. These are the area used as an ultimate situation and usually entry is prohibited.

From drought dealing purposes, this area is understood as a reserved area also open to people from other areas, and its usage right is not limited only to the people under its administrative unit. In other words, people have a social supporting system at the regional level that deal with shocks caused by routinely arriving natural disasters, such as drought. This possession of non-possession can be seen as an alternative resource management strategy, which avoids exclusivity and monopoly.

Although Tugen tribe in the Arabal location had been in the past entering the Tanglebey in Pokot area as their nomadic land, since the 1984 severe drought, Pokot tribe has been refusing Tugen tribe despite the fact that both of them belong to the same ethnic group of Kalenjine. Therefore, in the changing nomadic systems, Arabal tribes cannot correspond to the outcomes derived from drought only with their communal reserved area, thus decreasing their survival strength (interview note from the hearing with Arabal tribal people).

4) Agriculture Practices Similar to Hunting Traps

The fourth feature is the different meaning of agriculture in the ASAL region. In the Regus area, there are several primitive irrigated area utilizing seasonal rivers. This cultivation had been attempted since 1983, and if there was sufficient precipitation or enough river water, there were some agricultural products. However, it was not assured and was totally dependent on the rainfalls. There also were some farmlands that were abandoned due to the changes of current in the Mukutani River, making it difficult for people to secure an intake. The irrigated farmland near the Lekilicha pan in the Regus region was thus prepared for such occasions when the harvesting was difficult1.

Agriculture under the ASAL environment is similar to a hunting trap. People are waiting for a rainfall and maximize the usage once it rains, but at the same time have another surviving strategy that does not require precipitation. This has been practiced through communal labours. The theory stating that through the transition from hunting and gathering to the human settlement, agriculture emerged, does not apply to here in Rugus in the Mukutani location. This irrigation agriculture here in Il Chamus area that is similar to

[1] The Team was given an explanation from the government officers that there is no such tradition in Il Chamus of cooperative labour, but there was a different reality. Nomadism is practiced in scattered places and in a distant area from the habitation, giving a wrong impression of non-existence of cooperative labour, but it is not necessarily so.

hunting patterns has a history as long as it was introduced in the 19th century travel writings.

However, the possibility was lower in the areas where there was no permanent river, which ensured the stabilization of unstable lives. Therefore, a sexual division of labour bore as men engaged in cattle raising through nomadism, and women engaged in labours required near the habitation, such as drawing water. This division of labour is also seen in the shifting cultivation area of Kapkune in Kimarel location, and through this people have created some network for their survival.

In ASAL people's lives that are based on surviving strategies, resources are used not for the aim of production, but basically for everyday life purposes. Thus as seen in the property rights pattern, it differs from the rules that apply to modern, intensive and production oriented agriculture.

5) Norms with Loose Time Framework

The fifth characteristic is the high mobility of people, and most probably caused by the life instability, the restriction for norms and responsibility for debt is understood in a loose time framework. For example, a cooperative labour called Kibakenge (similar to Japanese Yui), is done by whoever has time and there is no obligation for the closest neighbors. This however does not mean that neighbors have no cooperation connections but still have a spirit of community even without participation.

Also, people are not excluded even if they have not participated in the cooperative labour. Therefore, the low payment rate of the cost-sharing within certain time limitation seen in Sandai and other areas on the course of the verification projects, cannot be exclusively explained by the breakdown or immaturity of the community caused by aid dependency. Rather, it should be seen as such that the scale of external funds was composedly understood as to whom it belongs. Decision-makings for a project does not limit itself to the decisions regarding its final outcomes, but also for its holistic contents including its scale, speed, threshold, and methods.

From the tableland in the Nbechot situating in upper Sandai plains, people takes two hours round trip to come down for farming reasons. Unlike their resident, people move their agricultural land to that of under better conditions, thus the farms are scattered in five to six places. This implies the background of their life patterns under shifting cultivation, featuring people-dependant community rather than land-dependent community. Thus there are sometimes gaps among the administrative unit, people's community unit, and also the agricultural land unit.

In the natural environment that is disperse and divisive, the rules among people do not require haste balancing of reciprocity within the framework of short time period, or within

small land boundaries. In the life instability of ASAL communities, merry-go-round scheme (a fixed deposit), which is common in the foothills area of Mount Kenya where there is a lot of rain, does not function. It should be understood that under the unstable circumstances, payment promises are not feasible, thus it is a problem of reality, not the one of ethic.

6) Conflicts between External (modern) Social System and the Traditional Social System

The sixth characteristic is the conflicts between the external and the traditional social system. The life pattern, which had been historically influenced under the ASAL environment, is currently going through a great change. The ASAL life pattern had been adopting its survival strategy, which uses wider space with people's mobility. The space has been gradually shrinking since the start of plantation practices in one hundred years ago, but it has been increasing its speed for the last 10 - 20 years. The reasons behind this is from the disclosure of nomadic land by Northern Pokot tribe, and the introduction of property rights that is scaling down the size of the communal land.

This sizing down of nomadic area is causing several problems in the area. It is limiting the increase of cattle number for nomadic purposes or the overuse of resources beyond the area's carrying capacity, both of which are reducing the flexibility of people's survival strategies. Moreover, tensions among the tribes in the region are increasing in order to stop this pressure for survival and development to escape outside.

This shrinking of the space suggests the decrease in the effectiveness of people's survival strategies and the limitation of their development possibilities. In order to overcome these limitations, there are some searches for ways such as stabilization and promotion of agricultural bases including the introduction of irrigated agriculture or an expansion of labour opportunities outside the region. However, these modern practices focus on the intensive investment for their output, which opposes the ASAL rules where survival strategies are the core method. Thus the adjustment of traditional social system to the modern methods and rules seems quite difficult.

For example, the cattle number signifies the wealth for nomads, and in order to maintain this wealth, certain increase in labour input is required. There are equal opportunities for each member but the result depends on the effort the each put. However if the opportunities are equalized in the artificial reserved pastureland, the more cattle you have the more you benefit. Thus the equality in opportunities becomes proportional to the number of cattle one can hold.

The wealth disparity and the survival possibility differences between those in rich soil and those in less fertile soil used to be balanced due to the cattle migration (and also by polygamy), but if the migration area shrinks, this disparity would remain unchanged. The

same principle, which gave equal opportunity, would function in an opposite way in the fixed spatial areas. Baringo therefore locates in between such an unstable area.

7) Weak Structural and Functional Linkages between External and Internal Social Systems

In relation, the seventh characteristic is the weakness in the linkages of the structural functioning between the external and the internal structural functions (this is the structural problem equally applicable to other parts of Kenya). There are both administrative and economic systems in the external system that support regional efforts, but here, particular attention is paid to its economic system, especially to the financial system as well as tax systems.

To summarize, Kenyan financial system does not directly benefit the Kenyan public, and it does not understand the public monetary flow. It is a contrast to the Japanese post office system, which has about 12,000 branches (equivalent to the number of villages and cities at the end of Meiji period, before the amendment of local autonomy law, and 12,000 agricultural extension officers in the post war period) and its total deposit amounting to several hundred billion yen (if contrast not with total amount but with account numbers and amount of money in each account, the difference is obvious). Also, in the line of abolishing the levying of poll tax since independence, the tax system limit taxation only to the commercial farms above 100 hectares, seeing farmers under 100 hectares as subsistence farmers.

The livestock of the nomads thus holds less value as a property compare to the money stocks that is not directly influenced by the droughts. Also the fact that people have no legal obligation for paying tax results in the lack of income sources which ultimately leads to the delay of social basis preparations. In other words, holding livestock has high risks in terms of its vulnerability to drought, but it is also beneficial as its speed of recovery and increase in numbers is quite fast. However too many repetition of drought gives limitation to the long-term development and weakens continuity of wealth accumulation. This is the structural problem prohibiting the regional development in the ASAL area.

