No.

MINISTRY OF PLANNING AND NATIONAL DEVELOPMENT
THE REPUBLIC OF KENYA

THE DEVELOPMENT STUDY FOR REGIONAL DEVELOPMENT PROGRAMME IN NYANDO AND HOMA-BAY DISTRICTS IN THE REPUBLIC OF KENYA

FINAL REPORT
MAIN

AUGUST 2007

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SANYU CONSULTANTS INC., TOKYO, JAPAN

SD
JR
07 - 43

CURRENCY EQUIVALENTS (AS AT MAY 2007)

1 US$	=	68.02 Kenyan Shilling (TTB)
1 US$	=	119.034 Japanese Yen (TTB)
1 Ksh	=	0.0147 US$
1 Ksh	=	1.750 Japanese Yen
1 Japanese Yen	=	0.571 Ksh

PREFACE

In response to a request from the Government of Kenya, the Government of Japan decided to conduct a study, the Study for Regional Development Programme in Nyando and Homa Bay Districts in the Republic of Kenya, and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Kosei HASHIGUCHI of Sanyu Consultants Inc. between June 2005 and May 2007.

The team held discussions with the officials concerned of the Government of Kenya and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of the development programmes identified therein and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Kenya for their close cooperation extended to the study.

August 2007

Kazuhisa MATSUOKA
Vice-President
Japan International Cooperation Agency

August 2007

Mr. MATSUOKA Kazuhisa
Vice-president
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

Dear Mr. MATSUOKA,

We are pleased to submit herewith the Final Report on the Development Study for Regional Development Programme in Nyando and Homa Bay Districts in the Republic of Kenya. This Report presents the development programmes of the target two districts 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 national steering committee members chaired by the Ministry of Planning and National Development (MoPND) during the technical discussions on the draft final report which were held at Nairobi in May 2007.

The overall objective of this Study is to contribute to poverty reduction of the local population in the Study Districts based primarily upon coordinated and integrated development activities amongst all the development stakeholders. The Study has been conducted in partnership with and by guidance from the MoPND, and incorporated the views of the beneficiaries and other stakeholders such as relevant departments at the districts, local authorities, international funding agencies, NGOs, etc. The process of this Study centered on the following which themselves were the objectives of the Study:

1) To formulate a Development Programme for sustainable development for each of the two districts, and present the planning approach and methodology based upon bottom-up approach, and

2) To enhance the capacity of the counterparts to promote and lead development, which contributes to raising the ownership of the Government in the process of the programme implementation.

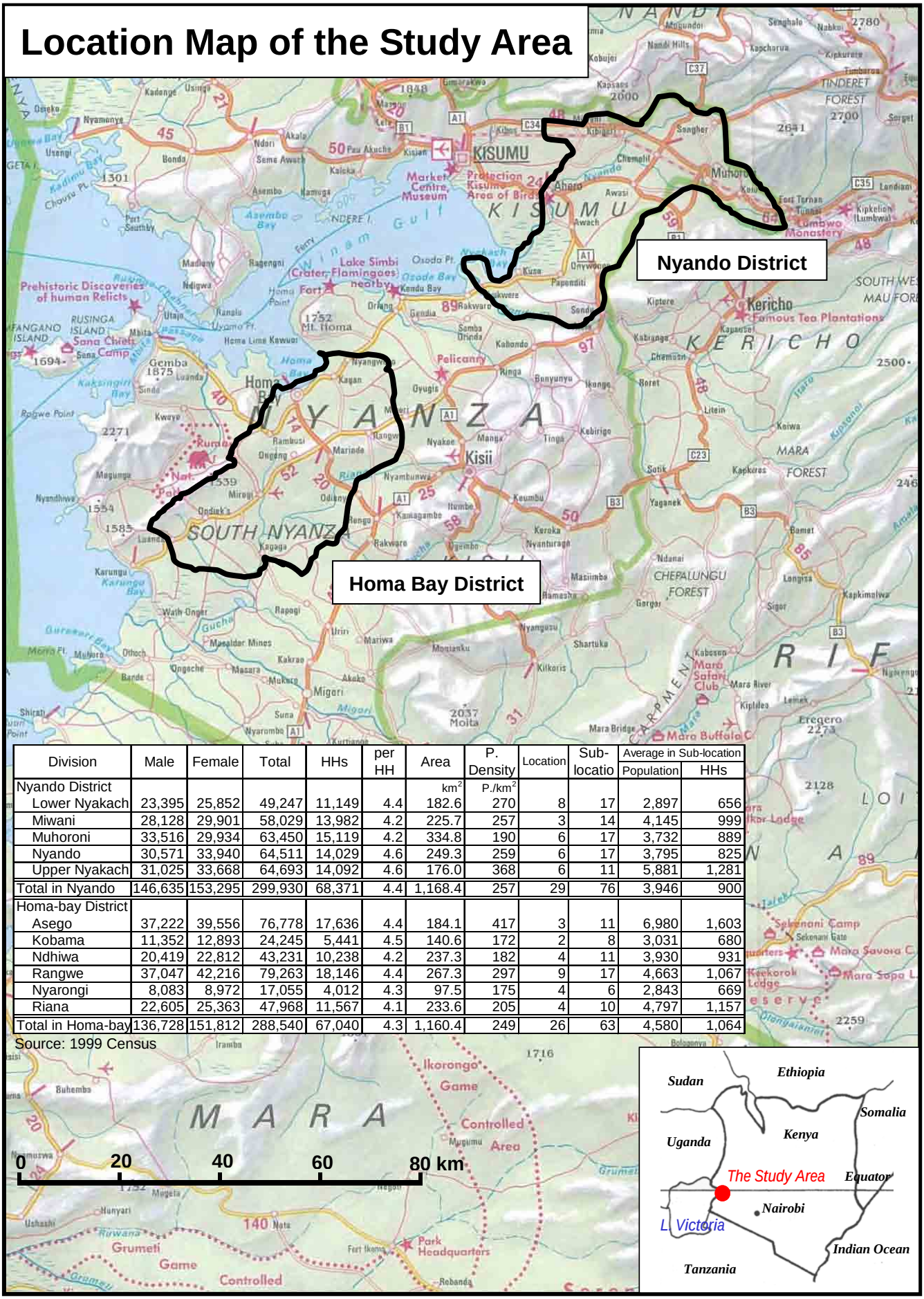
To attain the above objectives, this Study was carried out in a phasing manner divided into two; namely, Phase 1 dealing mainly with situation analysis, participatory workshops, formulation of the draft Development Programme and identification of some potential pilot projects, and Phase 2 which was further divided into two; former part of which was to undertake the preparation and mobilization of the pilot projects, and later part of which was to implement the pilot and present the final version of the Development Programme upon feeding-back all the lessons therein. The Phase I study started at the end of June 2005, and the Study itself completed in July 2007 upon presenting this Final Report.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs and relevant authorities of the Government of Japan. We also wish to express our deep gratitude to MoPND, the counterpart agency, in the Republic of Kenya for the close cooperation and assistances extended to us during our investigation and study.

Very truly yours,

HASHIGUCHI Kosei
Team Leader of the Study Team

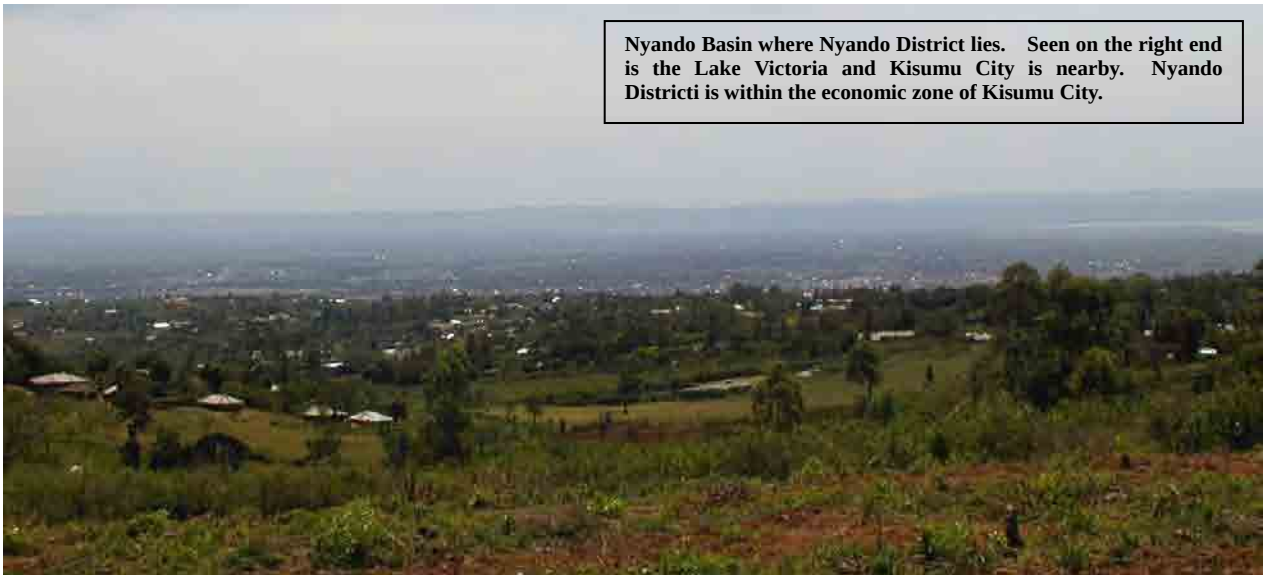
Location Map of the Study Area



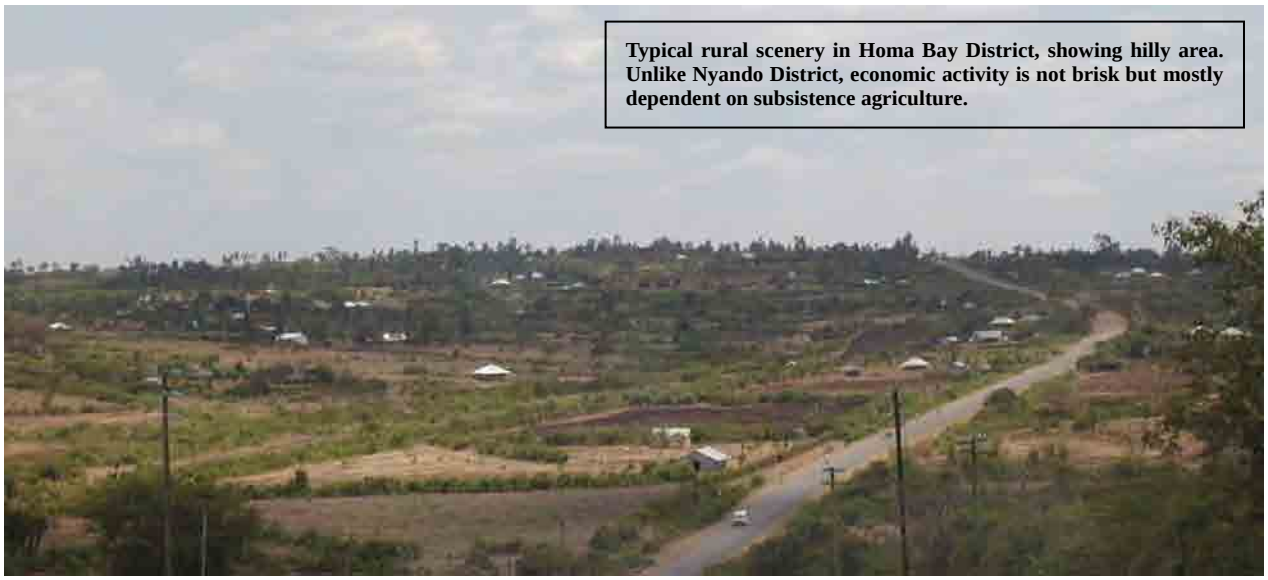
Division	Male	Female	Total	HHs	per HH	Area	P. Density	Location	Sub-locatio	Average in Sub-location	
										Population	HHs
Nyando District						km^2	$P./km^2$				
Lower Nyakach	23,395	25,852	49,247	11,149	4.4	182.6	270	8	17	2,897	656
Miwani	28,128	29,901	58,029	13,982	4.2	225.7	257	3	14	4,145	999
Muhoroni	33,516	29,934	63,450	15,119	4.2	334.8	190	6	17	3,732	889
Nyando	30,571	33,940	64,511	14,029	4.6	249.3	259	6	17	3,795	825
Upper Nyakach	31,025	33,668	64,693	14,092	4.6	176.0	368	6	11	5,881	1,281
Total in Nyando	146,635	153,295	299,930	68,371	4.4	1,168.4	257	29	76	3,946	900
Homa-bay District											
Asego	37,222	39,556	76,778	17,636	4.4	184.1	417	3	11	6,980	1,603
Kobama	11,352	12,893	24,245	5,441	4.5	140.6	172	2	8	3,031	680
Ndhiwa	20,419	22,812	43,231	10,238	4.2	237.3	182	4	11	3,930	931
Rangwe	37,047	42,216	79,263	18,146	4.4	267.3	297	9	17	4,663	1,067
Nyarongi	8,083	8,972	17,055	4,012	4.3	97.5	175	4	6	2,843	669
Riana	22,605	25,363	47,968	11,567	4.1	233.6	205	4	10	4,797	1,157
Total in Homa-bay	136,728	151,812	288,540	67,040	4.3	1,160.4	249	26	63	4,580	1,064