The risks from drought adhere to living in ASAL can be mitigated by dispersing them into both nomadism and money deposition. However, nomads are refused to create their own account, and this exclusion, including the exemption of taxation, causes vulnerability of their life basis and also of their social institutions basis. With very little tax collection, the community has to transform without having their own decision-making rights for their own future.

When seen from the national economic point of view, this is understood as a system that does not link Kenyan economy as a whole to the most of the accumulated assets (livestock) that belong to the nomads. In other words, this lack of linkage between the governmental

financial basis and the economy of the public majority impoverishes national and regional level financial situations, and decreases the incentive or necessity of government involvement to the local and regional development initiatives. There is no reasoning for administrative services if economic development of the public in the form of tax increase is not reflected to the increase in the finances in national/regional levels.

This also means that even if there was an effect on the one side that was achieved from foreign aid, there is no structure that will link this outcome to the improvement of governmental financial conditions. If the social structure continuously cannot fill the gap between public wealth and public economy, there is low possibility of foreign aid to contribute to the future improvement of Kenyan public welfare.

When look at the revenues and expenditure relationship of the people, sheep and goats are sold according to the expense necessity, the most popular necessity being the sickness. People often strongly resist selling their cattle, but from the cash requirement for hospitals and medicines, people sell their sheep and goats. This also means that the payment is done at the very last moment.

People keep their money at home since they have no account in the bank or in the post offices. This is from the high cost of needed for opening and maintaining an account and that most branches are in distanced from home. Banks in Kenya was created for the white colonists or administration officers not aiming for the Kenyan public. And even after the independence this continues, excluding small depositors. Post offices are also not functioning as micro finance

Banks

1. No account less than Ksh 5000 is accepted but as monthly deposit commission is ksh 250, thus in order to open an ordinary deposit account, the minimum deposit of Ksh 10,000 is required (in the case of commercial bank)
2. With Standard Berkley Bank, minimum deposit of Ksh 50,000 is required (monthly commission is Ksh 350).
3. Withdrawal commission is Ksh 100 at the counter, Ksh 10 at ATM. Depositor protection is up to Ksh 100,000.
4. Interest rate is about 5% (Government announced inflation rate 10%)

* There are no banks in Marigat and Mukutani districts. There is in Kabarnet.

* The Dip Committee of Arabal has a bank account. It is a joint account requiring three signatures of the registered members, and all three of them have to be present to withdraw and the money and to change the holder names. This holder changes requires a letter from the district and each three people's pictures. Developing of pictures takes days. As there is many complicated procedures in the bank, even if people arrive at Arabal by 10am, they will stay until 2pm. It will cost them Ksh 1200 since return pick up bus ticket for one person cost Ksh 400. If include photographs and eating cost, they will have spent the cash equivalent to that of two goats sold. Thus 5% of deposit Ksh 30,000 under the name of Dip Committee. This shows that the account possession for small amount depositor to be quite difficult.

Post banks

1. Less than Ksh 500 deposit is not acceptable for the account opening.
2. Withdrawal is less than Ksh 5000, NOTICE for manager is necessary of more than Ksh 5000 withdrawal but this is only up to Ksh 10,000. The government will protect up to Ksh 2.5 million.
3. Commission is Ksh 50/month, withdrawal commission cost Ksh 10 every time.
4. Interest rate is about 3% (Government announced inflation rate 10%)

* In both Marigat and Mukutani rural districts, post office is only in Marigat town. It is inconvenient and even in the cattle auction places where people's stocks are converted into cash; there is no temporal counter. Or there is no attempt to rotate the deposit or withdrawal counters either. However since last year an NGO started such attempt in Kabarnet and it is highly hopeful.

* The real interest of post banks considering inflation is worse than the banks. In terms of depositor's incentive, this means there is no merit in putting money in the bank apart from the security not to carry around cash. If there is increase in subsidy system for secured loan, interest rate for deposit may increase, but if eliminate only by account conditions, there is no hope for increase in the number of depositors.

preparators.

Current two financial institution systems situate the nomads who are the majority of the population, out of their framework. This implies that these people are also excluded from the system of various development mechanisms. Comparing with the Bangladeshi Grameen Bank, which shows that the creation of economic development basis is dependent on the accumulation of small depositors, Kenyan economy's slow growth can be seen as a result of this exclusion of wealth held by the majority of the population. Also, the Kenyan government's budget shortage signifies the structural problems that does not reflect public wealth reality, and the result from the preference of the political administration

With such understandings, it is the national system and its lack of ability throughout its development policies, which caused the small-scale nomads to be rather passive recipients of the public projects. Thus in the long run, it is necessary to adopt an empowerment (entitlement) strategies introducing micro finance or local tax system that situate the majority of population at the center of social development mechanism. This at the same time requires the implementation of people based social development.

3.7.2 Livelihood and Production Systems in ASAL

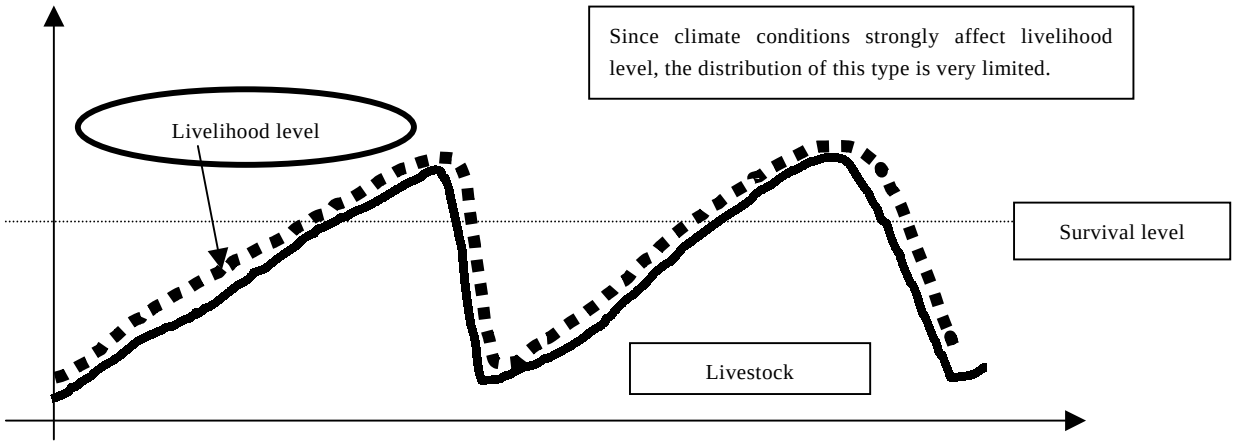
In ASAL, there are two types of categories in terms of livelihood and production systems. The first category of livelihood system represents full-time engagement of one activity such as nomadism (hereinafter referred to as "System I"). The System I can include the full-time agriculture engaging livelihood, but this farming type is very limited in ASAL because it cannot exist without irrigation facilities such as national farms in Perkerra. The second category – engagement of several activities for livelihood and production (hereinafter referred to as "System II") – is sub classified into two types as well, livestock with agricultural activity (LA) and agricultural activity with livestock (AL). In LA type, livestock is major sustenance for family and people may do agriculture as secondary activity, and AL type vice versa. However, the notable feature of ASAL is that peoples' livelihoods rest on cattle and goats in the end. In addition, it needs to point out that cattle are weaker than goats in case of drought, and cattle require either a large grazing area or ample pasture but goats need relatively small areas because they often climb up trees for diet.

The vital issue of the System II is that only one activity cannot be a stable means for people's livelihoods (even for survival). Although the word is 'secondary' activity, livelihoods cannot sustain without it. For instance, people in Salabani where corresponds to AL type have had no agricultural harvests for the last three years because of no rainfall, but they survive with secondary activity, namely livestock raising. Agricultural activities need labour forces and they tend to concentrate in rainy seasons. Nomadism also requires labour forces but animals are dispersed to distant places in the dry seasons. This kind of seasonal labour requirement change brings three patterns into social lives: concentration, dispersion

and cooperative works, and separation of works.

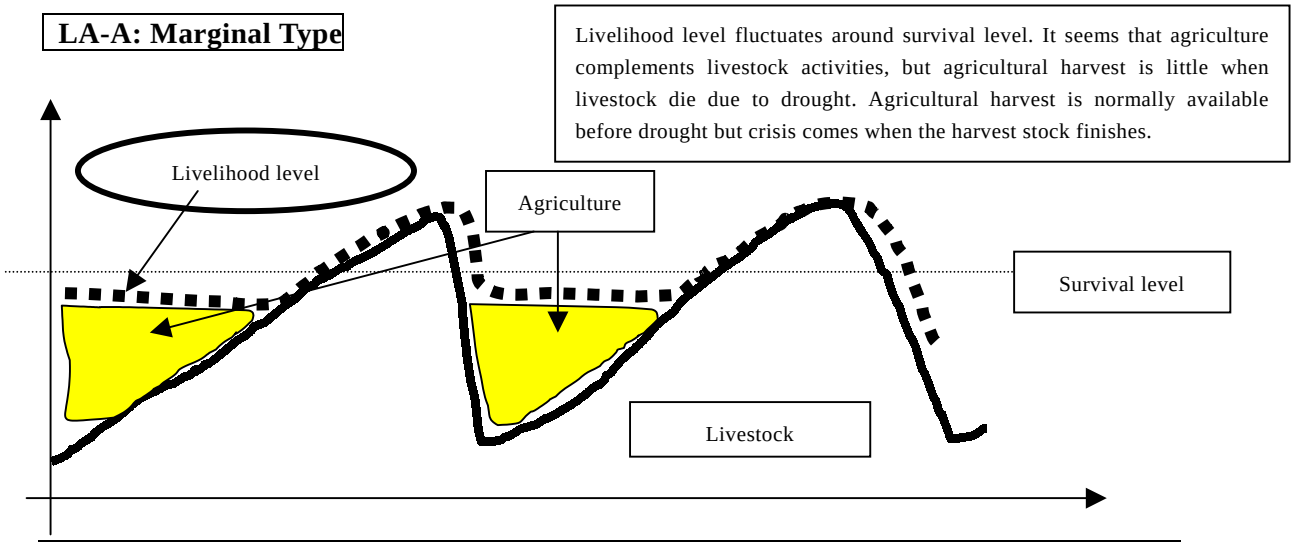
The following figures indicate the living structures of System I (livestock type) and System II (LA type) that can be classified into three sub-types. As for the Sub-type A (LA-A), which can be referred to as Marginal Type, people barely manage to sustain their livelihood level that is close to survival level. The livelihood level of the Sub-type B (LA-B), Hunger Type, is below the survival level. When the total production of agriculture and livestock is not enough to secure peoples' livelihood, hunger begins among the communities. In the Sub-type C (LA-C), surplus from production systems enables to exceed the survival level and it is possible to invest the surplus for the future. Although there are various ways to invest (deposit in financial institutions, purchase of livestock, payment for children's education, investment on agricultural activities or other new enterprises, and so forth), many people in Baringo tend to invest in livestock.

System I (livestock type): Most areas in Arabal and Mukutani



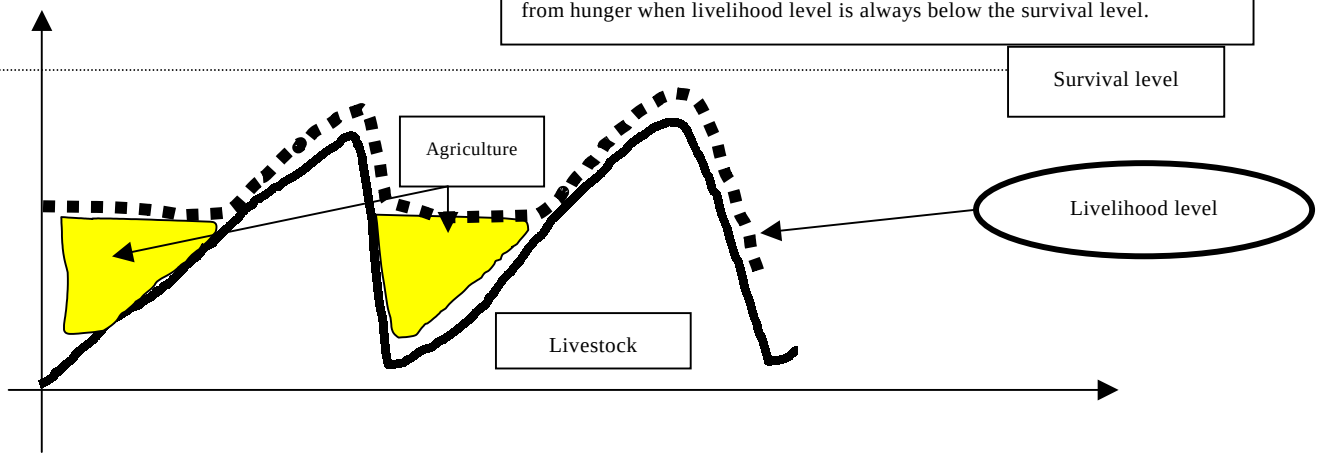
LA type (livestock with agricultural activity): Most areas of Il Chamus (there are some AL types along permanent rivers or seasonal streams which flow almost all the year round)

LA-A: Marginal Type



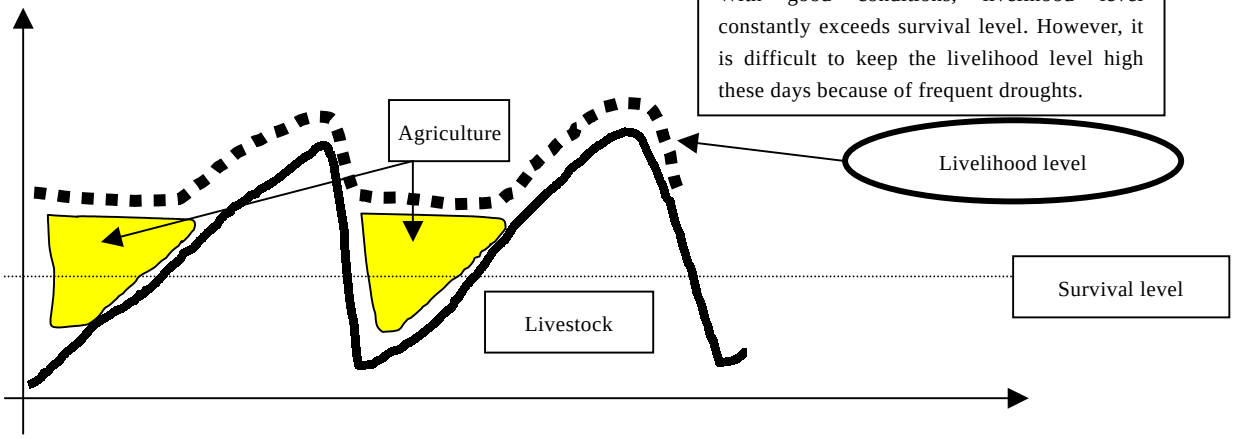
LA-B: Hunger Type

Crisis can happen not only in case of no agricultural harvest but also in case of recovering stages from drought or little agricultural harvest. People suffer from hunger when livelihood level is always below the survival level.