Source: 1999 Census

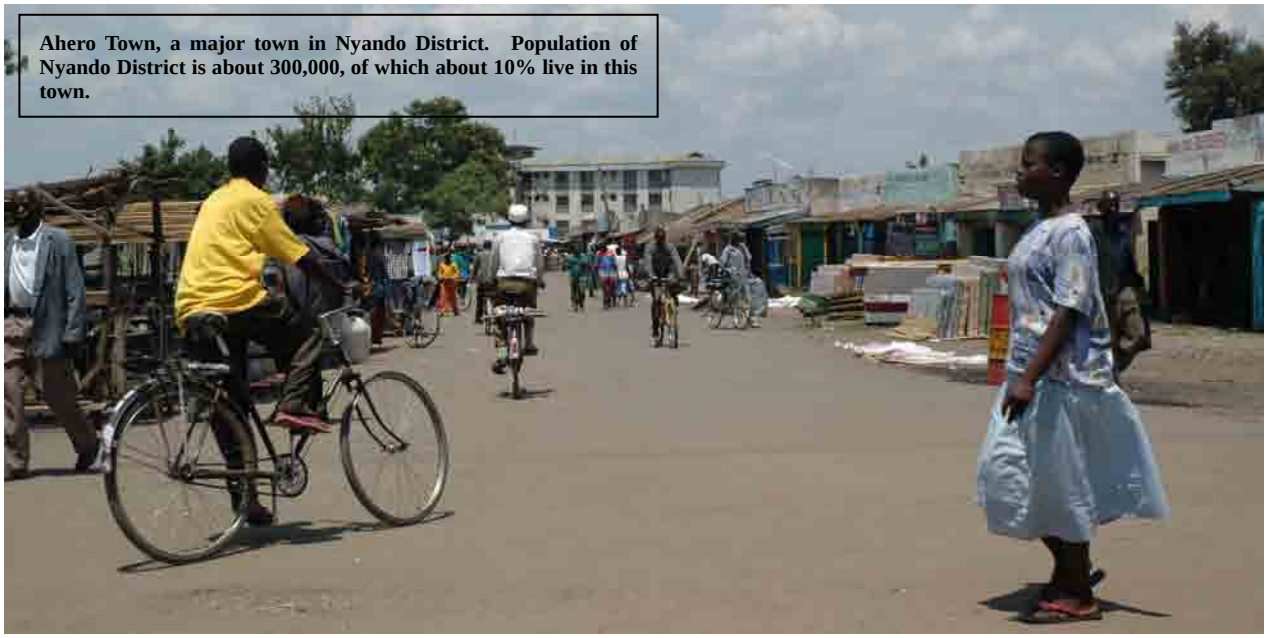
TYPICAL SCENERY IN NYANDO AND HOMA BAY DISTRICTS



Nyando Basin where Nyando District lies. Seen on the right end is the Lake Victoria and Kisumu City is nearby. Nyando Districti is within the economic zone of Kisumu City.



Typical rural scenery in Homa Bay District, showing hilly area. Unlike Nyando District, economic activity is not brisk but mostly dependent on subsistence agriculture.



Ahero Town, a major town in Nyando District. Population of Nyando District is about 300,000, of which about 10% live in this town.

TYPICAL SCENERY IN NYANDO AND HOMA BAY DISTRICTS

A typical beach called Ngegu Beach. Fish catch has really declined to about 20% only comapared to that of 1990s.

Homa Bay Town where the capital of Homa Bay District is placed. Abour 56,000 population resides

ADIS orphans are now one of the challenges. About one-third of pupils now do not have either mother or farther or the both.

A typical rural centre where divisional government officers and alsohealth centre are usually placed

A community workshops which was held in a church. Villagers around the venue discuss their challenges and opportunities.

A destrict level workshop. In this study, participatory was pursued from community, division and at this deistrict level.

A training on home based care for PLWHA. The trainees are to teach care givers of how to undertake HBC PLWHA.

A community health worker now talks to the community about local disease management.

Training on Baking Technology at KIRDI. Total 44 community representatives attended 8 different courses.

Now sowing vegetable seeds to the nursery. The trainer is a divisional agriculture officer.

Hand fabric weaving out of cotton wool. A cottage industry promotion in line with the cotton revitalization pursued by GOK.

Line-transplanting: one of the significant technologies introduced by the key-farmers.

COMPOSITION OF REPORTS

SUMMARY

MAIN REPORT

APPENDIXES VOL-1/2

APPENDIXES VOL-2/2

GUIDELINES to prepare district development plan

CONTENTS

ACRONYMS AND ABBREVIATIONS

ADB	African Development Bank
ADRA	Adventist Development and Relief Agency
AEP	Agriculture and Environment Program (under Catholic Dioceses)
AMREF	African Medical Research Foundation
ANPPCAN	African Network for Prevention and Protection against Child Abuse and Neglect
ART	Anti-retroviral Drug Treatment
ASAL	Arid and Semi Arid Land
CACC	Constituency AIDS Control Council
CBO	Community-Based Organization
CDC	Center for Disease Control
CDF	Constituency Development Fund
CMAD	Community Mobilization against Desertification (an NGO)
COMESA	Common Market for Eastern ad Southern Africa
DANIDA	Danish International Development Agency
DAO	District Agriculture Officer
DASCO	District AIDS and STI Coordinator
DCO	District Children Officer
DDC	District Development Committee
DDO	District Development Officer
DEC	District Executive Committee
DFO	District Fishery Officer
DFRD	District Focus for Rural Development
DLPO	District Livestock Production Officer
DMOH	District Medical Officer Health
DHMT	District Health Management Team
DPHO	District Public Health Officer
DSO	District Statistical Officer
DSCO	District Soil Conservation Officer
DSDO	District Social Development Officer
FBO	Faith Based Organization
GF	Global Fund
HIV/AIDS	Human Immuno-deficiency Virus/ Acquired Immune Deficiency Syndrome
IRHS	Integrated Rural Health Services (SIDA supported programme)
ITN	Insecticide Treatment Net
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KEMRI	Kenya Medical Research Institute
KIHBS	Kenya Integrated Household Budget Survey (2005/06)
KOST	Kenyan Orphans Sponsorship Trust
LBDA	Lake Basin Development Authority
LVEMP	Lake Victoria Environmental Management Programme
MOH	Ministry of Health

MOLFD	Ministry of Livestock and Fisheries Development
MPND	Ministry of Planning and National Development
MWRI	Ministry of Water Resources and Irrigation
MOA	Ministry of Agriculture
NACC	National AIDS Control Council
NALEP	National Agriculture and Livestock Extension Programme
NEMA	National Environment Management Authority
NASCOP	National STD Control Programme
NIB	National Irrigation Board
NGO	Non-Government Organization
NSI	National Security Intelligent
OVCs	Orphans and Vulnerable Children
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Paper
RDWSSP	Rural Water Supply and Sanitation Programme (Netherlands funded)
SIDA	Swedish International Development Agency
SONY	South Nyanza Sugar Company
TOT	Trainers of Training
VCT	Voluntary Counseling and Testing (Center)

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KENYAN FINANCAL YEAR

July 1 to June 30

UNIT CONVERSIONS

1 meter (m)	=	3.28 feet
1 kilometer (km)	=	0.62 miles
1 hectare (ha)	=	2.47 acres
1 acre	=	0.405 ha
1 foot	=	12 inches (30.48 cm)
1 inch	=	2.54 cm

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PART I

INTRODUCTION AND OVERVIEW

CHAPTER 1 INTRODUCTION AND PURPOSE

This Report is presented in accordance with the Scope of Work (S/W) and the Minutes of Meetings (M/M) for the Development Study for Regional Development Programme in Nyando and Homa Bay Districts in the Republic of Kenya (the Study) agreed upon between the Ministry of Planning and National Development (MoPND) and the Japan International Cooperation Agency (JICA) on December 1, 2004. This Report describes the findings made during a series of field surveys, approaches to the programme formulation, development constraints and opportunities, development framework and strategy, development programmes and projects with its implementation arrangement, pilot project implementation, and finally conclusion and recommendations.

1.1 Rationale

Nyanza Province where Nyando District and Homa Bay District are located carries a population of around 4.5 million accounting for 15.3 % of the national population. It represents a densely populated area in Kenya with a density of about 360 persons per square kilometer. The province is bestowed with relatively favorable natural resources such as productive soils and mild climate, and owing to these it is referred to as an area with “high potential for agricultural productivity”. Nevertheless, the production of such major cash crops in the province as sugarcane and paddy has been stagnant due to drop of market prices and halting function of irrigation systems, etc. Though it is desirable to restore the production with new system of farming and livelihood substitutable with hitherto monoculture, very little subjective crop conversion has so far been made.

As a result, many of the provincial population have been leaving their home villages, seeking for new income opportunities and means of livelihood, resulting in lingering demographic departure of manpower and labor force out of the province. At the same time, a sharp decline of productive stratum of population caused by prevalent epidemic of HIV/AIDS has become a heavy burden to the regional economy. In addition, frequent floods fostered by deforestation and random felling of forest resources have brought the population serious damages. Thus, as many people recognize, such economic recession and increased disasters have converted Nyanza Province into one of the poorest areas in Kenya. Poverty indices in Nyando District and Homa Bay District had consequently reached 61% and 71% in 1997 according to the Monitoring Welfare Survey III of 1997 (this is now 48% and 45% according to the latest poverty survey result of KIHBS-2005/06).

With a view to reversing gloomy trend of regional recession, a nationwide campaign has been deployed trying to activate economy through the promotion of decentralization and privatization of public enterprises. However, not merely financial difficulty in state economy has made it practically difficult to put regional development plans into implementation, but also policy changes with very frequent reassignment or replacement of principal officers in the local governments have hampered the immediate actions to rapidly create a bridgehead for local development. Meanwhile, no significant improvement in poverty-stricken local communities has been made in many local communities where administrative assistances are hardly available. Though many measures have so far been taken to cope with HIV/AIDS and in fact the prevalence rate has already started declining, still economy can hardly be said to have started reversing the downward trend. In this regard, immediate measures are acutely sought for coping with these serious situations faced by these districts.

Under these circumstances, the Government of Kenya (GOK) made a request to Japan for the assistance of implementing “The Development Study for Regional Development Programme in Nyando and Homa Bay Districts in the Republic of Kenya”, envisaging that once a threshold can be tapped in order to bring stability on life of population and economic development in a selected site, it’ll also be diffusible to other areas facing similar issues within these two districts. Accepting the

request, JICA dispatched a preparatory study mission to Kenya in November 2004 to consult the Scope of the Works (SW) and the framework of the Study with the relevant GOK officers.

The Minutes of the Meetings on the Scope of Work were agreed and signed on December 1, 2004 between the two governments, and Sanyu Consultants Inc. of Japan was contracted by JICA in July 2005 to carry out the Study. The Study Team first arrived in Kenya on June 29, 2005 and proceeded to the subsequent field survey, and has now completed all the works stated in the Scope of Work presenting this Final Report.

1.2 Objectives and Scope of the Study

The overall objective of this Study is to contribute to poverty alleviation of the population in the districts concerned. This Study is carried out in partnership with and by guidance from the Rural Planning Directorate under the Ministry of Planning and National Development (MoPND), and incorporates the views of the beneficiaries and other stakeholders such as relevant directorates under the MoPND, provincial and district offices of the MoPND, line ministries' officers at the district level, local authorities, international funding agencies, NGOs, etc.

The Study aims at designing a programme to comprehensively promote area-wise multi-sectoral development focusing on the districts concerned. In this connection, the programme to be designed here comprises a host of action plans to be pursued by the communities and counterpart authorities in order to find solutions of the compound issues hindering area development, but it also includes a design for implementation mechanism in which organizations concerned and donors participate. The whole process of this Study centers on the following which themselves are the objectives of the Study agreed upon in the SW:

1) To formulate a Development Programme for sustainable development for each of the two Districts; Nyando and Homa Bay,

2) To improve the planning process at the district, division, location and community levels based upon bottom-up approach, and

3) To enhance the capacity of the Counterparts to promote and lead the development, assuring the ownership of the Government in the process of the programme implementation.

To attain the above objectives, this Study was divided into two phases; namely, Phase I carried out in the latter part of year 2005 and Phase II from the first quarter of year 2006 to the end of this Study, which is the second quarter of year 2007. Phase I produced the draft development programme together with pilot identification, and Phase II carried out some of the programmes as pilot and presented the final version of the development programme refined by feed-backing the lessons learned from the implementation of the pilots. Following are the scope of the Study and the overall study schedule, which were agreed upon in the SW:

- Analysis of regional development policies, strategies and activities,
- Assessment of the actual situation, socio-economic, cultural and environmental aspects,
- Review of the sector situation,
- Study for the capacity development of central and local government institution,
- Formulation of district development programme,
- Verification study on participatory methods for the improvement and empowerment of communities,
- Formulation of development programme

Table 1.2.1 Overall Study Schedule

Year	2005		2006				2007	
Quarter	3rd	4th	1st	2nd	3rd	4th	1st	2nd
Phase I								
Phase II-1								
Phase II-2								
DFR submission								
Report	Ic/R	PR		It/R				**DFR FR**

1.3 The Study Area

The Study area includes Nyando and Homa Bay Districts belonging to Nyanza Province located at the coast of Lake Victoria situated in western part of Kenya where high poverty rates prevail. According to a demographic census in 1999, Nyando and Homa Bay Districts were populated with 299,930 and 288,540 respectively, whereas their geographic areas extend over 1,168 km^2 and 1,160 km^2, respectively. From these figures the population densities of these districts as at 1999 fall on 257 persons/km^2 and 249 persons/km^2, respectively, thus forming highly populated area in Kenya ranked just after Central Province where the capital Nairobi is located.

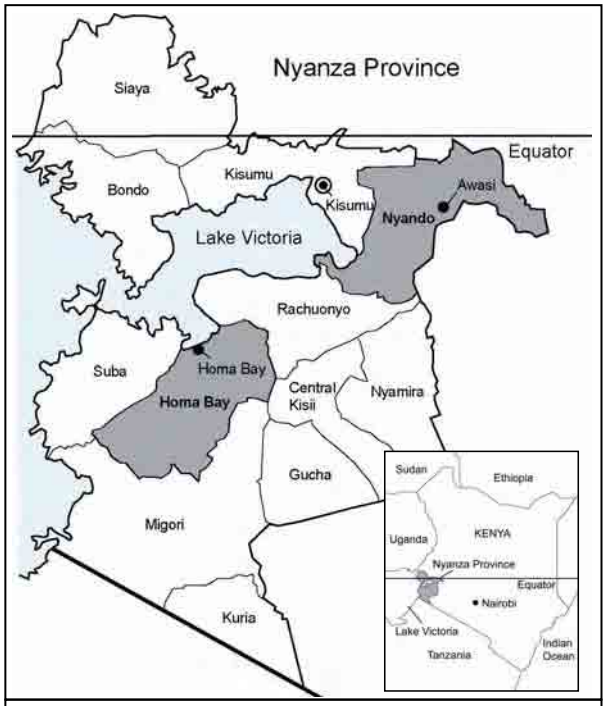


Figure 1.3.1 Location Map of the Study Area

1.4 The Study Approach

The district development programme this Study produces should be a comprehensive development plan for the Study districts at the broadest level of economic and social planning and a plan which could be replicated in other districts as well. The development programme coordinates actions/ plans at a sectoral as well as area, say division, wide levels, and has to balance each other at the district level, making itself comprehensive. The development programme should also fit into the higher level plans such as national development plan and Economic Recovery Strategy which is the statutory policy document prepared by the present Government.

Learning from past experiences in planning an area-wide development programme, this Study contains two new elements apart from conventional plan formulation: 1) a participatory planning approach involving not only the community people on the ground but government officers themselves as well, together with distinct development actors in the districts such as NGOs, CBOs and FBOs, and 2) implementation of pilot programmes/ projects before the finalization of the development programme. The Development Programme is, therefore, characterized by the active participation as well as consensus making process by all the concerned parties in its preparation; also, before the Programme is finalized, several of the most important hypotheses of the provisional development programme are verified through the actual implementation of certain programmes/ projects, which may be called as verification programmes.

This process of formulating the Development Programme is shown in Figure 1.4.1. As shown in the

figure, the approach to formulating the programme may be called a hybrid type, composed of both conventional sector approach, which may be called top-down approach, and a participatory approach which entails bottom-up movement. In order to gain a clear overview of the Study districts and to take into account the economic frame-work projected based upon population growth among others, overall resource availability and the need to maintain a balance with other alternative plans, a certain degree of top-down approach needs to be adopted. On the other hand, a bottom-up approach is also required. The bottom-up approach does not necessarily mean a participation of the community people but means a process to which all the development actors such as the people on the ground, government officers, NGOs, and CBOs participate.

Implementation of the pilot programmes/ projects is another key to formulating the development programme that could really work on the ground. As mentioned, this Study is composed of two phases, Phase I and Phase II. During Phase I, a draft development programme was prepared and a number of pilot programmes/ projects were identified. Phase II of the Study put some of the identified programmes/ projects into practice, and converted the draft programme into the final District Development Programme by feeding back into it the experience and lessons coming up through the implementation of the pilot projects. Also the pilot practice identified a soundest mechanism with which the district development programme is to be put into real implementation.

For some pilot 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 Development Programme. Nevertheless all the lessons learned through the implementation of the pilot projects are fully taken into account in order to formulate more realistic and more practical development strategies, project design and implementation mechanism as well as sector-wise technical recommendations.

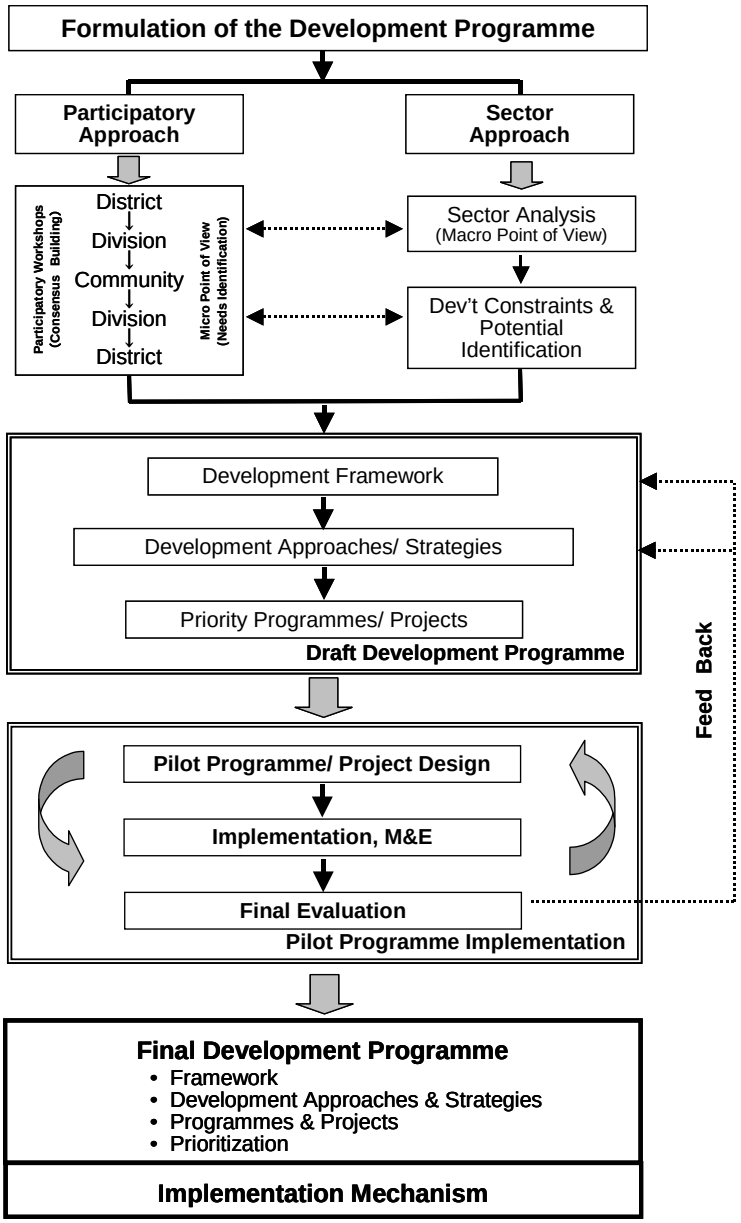


Figure 1.4.1 Overall Study Framework and Flow

1.5 Implementation Arrangement of the Study

JICA has organized a Study Team, which is composed of members from Sanyu Consultants Inc. and its associates, for the implementation of this Study. The counterpart organization of the Study, the Ministry of Planning and National Development (MoPND), arranged counterpart personnel and

implemented the Study with the Study Team. In addition, a steering committee was established to facilitate collaboration among the organizations concerned under the leadership of MoPND. Establishment of the steering committee was agreed in the SW at the central level. Also established at the district level was a working forum composed of line-ministries' officers in that level. The Figure 1.4.2 is the implementation arrangement of the Study.

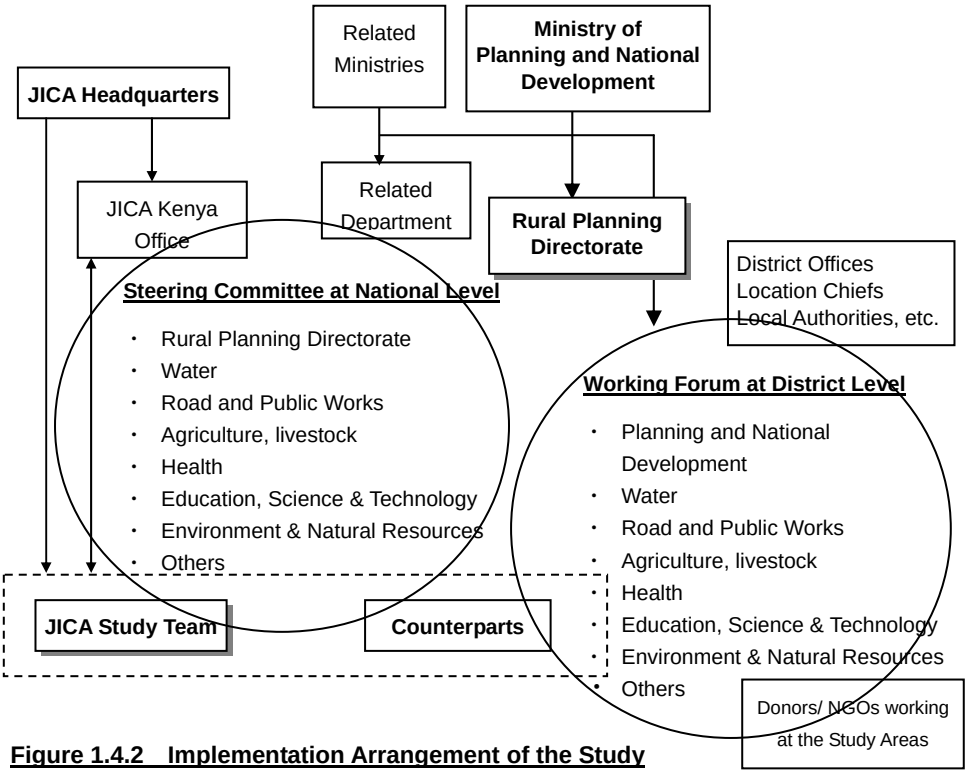


Figure 1.4.2 Implementation Arrangement of the Study

CHAPTER 2 DEVELOPMENT PLANS WITH THE RELEVANCE TO THE DISTRICT

This chapter briefly discusses the development trend in the past and also development plans in Kenya. Kenya has suffered a long-term downward economic trend which reached a negative 0.2 percent real GDP growth in year 2000. Given high population growth rate which is 2.9 percent[1], one can see how real growth rate per capita and subsequently per-capita GDP has fallen down, though since the inception of the present government the downward trend started reversing[2]. The section below summarizes those long-term economic performances and points out some of the causalities. Then, briefly explained is the development plans such as Economy Recovery Strategy 2003 – 2007, national development plans, and relevant district development plans. Decentralization has been a high political issue since longtime ago, the process of which is also briefly explained.