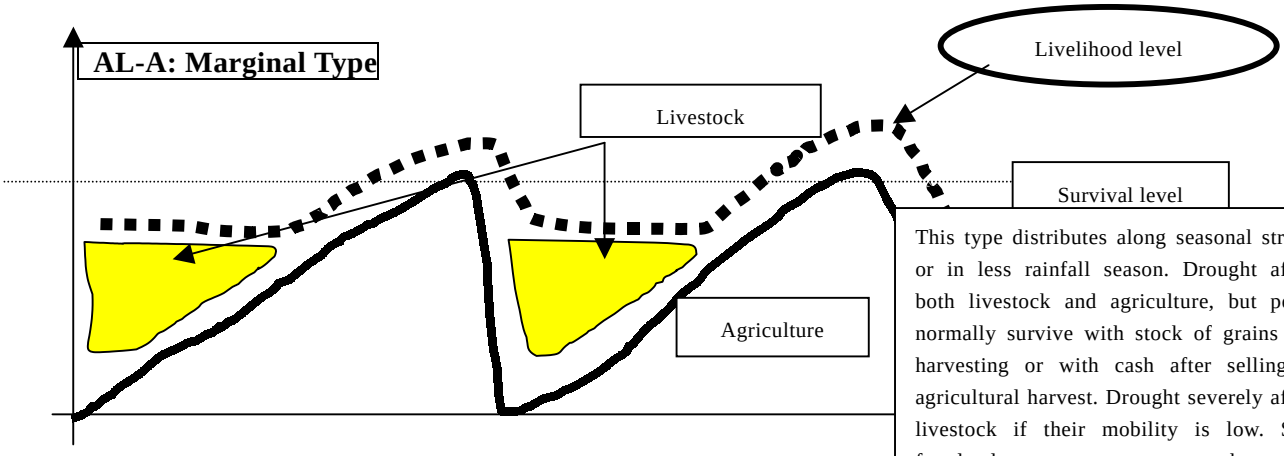
LA-C: Surplus Type

With good conditions, livelihood level constantly exceeds survival level. However, it is difficult to keep the livelihood level high these days because of frequent droughts.

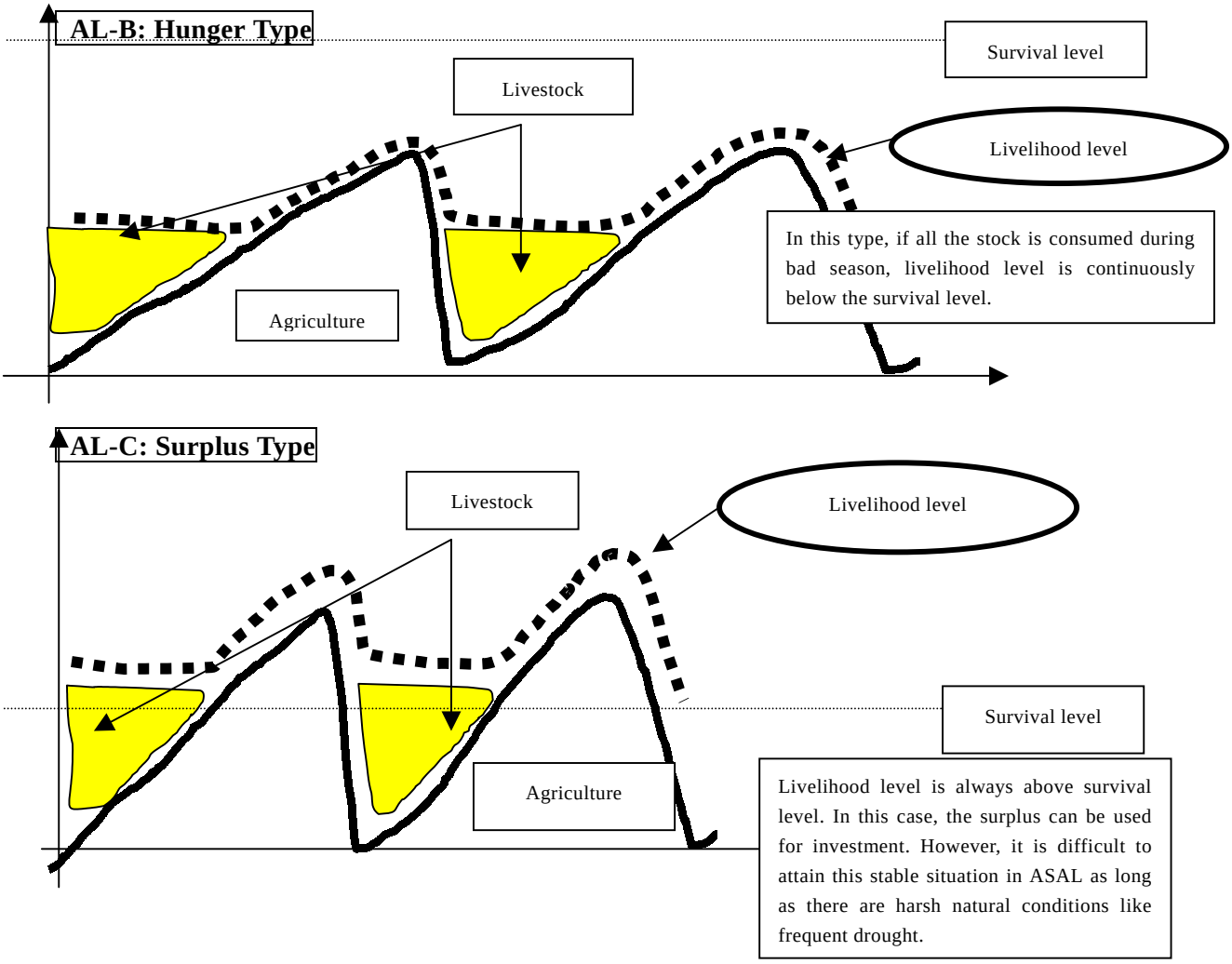


AL type (agricultural activity with livestock): A part of northern Arabal where rainfed agriculture project was conducted, southern Arabal, some areas in Mukutani, areas where Tugen tribes live except Arabal, and Il Chamus areas such as Eldume and Ngambo. Tugen Hill where shifting cultivation prevails is classified in this type but the area sometimes alters into LA type depending upon rainfall.

AL-A: Marginal Type



This type distributes along seasonal streams or in less rainfall season. Drought affects both livestock and agriculture, but people normally survive with stock of grains after harvesting or with cash after selling the agricultural harvest. Drought severely affects livestock if their mobility is low. Since farmlands cannot move, there are possibilities of no agricultural harvest.



The distribution of the above livelihood types is roughly shown below. One important point is that these types change easily by year or places, hence, no stable types. The natural environment of ASAL changes considerably, which makes the people prepare to deal with the worst situation – the way of life based on survival. In conclusion, the theme could be described as to how the Kenyan economy, which lacks the linkage between livestock and money stock, can adapt to these unstable livelihood types. In other words, the key issue to overcome the limitations of social system and of technology such as irrigation system is whether economy system that absorb the shock of drought can be realized and introduced.