2.1 Development Performance in the National Context

2.1.1 Past Trend of the Economic Development

Four phases of macro-economic performance of Kenyan economy since independence are clearly identifiable: a rapid growth phase over 1964-73; an era of external shocks over 1974-79 dominated by oil price shocks and a coffee boom & bust; a period of stabilization and structural adjustment in the 1980s and an era of liberalization and declining donor inflows from 1990 up to early 2000s. The overall effect of these changing circumstances has been a declining trend in economic performance leading to high levels of poverty; that is 49 % national average and 48% and 45 % for Nyando and Homa Bay Districts respectively[3] (it was 56 percent national average and 69 % and 77 % for Nyando and Homa Bay Districts according to WMS-III of 1997).

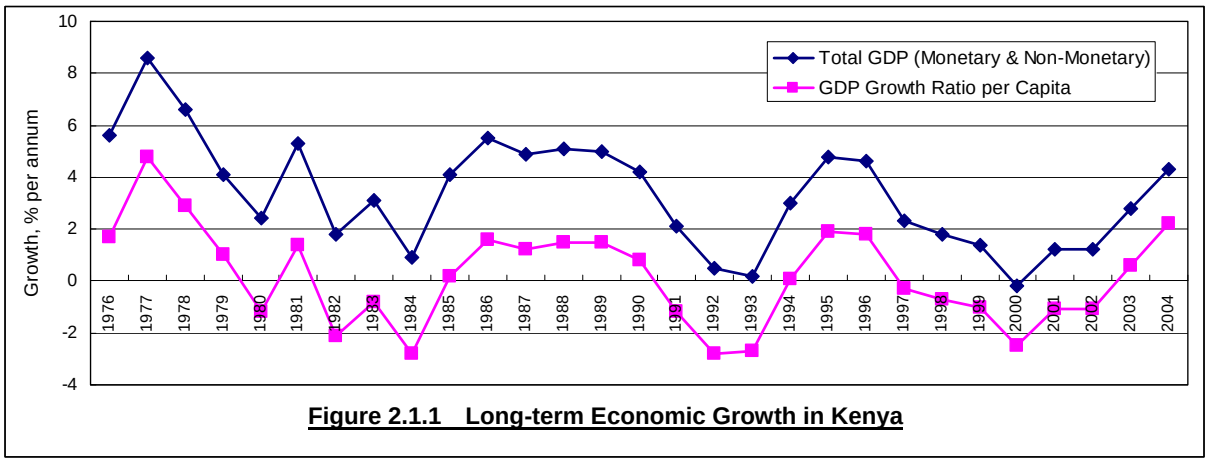


Figure 2.1.1 Long-term Economic Growth in Kenya

The number of the people living in poverty is estimated to have risen from 11 million or 48% of the population in 1990 to 17 million or 56 percent of the population in 2001. Welfare monitoring surveys indicate that three quarters of the poor live in rural areas while the majority of the urban poor live in slum and peri-urban settlements. In a number of participatory poverty assessment (PPA) surveys carried out in the 1990s, the poor attributed their poverty to natural calamities, and traditions and cultural beliefs that deny women access to productive assets. The deterioration in the living standard is well demonstrated by the worsening in key social indicators over the last two decades.

The rural economy is the backbone of Kenya's development efforts. About 80 percent of the

[1] The latest census was carried out in 1999, so that the 2.9 percent is the inter-census growth rate from 1989 to 1999.
[2] Real GDP growth rate in 2003 was 2.8% while the one in 2004 was as high as 4.3 %. The 4.3% was evaluated against a background of a changed methodology, which included new economic activities such as informal sector, information technology, and horticulture produce.
[3] According to the Kenya Integrated Household Budget Survey, KIHBS-2005/06, Central Bureau of Statistics, MoPND

population lives in the rural areas and about 75 percent of Kenyans are engaged in agriculture, the key enterprise of the rural economy. Besides agriculture other activities that complement the non-farm activities are e.g. tourism, quarrying, mining, forestry, fishing and micro and small-scale enterprises, which include agro-processing, trading and manufacturing. The rural sector provides at least 70 per cent of the national labour opportunities and directly contributes up to 24 percent of the GDP as at 2004[4], which is actually the biggest share to the GDP amongst economic activities.

However, as mentioned above the rural economy has experienced steep decline in performance over the past decade. Its declining performance mirrors the poor performance of the economy whose growth declined from a high of 7 percent in 1986, which was the highest since 1980, to 0.2 percent in the year 2000[5]. Per-capita income in constant 1982 prices declined from US$271 in 1990 to US$239 in 2002. Other indicators of performance include declining agricultural productivity and production, which dropped from an annual growth rate of 6.8 percent in 1977 to negative 2.4 percent in 2000, increasing food deficits and environmental degradation. The rural areas have also experienced declining productivity due to the impact of HIV/AIDS, malaria, waterborne diseases, etc.

2.1.2 Human Development Index in Kenya

UNDP published a report which shows ranking of Human Development Index (HDI). The rating order, known as human development index, is based on life expectancy, literacy level and enrollment rate of primary school, and economic development. It shows that the standard of living among Kenyans has fallen drastically in the past years with the country now ranked among those with low human development levels. In fact, Kenya has gone down by 20 places in the rating order in the past three years (from 2002 – 2005). Kenya is ranked at 154 out of 177 countries included in the recent report. It is 10 places behind Uganda, which is positioned at 144. Tanzania is placed at number 164. Yet, in 2002, Kenya was ranked in position 134 while Uganda was trailing at 150.

Table 2.1.1 Ranking of Human Development Index by Country, 2005 UNDP

Rank	Country	Rank	Country
143	Togo	**154**	**Kenya**
144	**Uganda**	155	Gambia
145	Zimbabwe	156	Guinea
146	Madagascar	157	Senegal
147	Swaziland	158	Nigeria
148	Cameroon	159	Rwanda
149	Lesotho	160	Angola
150	Djibouti	161	Eritrea
151	Yemen	162	Benin
152	Mauritania	163	Cote d'Ivoire
153	Haiti	**164**	**Tanzania**

Nyanza Province where the study districts fall in lags behind other provinces in life expectancy, income and literacy rates. Nyanza Province, with an index of 0.413, beats only North Eastern Province, which is not even mentioned in the section on Kenya's human development. Nyanza Province has the least human development in the country due to the relatively low life expectancy attributed to the high incidence of diseases such as malaria and tuberculosis. The situation for Nyanza Province is made worse by the high rate of HIV/AIDS infection. Except for a few areas such as district capitals and rural centers, places where sugar factories are operating, etc. in the province, economic activities are very much limited. The production of cash crops such as cotton has been more or less abandoned, and even sugarcane industry is facing high production costs.

[4] Economic Survey, 2005 Central Bureau of Statistics, Ministry of Planning and National Development.

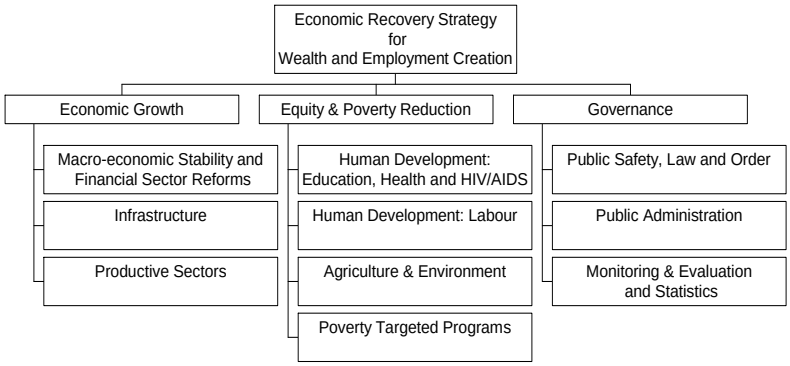
[5] Real GDP rate in the years of 2001, 2002, 2003 are 1.2%, 1.2% and 1.8% (2.8% in 2003 a/c to Annual progress report 2004/05, MoPND).

2.2 Economic Recovery Strategy: the Overarching Development Strategy in Kenya

Since independence in 1963 the Government has been preparing National Development Plans as statutory policy documents that outline the development policies and strategies to be pursued by the Government and other development agencies over the medium term. Since independence nine development plans have been published, latest of which is the National Development Plan 2002-2008. Besides the national development plans the Government has been preparing and implementing other long, medium and short-term regional and sector specific plans.

The development plans and sessional papers address issues related to macro economic performance of the country. Notable examples of sessional papers recently published are: 1) National Poverty Eradication Plan (NPEP) of 1999 presenting the contemporary long-term framework of tackling poverty, 2) subsequent Poverty Reduction Strategy Paper (PRSP) of 2001, which gives short-term instruments of implementing the NPEP, and 3) The Economic Recovery Strategy (ERS[6]) for Wealth and Employment Creation, 2003-2007 which came as the development strategy and policies of the current government to pursue in the five-year terms. The ERS is well synthesized with the Poverty Reduction Strategy Paper (PRSP 2001-2004) with thematic focus on employment (for the structure, see Figure 2.2.1).

Figure 2.2.1 Structure of the Economic Recovery Strategy



The ERS is currently the overarching development strategy in Kenya, which even supercedes the latest National Development Plan 2002-2008 in cases of any discrepancy between the two, and envisages a strengthening of the macroeconomic framework, a more responsible fiscal stance and the unleashing of private sector participation and investment. The strategy upholds that reducing poverty by providing people with income earning opportunities is the surest way of empowering the people to be responsible of their destiny and thereby putting economic recovery back on the track. The strategy identifies four pillars as the base of key policy actions necessary to spur the recovery of the economy:

- First, rapid economic growth is required but in an environment of macro-economic stability, for which measurers are proposed for enhancing revenue collection, expenditure restructuring and a monetary policy that will support the achievement for economic growth without putting into jeopardy price stability objectives;
- The second and more fundamental pillar is the strengthening of institutions of governance, which is to underpin sustainable development;
- The third pillar is rehabilitation and expansion of physical infrastructure since poor infrastructure has been identified as a primary factor that makes production cost excessively high, and thereby undermining the competitiveness of locally produced goods; and
- The fourth pillar is the investment in the human capital of the poor since it is believed that a well-educated and healthy population is an important factor in enhancing productivity and the overall performance of the economy.

[6] In December 2002, a new government under the National Rainbow Coalition (NARC) took office and immediately embarked on the process of preparing an economic recovery strategy, focusing on reviving the economy and creating employment. The ERS presents a road map for economic recovery during the five-year term. The ERS takes into account existing government policy documents, particularly the PRSP and NARC's Manifesto and Post-Election Action Plan.

2.3 National and District Development Plans

Current district development plans cover a period from 2002 – 2008. The plans were prepared in the backdrop of the theme of the 9th National Development Plan, which is "Effective Management for Sustainable Economic Growth and Poverty Reduction". As the Economic Recovery Strategy (ERS) was established in 2003, the national and the district development plans may have had to be modified according to the overarching national development policy which is the ERS. However, no modification was done and even if so the current development plan is still working as the guiding statutory policy document that outlines the development direction together with priority projects/ programmes over the plan period as far as no contradiction with the ERS.

2.3.1 Achievement of the Previous Development Plan

The current district plan outlines the achievement of the previous plan period of 1997 – 2001. The main thrust of the 1997- 2001 plan was to promote structures and policies to alleviate poverty through faster economic growth. In this regard, industrialization was seen as the best way of creating employment, market for agricultural raw materials and finished goods and to generate income for farmers, fishermen and other primary producers. The Plan was actually based on the Sessional Paper No.4 on Industrial transformation to the Year 2020. The expected output was however not achieved as planned; Nyando District had achieved about 30 percent, 41 projects implemented against 138 projects proposed in the period 1997-2001 as shown in Table 2.3.1, and Homa Bay had achieved only about 25 percent (not specifying the number of the implemented projects).

Table 2.3.1 Review of 1997- 2001 Nyando District Development Plan Implementation

Department	No. of Projects Proposed	No. of Projects implemented	% of Implementation	Total Cost of Prj Implemented, MKsh
Agr. & Livestock	11	4	36	1.79
Veterinary	5	NA	NA	NA
Cooperatives	1	1	45	2.25
Education	14	11	78	NA
Roads	18	3	16	NA
Water	9	7	19	38
Probation	2	0	0	Nil
Children	2	0	0	Nil
Social Services	4	0	0	Nil
Culture	3	0	0	Nil
Sports	1	0	0	Nil
Adult Education	7	1	14	10
Applied Technology	3	0	0	Nil
Fisheries	7	1	14	NA
Commerce & Industry	2	0	0	Nil
Environment	3	0	0	Nil
Forests	10	0	0	Nil
Health	20	10	50	NA
Local Government	7	0	0	Nil
Energy	5	1	10	NA
Police	1	1	100	NA
Planning	3	0	0	Nil
Total	138	41	29.7	52

Source: Nyando District Development Plan 2002 - 2008

Low achievement of the previous plan is no exception even at the national level. The 9th National Development Plan reviewed the achievement of the 8th National Development Plan and found out that overall 32 percent of the projects were implemented on schedule. It also discovered, among projects/

programmes, intensive resource use investment and research programmes were least likely to be implemented while budgetary and financial related measures were the most likely to be implemented during the period of poor resource availability.

The 9th National Development Plan says that the implementation of the previous plan was constrained by financial resources availability and allocation, legal and institutional impediments, and human resource capacity limitation. The Homa Bay District Development Plan says that the low achievement was mainly due to poor infrastructure, lack of funds, exploitation of farmers and fishermen by middlemen, lack of credit facilities to small-scale entrepreneurs and poor weather. Question now remains on the officers who worked out the development plan without sound implementation mechanism and who have not planned feasible and implementable plan, endorsed by the financing capability.

2.3.2 Major Constraints identified under the Present District Development Plan

The present district development plan discusses major development challenges that are to be overcome by implementing the proposed projects/ programmes. Nyando District addresses population growth, high prevalence of poverty, HIV/AIDS, gender inequality and disasters like floods, among others. Homa Bay District points out population growth, high prevalence of HIV/AIDS, gender imbalance, disaster management and environmental conservation as cross-cutting issue and also addresses poor infrastructure specifically roads, low human resource potential, low productivity, and lack of credit facilities. Following are the brief summary of the major challenges that the districts identified during the preparation stage of the present District Development Plan:

1) Nyando District

Flood: Frequent flooding has been an issue of major concern and posed serious challenges to the development of other sectors. The floods affect agricultural production and has been the main cause of damage to the road network. Flooding affects planting and survival of planted crops, which sometimes get swept away by the ravaging floods. During floods, outbreak of diseases such as cholera, dysentery and typhoid become rampant. At this time also the environment promotes mosquito breeding hence high cases of malaria in the district. The flood also destroys houses, pit latrines, etc.

Sugar Cane Industry: One of the challenges in the district is the problem in the sugar industry. There are three sugar factories in the district, and Muhoroni Sugar Factory was not operating in the year the Plan was prepared. Another factory in Miwani Division, that is Miwani Sugar Factory, was shut down in year 2001. However Muhoroni Sugar Factory got under receivership and revived the operation although not yet to the full capacity. Sugarcane is a very good cash crop for the farmers in the area, but the closure of the factories has led to less income to the people in the divisions.

Population Growth: Major characteristics for the population are rapid population growth rate and very many youth. The population as at 1999, the latest census year, was 299,930, which give inter-census population growth rate of 3.4 percent per annum. Assuming this rate of growth is maintained, the district's population is projected to increase to 407,300, an increase of 36%, by the end of the plan period of year 2008. This rapid growth will exert pressure on the available resources and have negative effects on development. Another character is the high percentage of the youth who fall below 15 years of age, occupying over 44 percent of the total population, (which however is the same as that of National level). This implies that the resources be directed towards meeting basic social services for the young members of the population.

Prevalent Poverty: The Plan refers to the Welfare Monitoring Survey of 1997. It is estimated that there were about 199,318 individuals below the rural food poverty line in the District, which account

for about 66 percent of the district's population. Also, overall rural poverty, a poverty index including expenditures on non-food items, is estimated at 206,776 individuals or 68.9 percent of the population. The division that is most affected by poverty is identified as Miwani. The major causes of the poverty in the district is said to be: poor agricultural technologies, lack of proper storage facilities, erratic rainfall, poor and inaccessible road network, frequent floods, problems with sugar, rice, cotton, etc.

Prevalent HIV/AIDS: HIV/AIDS has grown to be a major crisis in the district not so much because of the high prevalence rate but due to the rising trend of infections, high death rate of economically productive generations and thereby leaving many orphans. The rate has risen from 19 percent in 1990 to 29 percent in 1999. Strong Luo cultural beliefs, poverty in the community and stigmatization of infected/affected people are said to be the hindrance to control the HIV/AIDS. HIV/AIDS really affects human resources as well, for example the Plan says the education sector loses about 4 teachers every month.

2) Homa Bay District

Poor Infrastructure: Most roads in the district are earth roads. During the rainy season, most of them become impassable. Human transport and transportation of farm produce become difficult especially during the rainy season. This affects perishable goods like fish, fruits and vegetable production. The district is also hindered by a small coverage of water system. It is needed to rehabilitate and make operational its existing water facilities to cover the areas which are relatively underserved, particularly those which do not have potable water and are therefore prone to frequent incidences of water-borne diseases. Health facilities are also not enough to cover needy people.

Population Growth: Major characteristics for the population are rapid population growth rate and very many youth. The population as at 1999, the latest census year, was 288,540, which gives inter-census population growth rate of 2.7 percent per annum. Assuming this rate of growth is maintained, the district's population is projected to increase to 367,909, an increase of 28%, by the end of the plan period of year 2008. Another character is the high percentage of the youth who fall below 15 years of age, occupying 47 percent of the total population (it is 44 percent at National level). The elderly, aged 65 and over, were 3.7 percent in 1999.

Prevalent Poverty: In Homa Bay District, the poverty level stood at 77 percent, which is above the Nyanza Provincial level of 63 percent and national level of 52 percent according to 1997 WM III survey. Except for Asego Division, the poverty dimensions in the remaining five divisions were characteristic of rural poverty. During the district PRSP consultations in February 2001, the residents gave the main reasons for the high level of poverty in the district as local passive attitude towards manual work, poor fishing and agricultural marketing methods, exploitation by middlemen, inaccessibility to credit facilities, high incidence of HIV/AIDS related deaths, etc.

Prevalent HIV/AIDS: In Homa Bay District, HIV/AIDS was first diagnosed in 1986. Since then, the prevalence has continued to rise over 30 percent in pregnant women. The main factors promoting the rapid spread of the pandemic in the district are widow inheritance, loose lifestyles, negative cultural beliefs, pre-marital sex, etc. The education sector is already experiencing high dropout rates of orphans whose parents died of AIDS related diseases. They cannot stay in school but have to work to survive. The Plan says the sector's main challenge is how to educate the rest of the community on how to avoid infection.

2.3.3 District Development Strategies and Priorities under the Current Plan 2002 - 2008

The current district development plan spells out the district development strategies and priorities together with programmes and projects. The plan was prepared in line with the PRSP/ MTEF and

National Development Plan, covering such broad sectors as: 1) Agriculture and Rural Development, 2) Physical Infrastructure, 3) Tourism, Trade and Industry, 4) Human Resource Development including health and education sections, 5) Information Communication Technology, and 6) Public Administration, Safety, Law and Order. Of them such three sectors as Agriculture and Rural Development, Physical Infrastructure, Human Resource Development may be considered very relevant to the study districts. How to respond to the district development for the three sectors is briefly summarized below:

1) Nyando District

In agriculture sector, the district is to enhance promotion of small scale production, fruit trees (mangoes, paw paw and citrus) production and organized marketing, irrigated vegetable production and marketing, diversification from sugarcane as the key cash crops to other crops such as groundnuts, cotton, and green grams in Miwani and Muhoroni Divisions and promotion of agro-forestry as a commercial entity through production of tree products e.g. timber, poles, fuel wood. The forestry sector is to establish individual tree owned nurseries in which farmers sell seedlings and get some income. Individual farmers will also be encouraged to plant woodlots in their farms.

Physical infrastructure sector mainly deals with roads and energy. The roads sector is to maintain the existing roads network in Nyando District to help spur economic growth. The sector will also rehabilitate roads and bridges to facilitate transportation of sugarcane to the factories and other farm produce to markets. For electricity, the Kenya Power and Lighting Company has approximately 68 km of 33,000 volts and 55 km of 11,000 volts of power lines. The government currently has an on-going Rural Electrification Project in the district, which is to cover the district headquarters, Awash trading center, Awash Catholic Mission, Awash secondary school and the surrounding area.

Human resource development sector is composed of health including public health, education and social services. The Ministry of Health puts an emphasis on control of mosquitoes through public health department in order to reduce the incidence of malaria, provision of pit latrines through demonstrations, provision of water through quality monitoring services, etc. Education sector persistently sensitizes all the stakeholders in education to ensure they contribute positively in provision of quality education. Social sector is determined to empower communities to identify their problems, mobilize their own resources and improve their standards of living.

Based on the brief summary above, the current district development plan presents the priorities and strategies by sub-sector and further proposes a list of projects and programmes. Shown in the Table 2.3.2 is the summary of the priorities by sub-sector (noted here is that prioritization among the sub-sectors is not done, nor among the sector).

2) Homa Bay District

The agriculture sector comprises the land for food and cash crop production, water for domestic and livestock use, fisheries for food and revenue earning. To achieve sustainable and equitable rural development, the sector is to employ effective and efficient participatory extension and technology service, undertake affirmative action in agriculture and other sub-sectors; advocate for efficient rural finance and credit supply system for smallholders; implement sound land use, water and environmental policies; protect water catchments areas; and improve the governance of the cooperative sub-sector by empowering farmers.

In physical infrastructure sector, the district has prioritized key link roads and bridges requiring urgent attention to ease road transport problems in the district. For communication, both Telkom (K) Ltd. and Postal Corporation of Kenya have continued to avail landline telephone and postal services. This is supplemented by courier services offered by Akamba Public Road Services. Public fax services

are offered by Postal Corporation of Kenya while four private computer firms offer E-mail and Internet services (as at 2006, only two internet café is operating in Homa Bay).

Human resource development sector is to undertake training programmes at various levels, provide health care and promote preventive health services to ensure the spread of human resource threatening disease such as HIV/AIDS. The health of the human resource is taken care of by facilities managed and supervised by the District Health Management Board. Teachers, provided by the government and other stakeholders, are guided by the District Education Board to ensure adequate attention is given to syllabus completion.