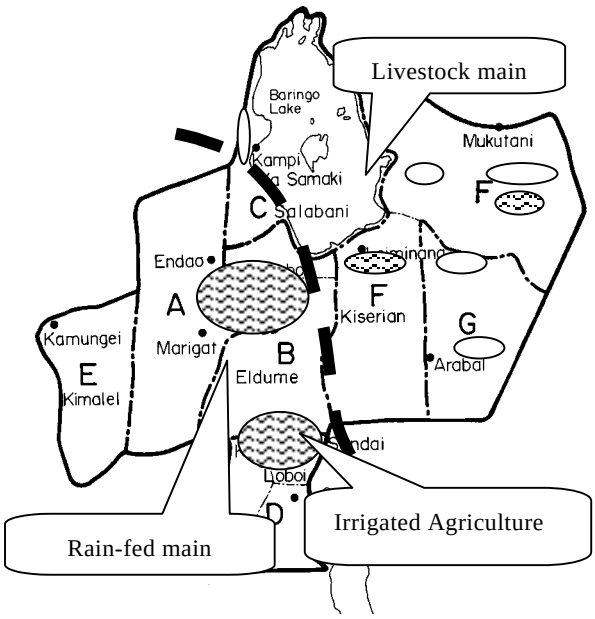


Figure 3.7.1 Livelihood Pattern and its Distribution

3.8 Present Conditions of Projects Implemented by the Related Agencies

There exist so many projects, which have been implemented by the related agencies in the Study Area, and their numbers are 39 projects as shown in the following table, details of which are given in Table 3.8.2. The present situation of these projects could be classified into three categories depending on the present operational conditions; that is, 1) well-operated projects are nine, 2) operated projects with low operational efficiencies are 15, and 3) non-operated projects are 15, respectively:

Table 3.8.1 Present Conditions of Implemented Projects

Projects	Operation and Maintenance Conditions of the Projects and Their Number			
	Well-operated Projects	Operated Projects with Low Efficiency	Non-Operated Projects	Total
1. Agriculture and Reforestation	-	1	4	5
2. Livestock	2	2	1	5
3. Rural Industry and Marketing	1	-	5	6
4. Fisheries		1	1	2
5. Water Supply	2	4	-	6
6. Irrigation Water Supply	1	2	1	4
7. Health and sanitation	3	1	2	6
8. Farmer's Organization	-	1	-	1
9. Training and Education	-	3	1	4
Total	9	15	15	39

Major reasons of the non-operational conditions of the implemented projects could be pointed out as shown below;

- Wrong forecasting of future situations such as decreasing in natural resources
- No cost recovery from beneficiaries due to no project benefits
- Uncompleted project facilities and damaged project facilities by means of natural disaster
- Mismanagement (committee members misused money)
- Inadequate social preparation of the target communities, which is particularly true with regards to BSAAP and FAO projects implemented in the 1980s
- Insufficient incorporation of Donor projects into GOK budgetary processes which led to stagnation of project support activities after donor withdrawal (no transport, vehicle, fuel, field allowance)
- Lack of sufficient preparation of GOK counter-part staff in project planning and management

- Redeployment of project trained staff to areas and assignments not related to the project
- Lingering perception of “project” as belonging to Donor staff. This perception is supported by implementation style adopted by donor agencies eg RAE including naming of projects after the donor eg FAO Project, World Bank Project, RAE Project, World Vision Project etc. Such naming leaves no doubt as to the project's ownership. In addition, use of food for work suggested the beneficiaries were being paid for contributing to the Donor Project.
- In adequate participation and cost sharing in project implementation again reducing sense of ownership by beneficiary community
- Conspicuous display of symbols of opulence eg BSAAP fleet of vehicles which was in sharp contrast with resources available at the GOK and community level. This psychological impaired the courage of community and GOK’s staff since they lacked that level of resources.
- Inflexible time frames for project planning and implementation. This implies strict adherence to a timetable agreed with the donor home office and permits little room for protracted negotiation with the target community.
- Choice of a technology inappropriate to the capability of the local community or local GOK support staff.

Table 3.8.2 Present Conditions of Implemented Projects

Implemented Schedme/Project	Implementation Agencies/Donors	Present Conditions/Functioning or Not Functioning	Reasons Why No Functioning	Relation with the Study *
1. Agriculture and Reforestation				
Kimao Dam	KVDA	Under preparation for watershed management, No distribution system	Budget is not enough to complete the construction. Soil/water conservation and introduction of agroforestry are required.	○
BSAPP Supply of Water for Human & Livestock Agricultural Demonstration	WB	Not self-sustaining, Most project facilities are not functioning	Facilities were not well managed. Top down approach was taken and community was not involved from the planning stage.	○
Demonstration on Agroforestry (Yatoi Sub-location, Marigat)	MOA	No operation without any crops	Rainwater was not collected properly and not many people were interested.	○
Fuelwood Afforestration and Extension in Baringo	FAO/GOK	Not functioning	No participatory approach was taken and project ownership did not belong to the community by and large.	○
Kenya Acacia Project	KEFRI	Screening of Acacia trees suited to ASAL area	Activities just started. Preparation of seedlings and their distribution are necessary.	○
2. Livestock				
Auction Yard (Marigat)	Conty Council	Looks good	-	○
Marigat/Koriema Slaughter House	County Council	Well functioning but lack of water	-	○
Dips: Marigat, Sandai, Endou, Endao, Maoi(good) Mukutani, Sabor, Salabani (not so good)	GOK, Donors, Community	Some not functioning well	Dip committee was not strong enough to operate activities and to maintain the facility. Farmers did not pay for dipping. Shortage of water.	○
RAE	IDRC, DANIDA, Rockefeller	Functioning	-	△
Marigat Division Drug Users Association	Community	Functioning at low level	Poor management, Membership limits to 50 members. Lack of training and linkage with local chemists.	△
3. Rural Industry and Marketing				
Kenya Wine Agency Limited	Parastatal	Closed at present, but is planning to open again	Tourists' demand decreased→ price became low→farmers did not want to their products	△
Kibingor honey refinery	BSAAP(WB)/CIDA	Closed	Mismanagement (committee members misused money). The group was too big and organization management became difficult.	△
Rose Planting in Perkerra Irrigation Scheme, 1997～pilot	NIB	Roses still planted, but not working 25 mil. Ksh	Not enough finance liable to community.	×
Kimalel Depot Project	NCPB/Italy	Functioning	-	×
Honey Refinery Maoi Center	CCF	Operation seems delayed	Building construction not yet completed. Honey harvest was not enough due to drought.	○
Marigat Market Building	BCC	Not functioning	No customers came. Building is now used for another purpose.	○

Implemented Schedme/Project	Implementation Agencies/Donors	Present Conditions/Functioning or Not Functioning	Reasons Why No Functioning	Relation with the Study *
4. Fisheries				
Fish factory at Kampi Ya Samaki	Cooperative	Not operated	Fish stock in Lake Baringo reduced due to over-fishing.	△
Lake Baringo Fishermen's Cooperative Society	Community	No activity	Fish production decreased. No financial support. Management committee is not strong.	△
5. Water Supply				
Kampi ya Samaki Water Supply	MOW	Functioning, but no chlorination	No budget to buy chlorine. Community was nor organized.	○
Maoi Bore Hole	MOW	Well function	-	△
Sabor Water Supply	MOW	No water treatment, but water quality is good	Facility was not properly managed by community due to less involvement from the planning stage.	△
Pat Kawanin Water Supply	MOW	No water treatment, but water quality is good	Facility was not properly managed by community due to less involvement from the planning stage.	△
Arabal Water Supply	MOW	Intake weir was washed away, presently functioning by using pipe intake	Day-to-day maintenance was not properly done by the community.	△
BSAAP Pan Development	WB	Well functioning but water quality is bad	Pan belongs to individual, and neighboring people have to scoop a bucket of soil after fetching water. Siltation was the problem.	○
6. Irrigation Water Supply				
Chemeron Irrigation Water Supply Scheme	KVDA	Under utilization, but storage capacity is reduced by siltation	Poor management by the community due to less participation. Reforestation and soil/water conservation is required.	×
Pekerra Irrigation Project	NIB	Decrease of yield, water management has problems, scheme itself has problem	Water management was not properly planned. No participation in facility management from farmers.	○
Repair of Intake in Sandai	ALRMP/WB, CBOs	Well functioning	Lack of resource management and coordination of water distribution.	○
Endao Irrigation Scheme	CBOs and GOK	No more scheme	River sedimentation had accumulated and intake facilities were destroyed.	×
7. Health and Sanitation				
Marigat Health Center	MOH	Well function	-	○
Kiserian Dispensary	AIC	Well function	-	○
Mukutani Dispensary	FGCK/GOK	Well function	-	○
Vector Borne Diseases Research Laboratory	MOH, KEMRI	Uncompleted (abundant)	Lack of financial and technical support	○
Community-Based Nutrition Center	MOCSS/DANIDA	Little function, only community level	Lack of financial and technical support	
Rain Water Collecting Tank (Marigat H. C)	MOH	Uncompleted	Lack of financial and technical support.	○
8. Farmers' Organization				
Marigat Farmers' Cooperative Society (NIB tenants only)	Community	Functioning, but very weak	Committee had no capability to manage organization due to lack of training. Organization was too big.	△

Implemented Schedme/Project	Implementation Agencies/Donors	Present Conditions/Functioning or Not Functioning	Reasons Why No Functioning	Relation with the Study *
9. Training and Education				
Marigat Youth Polytechnic	Community	Under utilized, poorly equipped	Low enrollment of students since provided courses did not meet the demand of community. Lack of external support. Committee was not strong.	○
Nursery School in Kampi Turkana	Community	Closed	No children came since they have to work or parents couldn't afford to pay.	○
Adult Education Programme	MOCSS/Dept. of Adult Education	Low enrolment, not effective, poorly supervised	Lack of interest of the community. Insufficient materials and no financial support. Staffs are poorly equipped.	○
Kiserian Sec. School Rabai Primary School	MOE/Community	Declining enrollment Poor performance	High education fee and parents cannot afford. Boarding facility is not well equipped due to lack of financial support.	○

Note: * ○: Closely related △: Related ×: Not so related

CHAPTER 4

Present Resource Assessment and Forthcoming Scenario

CHAPTER 4 PRESENT RESOURCE ASSESSMENT AND FORTHCOMING SCENARIO

4.1 Introduction

It should be carefully considered that predicted increases in the human and livestock population will put pressure on natural resources such as water, land and forests, especially in the ASAL areas, with its delicate balance of environment. The results of PRA and RRA reveal that the people in the Study Area have noticed the deterioration of their natural environment. However their interests tend towards their urgent needs of getting food and water and preventing animal diseases, before regional environmental issues are put forward.

This chapter conducts an assessment of the present resources of the area. Based on this assessment, the environmental scenario which will result if there is no intervention given will be in the following sections. The present resource assessment could indicate a development frame, within which resources can be managed. Then, based on the projected human and livestock populations, a future scenario will come to light that may indicate the right direction of intervention into and/or sharing with the community in the course of the rural development.

4.2 Present Resource Assessment

4.2.1 Food

The land for crop production has deteriorated especially through soil erosion, which is widely spread in the Study Area. Soil erosion is aggravated by a reduction of vegetation cover by the overgrazing of livestock and as the high demand to exploit trees. The wood is used for fuel in charcoal making and for construction material by the rapidly increasing human population. The bare land can be seen in the Marigat, Ngambo, and Elduime locations and wind erosion occurs there. Even the fertile alluvial soils in the inner lowland areas have serious problems of gully erosion, which is aggravated by the sodic nature of soils.

Frequent crop failures prevail not only in the rain-fed agriculture areas, but also in most of the irrigated areas in the Study Area, due to the limited water resources characteristic of semi-arid areas. A year of good rains may come only once in five years, and the dry weather causes food shortages. The results of the PRA show that food shortages occur for about six or seven months per year and this can rise to a whole year in many villages during droughts.

Drought had been continuing since April 1999 and in the year 2000 the people in the Study Area faced a severe drought as around 60% of the people received emergency relief food. It brought total crop failure, not only in most of the rain-fed areas, but also in some

irrigated areas such as the Kiserian irrigation scheme area due to shortage of river runoff. To survive these severe circumstances, farmers consume substitutes of maize, such as seeds of the evergreen trees “Balanytes aegyptica” and “Boscia coriacea”, and tube of water weed “Ginoy”, which grows in the Baringo Lake.

Considering the present population and the available agricultural land in the Study Area, the self-sufficiency ratio of cereals (maize, finger millet and sorghum) is estimated at 43 percent by the following calculation. It indicates that more than half of the staple food (maize) consumed in the Study Area is imported. To secure their food supply, farmers are trying to expand the irrigated lands as much as possible.

$$\text{Cereals Self-sufficiency:} \quad \frac{\text{Cereals Production*}}{\text{Population} \times \text{Consumption per capita}} = \frac{2{,}309{,}000 \text{ kg/year}}{54{,}202 \times 100 \text{kg/year}} = 43\ \%$$

* Cereals: Maize(2,253t), Finger Millet(42t) and Sorghum(14t) Refer to Appendix I, Table I.3-3

4.2.2 Water

The major water resources in the Study Area consist of surface water such as rivers, lakes, ground catchment water and springs. Ground water is available by using boreholes and wells, but its quality is problematic due to its high fluoride content. The present condition of surface water resources in the Study Area is summarized as follows.

- Average annual rainfall is about 650mm
- Annual evaporation is about 2,000-2200mm, and it is three times higher than the rainfall amount
- Baringo Lake is the biggest water resource but is not suitable for domestic and livestock use due to its quality
- Irrigation schemes abstract water not from Baringo Lake but from rivers
- The Runoff coefficient of the main river is equal to or less than 0.1
- Ground catchment water cannot be used for the whole year

The water level of Baringo Lake seems to be gradually declining taking into consideration the current water balance. Figure 4.2.1 shows the water level of Baringo Lake. It fluctuates and follows the annual rainfall in Eldama Ravine, the catchment area. The water level of Baringo Lake followed to the trend of rainfall in 1970’s and 80’s. However in the 1990’s, the water level of Baringo Lake has not followed the trend of rainfall and has remained stagnant. During these years irrigation in the Study Area has been active, and the quantity of water abstraction has also increased. This fact indicates that water abstraction by irrigation in the Baringo catchment area may accelerate the water balance to decline.