Based on the brief summary above, the current district development plan presents the priorities and strategies by sub-sector and further proposes a list of projects and programmes (see Table 2.3.3):

Table 2.3.2 District Priorities by Sub-sector for Three Major Sectors in Nyando District

Sector	Sub sector	Priorities
Agriculture & Rural Development	Crop Development	Promotion of food and cash crops
		Improve marketing channels
		Improve on-farm storage
	Livestock Development	Livestock production
		Improved marketing channels for products
	Irrigation Development	Promote irrigation to supplement rain fed agricultural production
	Agr. Research and Develop't	Promote agricultural research
	Environment	Promote rural afforestation
		Promote agro-forestry
	Rural Water Supply	Increase accessibility to potable water
		Enhance water supply from existing facilities
	Cooperatives	Revive dormant societies
		Broaden financial base of societies
	Land Administration, Survey and Human Settlement	Open lands office in the district
		Survey and plan all trading centres in the district
	Food Security	Ensure availability of food at all times
	Fisheries	Improve fish catch and maintain high quality of fish
Physical Infrastructure	Roads	Maintain existing road network to good standard
		Repair damaged road sections to restore communication
		Repair damaged bridges
		Upgrade important roads in the district
	Energy	Supply electricity to public institutions & trading centres under rural elect' Program
	Communication	Provide quality postal services
	Urbanization	Planning of trading centers
		Provide infrastructure and services such as roads, water, electricity and telephone
	Transport	Improve transport communication within the district
Human Resources Development	Health and Nutrition	Malaria prevention and treatment
		Improvement of infrastructure and equipment in health facilities
		Reduction of ill health and mortality resulting from immunizable diseases
		Improvement of management of childhood illnesses (IMCI)
	HIV/AIDS	Reduce incidence & prevalence of environmental communicable diseases
		Prevention of HIV/STI/AIDS prevalence rates
	Education and Training	Equip all schools with permanent classrooms
		Have at least 2 science laboratories in every secondary school
		Optimise utilization of existing school facilities
	Shelter and Housing	Improve on the condition of existing houses
		Increase houses in the urban areas
	Culture, Recreation and Sports	Encourage production of cultural artifacts and folklore
		Promote sports and recreational activities

Table 2.3.3 District Priorities by Sub-sector for Three Major Sectors in Homan Bay District

Sector	Sub sector	Priorities
Agriculture & Rural Development	Crop Development	Increase area under food crops
		Use high yielding varieties which have early maturity and drought escaping varieties
		Increase area under cash crops cultivation
	Research and Development	Effective pest management in sorghum and maize
		Improve crop yields and farmer incomes through maize
	Livestock Development	Improve on dairy management practices on feeding, disease/pest control, housing and thus improve on their production potential
		Stimulate commercial poultry production to improve on the income at the farm levels
	Rural Water Supplies	Ensure that all residents in the district have access to clean and potable water
	Agr. Research and Dev.	Improve agricultural production, minimize post-harvest wastages and come up with appropriate storage and marketing structures
	Cooperative Development	Supervision of cooperative societies
		Enforcement of the cooperative Act, rules and by-laws
	Food Security	Bulk food security crops which are resistant to pest, e.g. Cassava
	Irrigation Development	Popularize irrigation activities in the district so that small-scale farmers are enable to graduate from bucket to pump fed irrigation systems
	Agricultural and Other Rural Financial Services	Increase the number of agents providing credit to farmers
		Increase number of farmers' groups to facilitate acquisition of credit
		Encourage farmers to own collaterals with which to secure loans
	Agricultural Marketing	Improve the market facilities, e.g. the construction of stalls
	Environment	Developing sustainable system of land use
	Fisheries	Law enforcement to ensure use of right gear and fishing methods
		Improve handling to reduce post-harvest losses and protection of the breeding ground
Physical Infrastructure	Transport	Provide enough parking space for buses
	Communication	Provide public call boxes in divisions that do not have them
		Establish sub-post offices in areas far from postal services
	Energy	Maximize utilization of newly installed transformers at Rodi Kopany and at Opapo Markets
	Major Water Works and Sanitation	Complete the rehabilitation of NORAD and Homa Bay Water Supply to provide enough water for residents of Homa Bay Town
		Rehabilitate Homa Bay Town sewerage plant and connect more residents to the sewer
	Roads	Maintain all the classified and minor roads to the required standard so as to allow easy mobility for all kinds of traffic
	Buildings	Erect buildings which meet the set standards
	Urbanization	Draw to completion all development plans for upcoming urban centers and make provision for markets, parks, schools, churches and other public amenities
Human Resources Development	HIV/AIDS	Promotion of behaviour change
		Treatment and support of continuum of infected and affected
	Education and Training	Provide quality education for national development and eradicate illiteracy
		Provision of post literacy with a view to curbing the problem of relapsing back into illiteracy
	Health and Nutrition	Promote preventive health care services
		Promote maintenance of kitchen gardens by the locals to uplift their nutritional status
	Shelter and Housing	Encourage locals to put up approved housing units for better ventilation, sanitation and health
	Population	Promote use of family planning contraceptives to control population growth
	Culture, Recreation and Sports	Social welfare/assistance to the needy/destitute children
		Vocational rehabilitation and resettlement of the disabled
		Enhance development of cultural arts and creativity
		Preserve cultural heritage
		Provide information and entertainment through performing arts
		Improve the existing stadium in the district

2.4 Decentralization Process in Kenya

At the time of independence in 1963, Local Authorities were relatively powerful and well functioning institutions with a reasonable own revenue base supplemented with grants from the Central Government. The Local Government Act, first issued in 1963 described a wide range of activities that local Governments were allowed to undertake. However, soon after independence a process to centralize power by the national government and to take away major powers and functions of Local Government Authorities[7] started. The Central Government obtained a tight control over the Local Authorities through appointment of key staff and approval of budgets.

Through the 1970s and 1980s, the position of the line Ministries and the Provincial Administration became stronger, whereby the latter apart from being an overseer of law and order also became the coordinator of development. During this period the line Ministries became the main service providers, working through the offices at the province, district and local level and directly managing service delivery. Development Committees were formed to try and coordinate development at lower levels. These committees such as the District Development Committee (DDC), Divisional Development Committee and Location Development Committees were not given authority over funding and remained toothless to mobilize the line ministries.

After sometimes on that, District Focus for Rural Development Strategy (DFRD strategy) was launched in March 1983 that tried 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:

- 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, and
- Encourage local participation in order to improve problem identification, resource mobilization and utilization, project design and implementation[8].

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. The DFRD was a step towards the right direction envisaging decentralization like many other policies in Kenya. 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 had contributed relatively little, given the poor performance of the agricultural sector for the last quarter century. Development funds had seldom reached the districts in their full amount, let alone the projects. Decision-making on development project planning and implementation had not been accelerated. The target beneficiaries, the poor and vulnerable, were still largely excluded from direct involvement in the process of project design and implementation. The projects were therefore seen as Government projects rather than community projects.

Then another move came in; that is Kenya Rural Development Strategy (KRDS). The Government of Kenya[9] embarked on the preparation of the Kenya Rural Development Strategy (KRDS), which was to cover the period from 2002 to 2017. The first draft of KRDS came out in July 2001 (but the

[7] Examples are (a) Transfer of responsibility for primary education and health (b) abolition of Graduated Personal Tax in 1974 and (c) Subdivision of Local Authorities in 1980s and early 1990s making them more vulnerable and unviable entities.
[8] Office of the President, "District Focus for Rural Development", March 1995, Chapter One, paragraph 1.1.
[9] The Ministry of Agriculture and Rural Development, Ministry of Finance and Planning, Ministry of Environment and Natural Resources and Ministry of Lands and Settlement

final form of the document has never been produced). 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 KRDS presents its vision as "sustainable and equitable rural development for all".

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. This was actually talking about devolution, entailing the transfer of the fiscal authority from the central government to the local level that is district.

Further, the KRDS recommended 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 the purpose above, it suggested 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.

The decentralization envisaged in the KRDS is devolution that is the most advanced type of decentralization. The KRDS has not been passed by an act of parliament, nor was the final document printed out. However subsequent to the KRDS is the Economic Recovery Strategy for Wealth and Employment Creation (ERS, 2003) for the period from 2003 to 2007, which sells out the development strategy and the Manifesto of the NARC Government. The NARC Government also drafted a new Constitution which tried to introduce the most advanced type of the decentralization that is the devolution (see box) with the district being the authorized entity, though it was aborted by national referendum in November 2005.

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, and the administrative decentralization has three forms as:

1. 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.
2. 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.
3. 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 districts that elect their own district commissioner and assembly members, raise their own revenues, and have independent authority to make investment decisions.

2.5 Development Administration and its Institutionalization

At national level or central government level, the Parliament is the highest organ responsible for legislation and policy in the country. The Government has 26 ministries each headed by a Minister. These Ministers together with the Attorney General and the Vice President constitute the Cabinet chaired by the President, which is the highest policy making Executive arm of the Government. The Permanent Secretary heads the Executive arm of the Ministries and the ministries are divided into technical departments responsible for different roles and services they are supposed to offer.

Kenya is divided into eight Provinces headed by Provincial Commissioners. The Provinces are

further divided into 72 Districts headed by the District Commissioners. In each Province there are departments belonging to the various Ministries. Nyanza Province is divided into 12 administrative districts (Bondo, Gucha, Kisii Central, Nyamira, Kisumu, Homa Bay, Rachuonyo, Nyando, Siaya, Suba, Kuria and Migori). The role of the province has been diminished over time and the development planning and its implementation are now centering on district though decentralization entailing transfer of financial authority to the district has not yet come. In short, the role of the province is now somewhat coordination among the districts under its jurisdiction.

Provincial administration is a system of Government that brings government administration closer to the people (functions of the provincial administration is shown in the box). Each Province is made up of several districts, which are themselves divided into smaller administrative units being Divisions, Locations and Sub-Locations in that order. Administratively, the Province, District, Division, Location and Sub-Location are under the jurisdiction of a Provincial Commissioner (PC), District Commissioner (DC), District Officer (DO), Chief, and Assistant Chief respectively.

Functions of Provincial Administration:

- Coordination of government functions in the field;
- Maintenance of Law and order;
- Harmonization, coordination and implementation of government policies and programmes;
- Mobilization of local resources for development;
- Dissemination of government policies;
- Organization of state functions;
- Coordination of disaster and emergency response; and
- Resolution of conflicts and peace building.

At each of these administrative levels, there are line departments for the represented ministries, though not all the ministries at all levels, which provide technical services. The deployment of technical officers to lower administrative units is dependent on the available staff and specific technical services to be delivered. Technical officers report administratively to the provincial administration (namely, PC, DC, DO and chiefs), but technically they report to their seniors within the departments at the headquarters of their respective line ministries at the division, district, province, and in Nairobi. The following section briefly discusses the current development administration system at the district, divisional and lower levels such as location and sub-location.

2.5.1 District Level

The Ministry of Planning and National Development (MoPND) is responsible for development planning at all levels. At the district level planning is well articulated under the District Focus for Rural Development Strategy (DFRDS). In this process each government department prepares its five-year development plan, which is then included as part of the district development plan prepared under the supervision of the District Development Officer (DDO). The district development plan is subsequently incorporated into the five-year[10] national development plan. The district, as a geographical and administrative unit, forms the basis of planning and implementation of development programmes under the guidance of the main planning structure, the District Development Committee (DDC). However, funds from the Government do not pass through the DDO, but go straight to the respective departments.

The DDC is chaired by the DC, and composed of all the technical department heads, members of the parliament, heads of the councils, representatives of NGOs which are working in the district. The DDC provides the framework for balancing sectoral against District considerations, with development committees at each administrative level, i.e. District, Division, Location and sub-location. The

[10] The present National and District Development Plans cover 7 years, which is the first one as opposed to the previous 5-year plans. This is because the plans were meant to link to the tree year MTEF Framework. The 7-year plan addresses the medium term poverty reduction challenges over the first half of the National Poverty Eradication Plan (NPEP) of 1999, which overlaps with two MTEF budgeting cycles, with an extra rollover year.

committees are charged with the role of facilitating coordination and enabling community concerns to be taken into account. At the District level, the District Executive Committee (DEC) and the District Planning Unit are specialized subcommittees of the DDC. The DEC is composed of all the technical department heads and chaired by the DC, and the members of the DPU are same as DEC but chaired by the DDO.

2.5.2 Divisional level

As mentioned earlier, the Districts are subdivided into Divisions, which are administratively headed by District Officer (in charge of the division). Nyando District is subdivided into five Divisions (Miwani, Muhoroni, Nyando, Lower Nyakach and Upper Nyakach) while Homa Bay District is subdivided into six Divisions (Asego, Kobama, Ndhiwa, Nyarongi, Rangwe and Riana). At the divisional level, there are line departments for most of the represented ministries that provide technical services. Some of the commonly represented ministries are Agriculture, Livestock and Fisheries, Natural Resources and Environment, Water and Irrigation, Education, Science and Technology, Gender, Sports and Social Services and Defense and National Security.

For planning purposes there is a Divisional Development Committee (DivDC)comprising heads of respective Government departments represented in the Divisions, representatives of NGOs, CBOs and Faith-based organizations operating in the respective divisions. The Councilors representing Wards in the divisions also attend the DivDC. The DivDC discusses priority projects/programmes received from the Location Development Committees, prioritize them and then forward them to the DDC for consideration.

2.5.3 Location and Sub-Location level

The Divisions are subdivided into Locations, which are subsequently subdivided into Sub-locations. The Chiefs head the Locations while the Assistant Chiefs head the Sub-locations. The Sub-locations are divided into Villages (from administrative perspective based on population) or Clans (from a genealogy perspective). Elders head both Clans and Villages. The Chiefs and Assistant Chiefs are part of the provincial administration and hence their functions are drawn generally from those outlined in the aforementioned box. The duties of Chiefs/Assistant Chiefs are clearly stipulated in the Chiefs Act (Cap. 128 of the Laws of Kenya Revised Edition 1998). These include security, coordination of development activities, dissemination of government policy and resolution of conflicts and peace building.