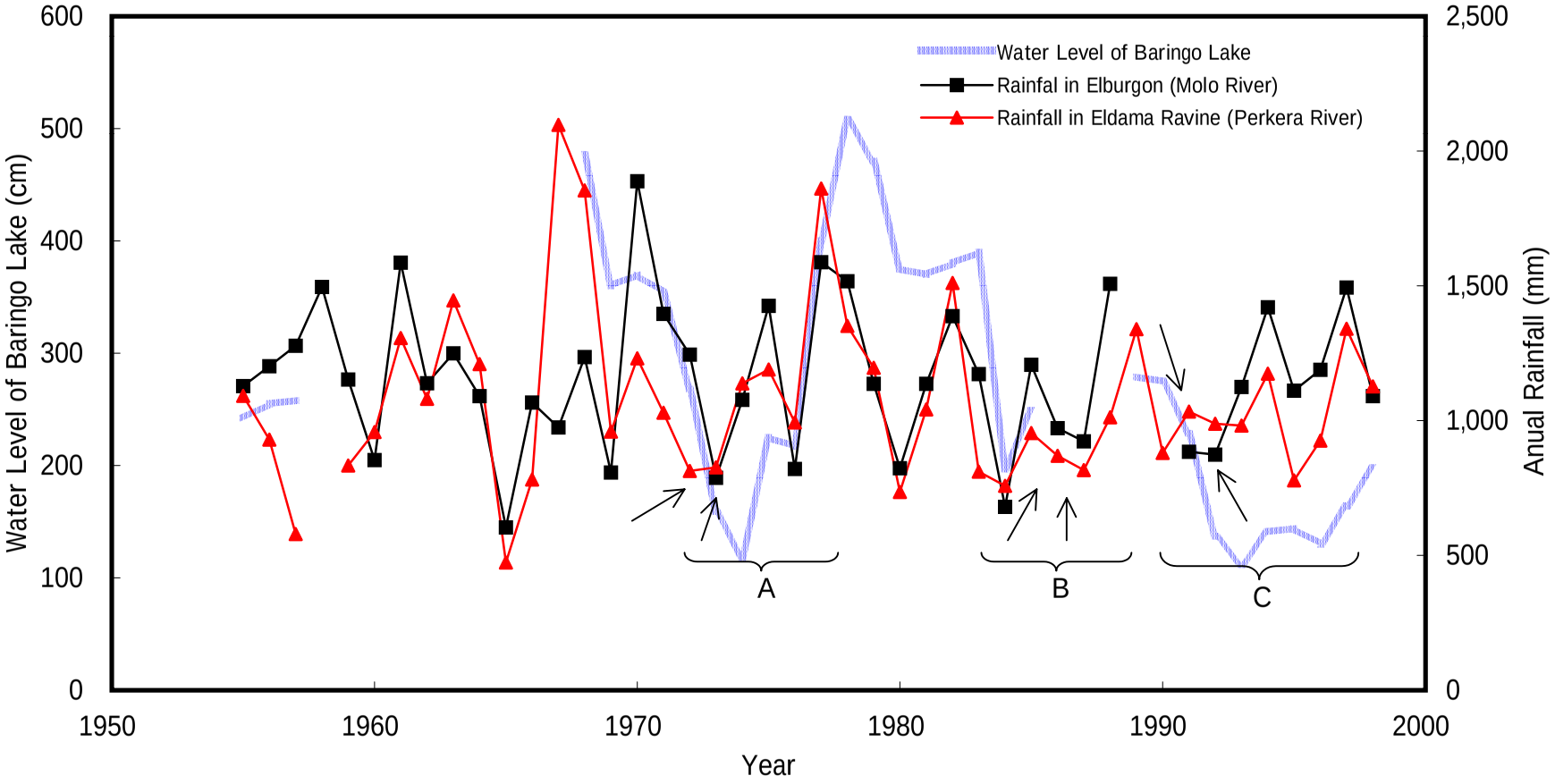


図 4.2.1　年間降雨量及びバリンゴ湖の水位変動
（データ出典: 環境・自然資源省）

Based on the past data, the present water balance in Baringo Lake is estimated as follows; namely, outflow from the Lake is already more than the inflow;

Water into the Lake:	230 (river discharge) + 88.2 (rainfall at the Lake)	= 318.2 MCM
Water from the Lake	22.8 (abstraction) + 308.2 (evaporation)	
	+ 26.5 (groundwater runoff)	= 358.0 MCM

$$\text{Water Balance:} \quad \frac{\text{Water Resource (Inflow quantity)}}{\text{Water abstraction + Evaporation + Runoff}} \quad \frac{318.2 \text{ MCM}}{358.0 \text{ MCM}} = 89\ \%$$

4.2.3 Forage

A noticeable point in Baringo district is the fact that the population density of goats is the highest in ASAL areas. The number of goats in Baringo district in 1998 was about 890,000, the second highest figure in Rift Valley province following Turukana district, while the population density of goats in Baringo district is 83 heads per sq. km, which is 2.5 times of Turukana district (Refer to Table 4.2.1).

In 1998, it was estimated that there were about 230,000 goats in the Study Area. The number of goats, accordingly, occupies 26 percent of the total Baringo district area and the population density counts for 188 heads per sq. km, much higher than that of the district total number. The goat feeds on grass and leaves, and can live in harsh environments. However they also eat grass seedlings and therefore will cause vegetation to deteriorate.

Table 4.2.1 The Population Density of Goats by District in 1998

District	Area (km^2)	No. of Goats	Density (head/km^2)
Baringo	10,790	**890,120**	**83**
Marakwet	2,722	74,158	28
T/Nozia	2,468	17,500	8
U/Gishu	3,784	70,272	19
Nakuru	7,200	69,812	10
Laikipia	9,718	241,450	25
Narok	18,513	572,372	31
Turukana	64,048	2,062,500	33
Kericho	4,890	50,229	11
Kajiado	21,105	636,768	31
W/Pokot	5,076	256,948	51
Samburu	20,809	535,131	26
Nandi	2,745	23,625	9

Source: Area: Statistical Abstract 2000, No. of Goats: Rift Valley Province Livestock Production Department, Annual Report 1998

Existing natural grazing land and other land types makeup around 104,530 ha accounting for about 85 percent of the Study Area at maximum. It is estimated that the average live-weight of local cattle is 167 kg or 0.53 Livestock union (LU) and 30 kg or 0.1 LU for sheep and goats. The total LU in year 2000 is estimated at 68,545, consisting of local

cattle 34,185 LU (64,500 heads) and sheep and goats 34,360 LU (343,600 heads).

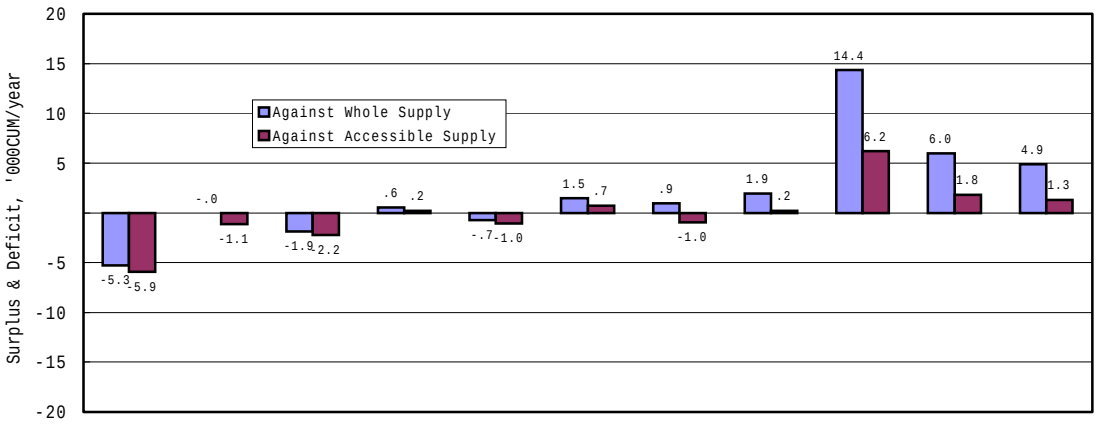
Assuming the natural grazing land stocking rate of around 0.5 ha/LU, it is estimated that total carrying capacity is 52,265 LU (104,530ha × 0.5 LU). Thus under present circumstances, overgrazing is recognized using the calculation below. In fact people mainly in east hillside of the Study Area have been taking the cattle beyond the border of Baringo District especially during dry season.

$$\text{Forage Self-sufficiency:} \quad \frac{\text{Number of livestock capable to feed}}{\text{Actual number of livestock}} \quad \frac{52{,}265\ (\text{LU})}{68{,}545\ (\text{LU})} = 76\ \%$$

4.2.4 Forest

About 70 percent of the energy consumed in Kenya comes from wood, mainly as fuelwood for cooking and heating in the rural areas, and as charcoal in the towns. Yet the local people in the Study Area almost all depend on fuelwood for cooking and warming themselves and to a much lesser extent on charcoal which is currently used in Marigat town. A lack of fuelwood produces a chain reaction affecting the stability of the environment, the nature of rural societies, and the pastoral and agricultural bases.