In each Location there is a Location Development Committee (LDC) constituted of about five members from each Sub-location and three members appointed by the Chief. The LDC receives project proposals from the Project committees at Sub-location level, reviews them and then shortlists them according to priorities and send them to DivDC or to the Constituency Development Committee. Constituency Development Fund (CDF) started in 2003 upon the NARC government being present. If a project concerns entire members of the community, and not to a specific group, the proposal can be sent to CDF committee for their perusal and consideration.

CHAPTER 3 THE STUDY AREA IN REGIONAL SETTINGS

This chapter briefly discusses the geographical and socio-economic settings of the Study districts from a regional perspective. It starts with spatial settings of the districts: where they are located and how they are linked to outside of the districts in terms of boundary, roads leading to regional centers, etc. Topography and natural conditions such as rainfall and temperature are also briefly explained, followed by the macro-economic situation, demography and development indicators such as life expectancy, mortality rate, in- and out-migrations, poverty indices, etc. The last part discusses the rural society, which may be said to be in a social transition period. The discussions here are of broad basis, and the detailed presentation by district comes up in PART II and PART III for Nyando and Homa Bay respectively.

3.1 Spatial Alignment

Nyando and Homa Bay Districts are part of the 12 districts that form the Nyanza Province. Nyando District borders Kisumu District from which it was curved out in 1999. The district borders Kisumu District to the West, Nandi District to the North, Kericho District to the East and Rachuonyo District to the South. The district has a small shoreline to the southwest where it touches Lake Victoria. Homa Bay District used to be the center of South Nyanza District which is now divided into 5 districts; namely, Rachuonyo, Suba, Homa Bay, Migori, and Kuria. The district borders Rachuonyo District to the North, Kisii District to the East, Migori District to the South and Suba District to the West.

Nyando District covers an area of 1,168 km^2 including 71 km^2 of lake water surface. Homa Bay has a total area of 1,160 km^2, out of which 29.5 km^2 is lake water surface. The two districts together cover a total area of 2,329 km^2 which occupies 19 % of the Nyanza Province, and are characterised with varied environmental features such as swampy plains, shorelines, upland areas, hilly areas, etc.

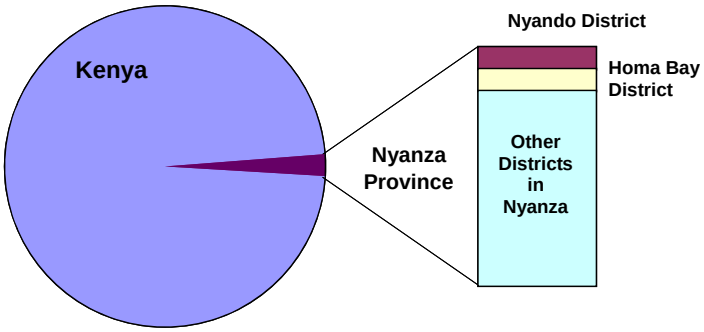


Figure 3.1.1 Nyando and Homa Bay Districts in Area Settings

Table 3.1.1 Nyando and Homa Bay in Area Settings

Category	Total Area, Km2	Water Mass, Km2	Land Area, Km2	Remarks
Kenya	592,909	11,230	581,679	
Nyanza Province	12,547			2% of Kenya
Nyando District	1,168.4	71.0	1,097.4	9% of Nyanza
Homa Bay District	1,160.4	29.5	1,130.9	9% of Nyanza
Nyando+ Homa Bay	2,328.8	100.5	2,228.3	19% of Nyanza

Source: District Development Plan 2002-08, 1999 Census

An international trunk road, named A1, starts at the border with Tanzania and runs via Kisii toward north and finally joins national trunk road B1 at suburb of Ahero Town. The B1 national trunk road runs between Kericho town and Busia town, a border town with Uganda, through Kisumu City. Aside from the two major trunk roads, Nyando is also given C34, a primary road, which starts at Kisumu City and runs in the sugarcane belt area. Though the condition of this C34 is not well maintained, it still serves transportation of sugarcane. Traversing the C34 toward Nandi hills is another primary road called C37, which is well maintained. Rural roads in Nyando are not in good conditions and very often become impassable during rainy seasons, yet the district can be said to be

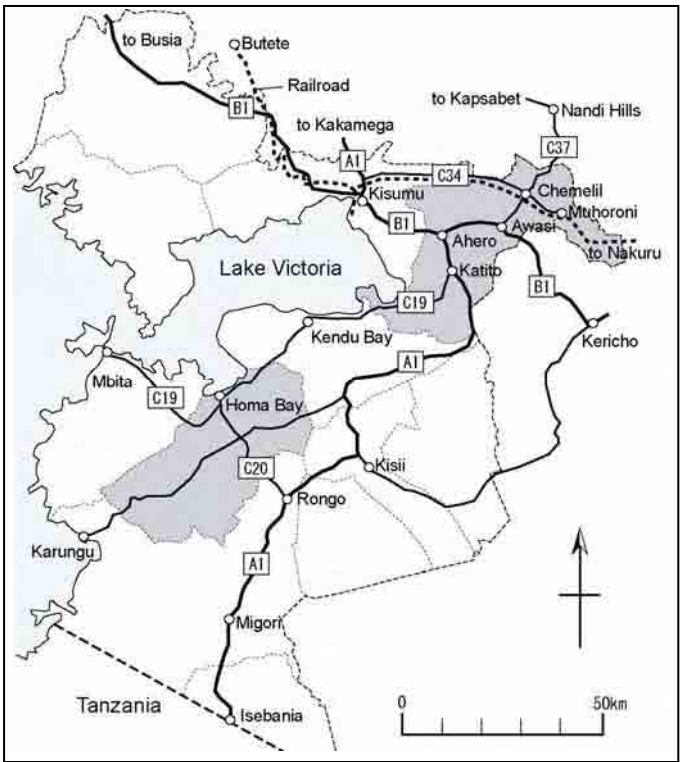


Figure 3.1.2 Spatial Alignment of the Study Area

bestowed with relatively rich road network. In addition, railroad service is also available in Nyando, which runs from Butere Town, located about 50km north western direction from Kisumu, to Nukuru where it joins international railroad network.

Homa Bay District may be said to be somewhat being left behind from a major road network. The international trunk road A1 runs almost in parallel along the district borders with Migori and Kisii with a distance of about 10 km. The traffic on the A1 seldom branches off to Homa Bay District, thus leaving the district somewhat isolated. C20, which is the primary road connecting Homa Bay Municipality with the A1 international trunk road, is very poorly maintained, lessening the opportunity of benefiting from the traffic on A1.

There is a lakeshore road, called C19, connecting Katito Town in Nyando District and Homa Bay Town via Kendu Bay in Rachuonyo District. The condition was in fact so bad that the people traveling to Homa Bay often opted to travel the way passing A1 though it took a little longer time than the lakeshore road. As of March 2007, renovation of C19 is almost finished which however covers between Katito and Kendu Bay only. This renovation is planed to finally reach Mbita Town through Homa Bay Town. Upon completion of all the renovation, Homa Bay could have a great accessibility to Kisumu, the capital of the Province.

3.2 Topography and Natural Condition

Since both districts have shorelines, the lowest altitude is therefore same as the water surface level of Lake Victoria, which is 1,134m. Nyando District has flat lowlands, which gradually changes to steep slopes in the highlands. The largest lowlands in Nyando are called Kano Plains which extend deep into Kisumu District. Total area of this Kano Plains is estimated at about 73,000 ha, which is very often hit by flood. Higher areas are formed in Muhoroni and Upper Nyakach Divisions. These areas have more reliable rainfall making them high potential areas for agricultural production. Since Muhoroni and Upper Nyakach Divisions are located at the northernmost and southernmost parts of the district respectively, Nyando District forms huge basin opening to Lake Victoria.

Major rivers in Nyando District are: Nyando, which is the biggest one, Awach-Kano and Sondu Miriu Rivers. Nyando River basin mainly lies in Kisumu, Nyando, Nandi South and Kericho districts, and is bounded by Latitude 00 7' 8"N and 00 24' 36"S and Longitude 340 51'E and 350 43' 12"E. Lake Victoria is to the West, Tinderet Hills in the East, Nandi Escarpment to the North and Mau Escarpment to the South East. The basin has a total area of 3,450km^2 and a river course of 153km and drains into Lake Victoria at Winam Gulf. The altitude of the basin ranges between over 3000 m in the highland areas and about 1,130 m at the lakeshore. Awach Kano River originates in Kericho, flowing down to the Nyando basin and finally merging the Nyando River at a tail portion. Sondu Miriu River forms the district boundary at its most southern part with Rachuonyo District.

In Homa Bay District, altitude gradually rises alongside the border with Suba District forming an escarpment down to the Ruma National Park and ascends from the Lake toward Kisii District. Therefore two high lying areas can be found in the district; one in south-western part and the other in north-eastern part. Higher lying areas receive relatively rich rainfall while low lying lands like lower parts of Rangwe Division are sometimes hit by drought. In between the two high lying areas, River Kuja is running which originates behind the Kisii Town and flows into Homa Bay District while collecting water from smaller catchment areas through Migori District and then drains into Karungu Bay of Lake Victoria. Second biggest river is Awach Tende, which runs along the border with Rachuonyo District from its mid to down stream reaches. Maugo River, which merges with Awach Tende, is also important for farmers who cultivate paddy in the downstream.

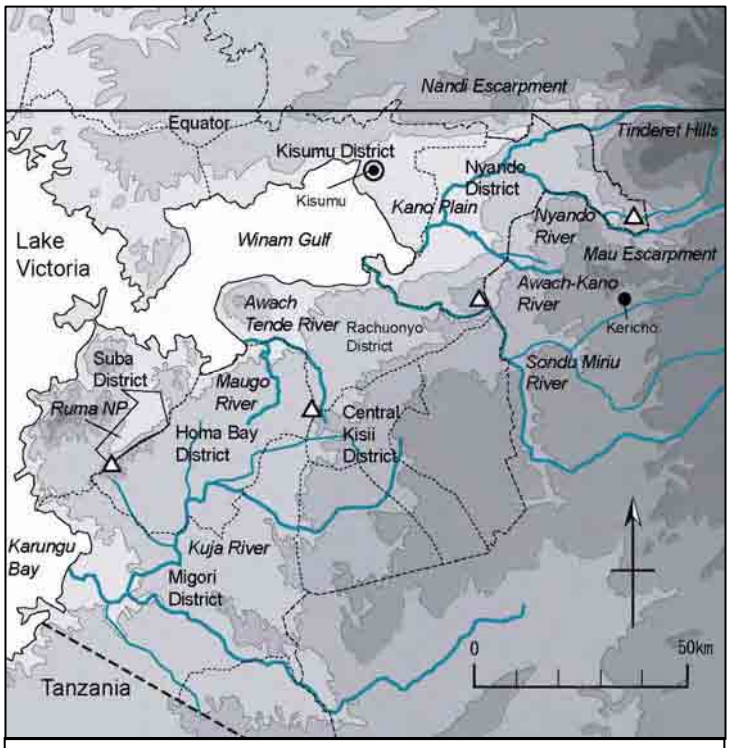


Figure 3.2.1 Topography of & around the Study Areas

Both study districts have an equatorial type of climate, which is modified by the effects of altitude, relief and the influence of the Lake Victoria water mass. Because of the cooling influence that the Lake exerts, temperatures are a little lower than a typical equatorial type climate. Lakeshore area has less rainfall while areas located away from the lake are blessed with more rainfall especially as elevation increases. In general, western areas nearby the lakeshore receive an average annual rainfall of between 700 and 800 mm while eastern area receives about 1,500 to 1,800 mm. Long rainy season is from late March to May and the short rain season is experienced between October and November. In the drier western part of the districts, two dry seasons may be experienced between December and February and between June and September. The potential evaporation is high and the mean annual average is around 2,000 mm per annum.