The figure below shows the present fuelwood deficit or surplus by location. For each location, the left bar indicates fuelwood availability against the whole supply, and the right one shows the availability against the accessible supply. Accessibility was projected at about 70 percent overall, based on topographic maps and field observations. Applied to the estimates of surplus and deficit, the unit fuelwood consumption and the unit regeneration of wood figures are shown below the table and range between 0.6 and 1.0 cu.m/head/year for consumption and between 0.5 and 0.8 cu.m/ha/year for regeneration.



Location	Marigat	Eldume	Ngambo	Loboi	Sandai	Kapkuiku	Kimalel	Salabani	Mukutani	Arabal	Kiserian
Consumption	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.6	0.7	0.8
Regeneration	0.5	0.6	0.6	0.7	0.7	0.6	0.7	0.5	0.8	0.8	0.6

Figure 4.2.2 Fuelwood Deficit & Surplus by Location in 1999

The figure above shows that most locations in Marigat division are either already deficient in fuelwood availability or narrowly meet wood regeneration. While Mukutani division, composed of Mukutani, Arabal and Kiserian locations, seems to have still enough fuelwood, localized deficits were often reported, in residential areas even enough the figure shows a surplus. The area right behind Kampi ya Samaki is one suffering from an acute fuelwood shortage. In conclusion the current balance between fuelwood consumption and regeneration in the Study Area is estimated as slightly deficit.

$$\text{Forest Balance: } \frac{\text{Wood regeneration (for accessible)}}{\text{Fuelwood consumption}} \quad \frac{44{,}650\ m^3}{45{,}477\ m^3} = 98\ \%$$

4.3 Forthcoming Scenario without Intervention

As analyzed above, the natural resources are actually deficient within the Study Area. The populations of both human beings and livestock are increasing. The average annual growth rate in the Study Area is estimated at 5.5 percent and the number of livestock shows a rising tendency due to the non-controlled livestock breeding system.

Bearing those tendencies in mind, the future status of natural resources in the Study Area without intervention will be estimated. It will also be assumed, for the estimation, that the irrigated lands will be expanded to their maximum as far as the availability of river water permits by year 2020 to respond the population increase. The projection of human population figures is based on an analysis of the district cohort data and the livestock population figures are based on the current trend of population growth. (Refer to Appendix L, Table L.2-4)

Table 4.3.1 Projection of Population and Population-related Indicator

Year	2000	2005	2010	2020
Population	54,202	71,412	94,132	163,323
Livestock (LU)	68,545	87,175	100,700	116,195
Fuelwood consumption (m^3)	45,477	59,916	78,977	137,031
Irrigated Area (ha)	1,904	2,311	2,845	4,447
Water use (MCM)	22.8	33.5	47.5	88.9

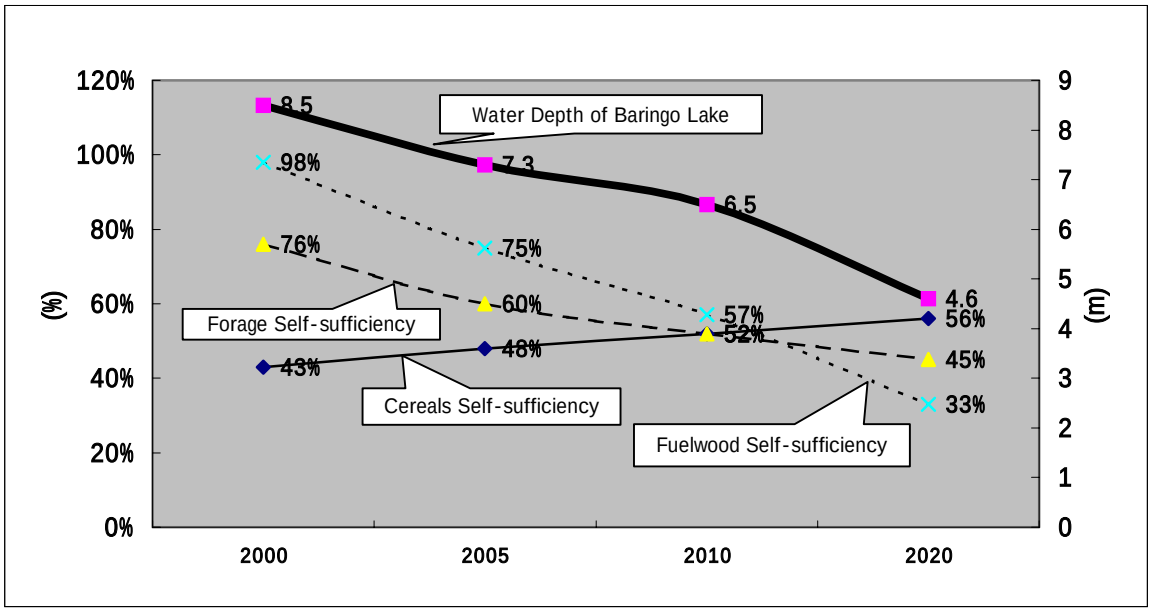


Figure 4.3.1 Forthcoming Scenario without Intervention

As shown above, by the year 2020, population will be three times the present figure with rapid population growth, and the number of livestock will increase by 1.7 times. Due to these factors fuelwood consumption will drastically increase and so will water use. Hence resources will become highly deficient within the Study Area, apart from food. As for food, the assumption of expansion of irrigated lands can raise the maize self-sufficiency ratio up to 56 percent. In contrast, the water depth of Baringo Lake will go down from the current 8.5 m to 4.6 m in the year 2020 due to water abstraction.

Such high consumption of resources will lead the deterioration of the environment in the Study Area. Increases in fuelwood consumption and overgrazing will lead to the deterioration of vegetation, and will lead to 1) the spread of soil erosion, then 2) the spread of soil erosion will accelerate the silting up of Baringo Lake leading the water depth to become rapidly shallower. Furthermore 3) available land for crop production will be restrained, 4) the size of livestock will get smaller and 5) bee-keeping will lose sources of nectar. These points will result in sources of income becoming unstable in the area.

We shall focus on the resulting scenario of Baringo Lake. Projections show that the water level of Baringo Lake will go down by half by 2020 due to increases in water use. If the worst case scenario were considered, Baringo Lake may disappear altogether due to accelerated silting. The lake is an important resource in the Study Area. This projection would have serious negative effects on the economic activities around Baringo Lake, such as fishery and tourism, both of which are contributing to the local economy. Fishery in Baringo Lake is a very precious resource, giving not only supplemental food to the local people but also contributing to the local economy. Wildlife in and around the lake attracts

many tourists and visitors, though the area is not designated as a reserve, thus playing a very important role in supporting the local and regional economy.

The lake water level will definitely affect the amount of fish caught as the catch has a high correlation with the water level as has been experienced in the past (see Chapter III, 3.2). Also, a noticeable indication is the size of the fishes. The size of the fish has become smaller and smaller, indicating over-fishing. The future of fishers looks gloomy because there is already an indication of over-fishing, and the Lake may go to further recession due to water exploitation in the catchment area and eroded soil carried into the Lake. The decrease in amount of fish caught may prevail and will accelerate over-fishing and the miniaturization of fish, thus resulting in a vicious circle.

Thanks to its rich wildlife, the lake has had many tourists not only from other parts of Kenya but also from other countries (see Chapter III, 3.6.3). The income generated by tourism is considerable - the income of the County Council from fees from Baringo Lake was 1.4 million Ksh in 1999, and the income of Lake Baringo Club was over 800,000 US$ in the same year. If the Lake receded seriously, the wildlife would also be very much affected. As a result of this the decrease in wildlife would affect the income generated by tourism. Visitors may lose their interest to come, and the one million US$ business will be damaged.