Temperatures are moderate and generally vary between approximately 15 and 30 degrees Celsius with an average value of around 20 degrees Celsius though it is dependent mainly on altitude. Although temperature get low in the early morning and increases during afternoon time, the monthly average temperature fluctuates within a very small range since the equator runs in the area. Figure 3.2.2 shows the variation of monthly average maximum and minimum temperatures with the average monthly rainfall recorded at Kisumu Station. It shows small range of variation of the temperature and also two

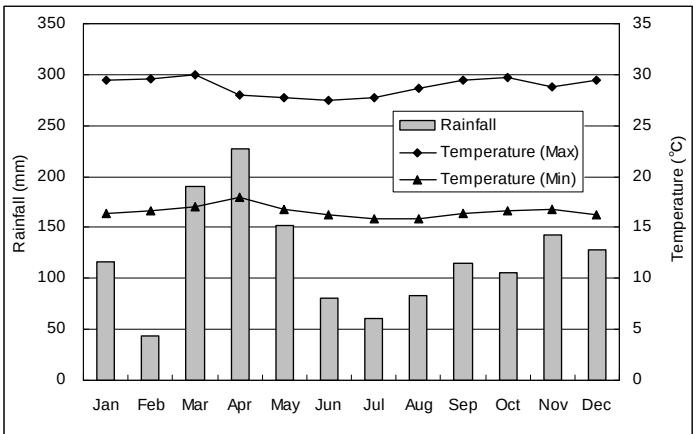


Figure 3.2.2 Rainfall and Temperature at Kisumu

rainy seasons as aforementioned. Highest maximum temperatures appear in March and October just before the long and short rainy seasons start. Lowest temperatures show up in July and August. Maximum monthly rainfall is received in April, which sometimes gives flood to the population residing at lower places.

3.3 Demography and Development Indicators

The Kenya 1999 Population and Housing Census, with the theme of "counting our people for development", was carried out in August 1999. This census was the sixth national census, after those conducted in 1948, 1962, 1969, 1979 and 1989. Based on the 1999 census, Analytical Report Volume VII made population projections taking into account past trend of mortality and fertility plus the effect of HIV/AIDS. Table 3.3.1 summarizes the populations and densities, and Figure 3.3.1 shows the densities including others districts within Nyanza Province.

Table 3.3.1 Population Projections by Year

	Census Year	Onset of the Present DP	Onset of this Study	Completion of this Study
Year	1999	2002	2005	2007
Population				
National	28,686,607	31,517,142	33,445,119	34,652,581
Nyanza Pr.	4,392,196	4,731,887	4,916,569	5,021,695
Nyando	299,930	333,274	357,393	372,602
Homa Bay	288,540	315,116	332,079	342,356
Population Density				
National	48	53	56	58
Nyanza Pr.	350	377	392	400
Nyando	257	285	306	319
Homa Bay	249	272	286	295

Source: 1999 Census and Analytical Report Vol.VII

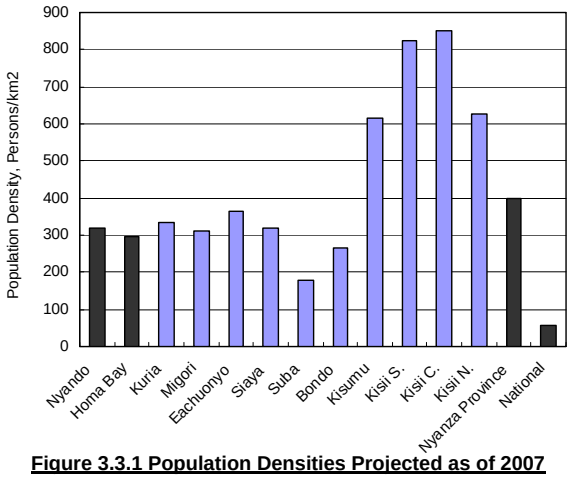


Figure 3.3.1 Population Densities Projected as of 2007

As of year 2007, it is projected that there are 34,652,581; 5,021,695; 372,602; and 342,356 populations in Kenya, Nyanza province, Nyando and Homa Bay Districts respectively. These give population densities of 58, 400, 319, and 295 persons per km^2 respectively. The nationwide population density of 58 persons per km^2 is in fact more or less same as the average density of all the 47 sub-Saharan countries. Nyanza Province shows very high population density reaching as many as 400 persons per km^2, which is because of the high population of Kisii and Kisumu as shown in Figure 3.3.1. Nyando Districts has a population density of 319 and Homa Bay carries 295 persons per km^2, both of which are about 5 fold of the nationwide density. High population densities mean high birth rate, and also imply high carrying capacity of the land blessed with rainfall and rich soils as compared to other parts of Kenya.

3.3.1 Population Growth, Crude Birth Rate, Fertility Rate and Migration

Given the populations of the last 2 census surveys, inter-census annual population growth rate can be estimated. The growth rates for the period 1989 – 1999 for Nyando and Homa Bay Districts are 3.4 % and 2.7 % respectively. These rates are higher than those of Nyanza Province and national average, which are 2.3 % and 2.9 %. High population growth rate naturally implies high birth rate as well as high fertility rate per woman. Crude birth rates per 1000 population for Nyando and Homa Bay are 44.1 and 50.8 and total fertility rates per woman are 5.7 and 6.1. National averages of the crude birth rate and total fertility per woman are 41.3 and 5.0. Both districts, especially Homa Bay District, show very high crude birth rate and fertility rate as compared to the national averages.

Table 3.3.2 Population Growth, Crude Birth rate, and Total Fertility Rate

	Population Growth, %	Crude Birth Rate per 1000 Population	Total Fertility Rate per Woman	Remarks
National	2.9	41.3	5.0	
Nyanza Province	2.3	45.8	5.5	
Nyando	3.4	44.1	5.7	
Homa Bay	2.7	50.8	6.1	
Kuria	3.9	54.3	6.9	Highest Pop. G in Nyanza
Siaya	0.9	42.7	5.7	Lowest Pop. G in Nyanza

Source: 1999 Census

Both birth rate and fertility rate for Homa Bay are higher than those of Nyando District; however the population growth is higher in Nyando than in Homa Bay. This can be explained by high incidence of out-migration taking place in Homa Bay while migration for Nyando was plus (means more in-migration than out-migration). Figure 3.3.2 shows in- and out migration by province and by district. Nyanza Province shows high out-migration next to Western Province, and by district in the Nyanza Province Homa Bay District shows very high out-migration reaching about 8% for male and 4% for female. Net migration for Nyando is a little surplus, showing in-migration to the district. This migration shows the movement of people in the period of one year before the date of the census interview. After that, Miwani Sugar Factory closed down in 2000. Due to this close down, the present tendency for Nyando might no longer be in-migration.

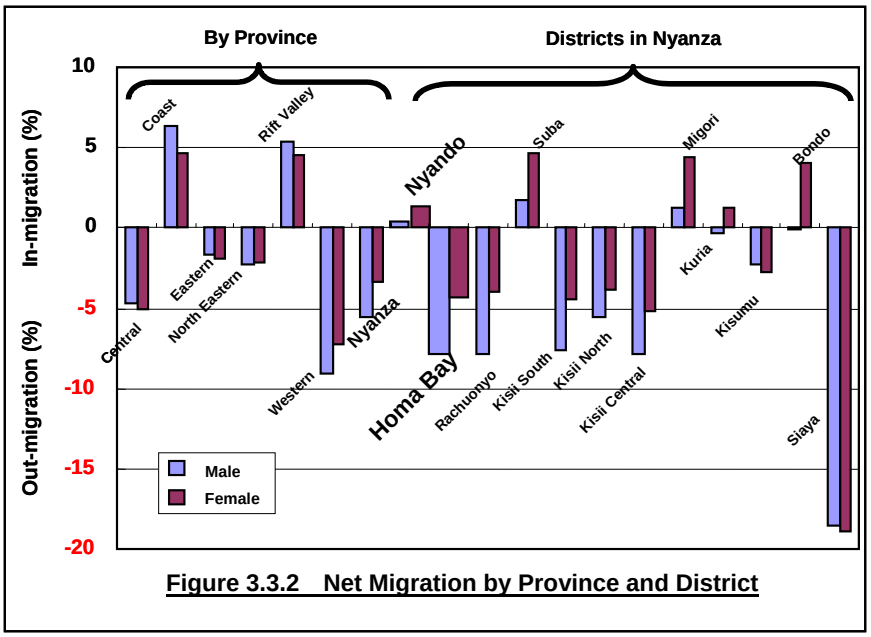


Figure 3.3.2 Net Migration by Province and District

3.3.2 Infant Mortality, Under-five Mortality, Crude Death Rate, and Life Expectancy

Nyanza Province is well known for its high infant and under-five mortality rate. This is believed mainly due to high prevalence of malaria, unhygienic water, etc. Table 3.3.3 summarizes the mortality rates, crude death rate per 1000 population, and life expectancy at birth from the 1999 census. At a glance is that one may be very much surprised with the exceptionally high mortality rate as compared to the national level.

Table 3.3.3 Infant Mortality, Under-5 Mortality, Crude Death Rate and Life Expectancy

	Infant Mortality per 1000 live births	Under-five Mortality per 1000 live births	Crude Death Rate per 1000 pop.	Life Expectancy at Birth, yr		Remarks
				Males	Females	
National	77.3	116	11.7	52.8	60.4	
Nyanza Province	111.6	192	19.0	41.7	48.0	
Nyando	116.1 (150%)	212 (183%)	22.4 (191%)	37.7 (-15.1)	42.9 (-17.5)	
Homa Bay	149.2 (193%)	254 (219%)	25.1 (215%)	35.9 (-16.9)	40.7 (-19.7)	Worst in Nyanza
Kisii North	25.6	81	7.4	59.2	67.2	Best in Nyanza
Suba	146.9	247	23.9	36.5	42	2nd worst in Nyanza

Source: 1999 Census; Note: Percentage in parentheses is the magnitude against the national level.

Infant mortalities in Nyando and Homa Bay are higher by 50% and 93% as compared to the national level. Under-five mortality rates for the districts are also about double the national average. The under-five mortalities are 212 and 254 for the Nyando and Homa Bay, and in fact the one of Homa Bay is the worst in Kenya. Therefore, about one in every 4.7 children in Nyando and one in every 3.9 children in Homa Bay cannot see their five-year birthday. Affected by these high infant and under-five mortalities, crude death rates for the districts also become very high, showing about two-fold death rates against the national level. One might say that being faced with the high child mortality the population in the Study districts might be naturally forced to bearing many children, as shown in the numbers of crude birth and total fertility rates, rather than small number of children.

As for life expectancy, those of Nyando and Homa Bay Districts are very low compared to the national average (see Table 3.3.2). Male life expectancy at birth according to the 1999 census is already below 40 years old, 37.7 for Nyando and 35.9 for Homa Bay, against the national average of 52.8. Life expectancy for women is longer than men, giving over 40 years old which, though, is still very low compared to the national average of 60.4.

Figure 3.3.3 must give a surprise to all concerned, showing drastic drop in terms of life expectancy between 1989 and 1999. Figure 3.3.3 shows change of the life expectancy over past censuses to date since 1969 [1]. Up until 1989, Kenyan's life expectancy had been increasing, and then started falling down. The rate of the drop is quite remarkable for Nyando and Homa bay Districts. The population in Nyando District had reduced their life expectancy by 10 years and 8 years for male and female respectively. The population in Homa Bay District did the same by 11 years and 10 years for male and female. This big drop may be attributable to two main reasons; higher prevalence of malaria than before and high prevalence of HIV/AIDS pandemic, with the latter probably being much more influential.

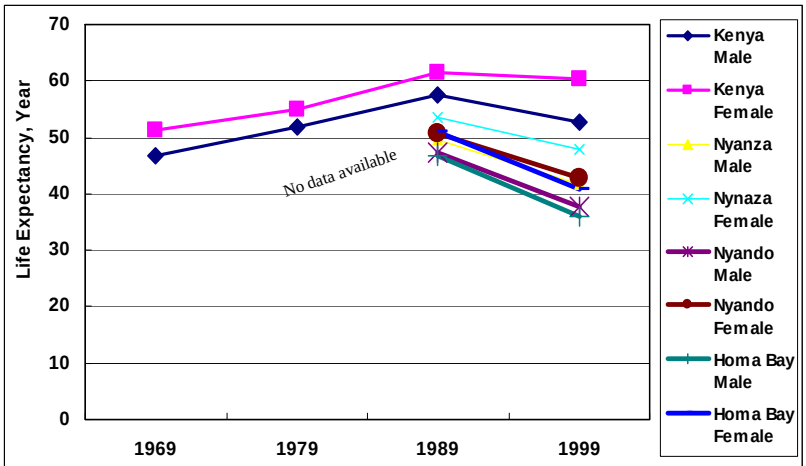


Figure 3.3.3 Change of Life Expectancy from 1969 - 1999

3.4 Poverty Prevalence

One of the greatest challenges facing Kenya today is to reduce the widespread poverty. The Central Bureau of Statistics (CBS) developed a National Sample Survey and Evaluation Programme, which is now used as a tool for information gathering from a representative sample of households spread throughout the Country. To date, four poverty assessment surveys have been carried out; the first 3 surveys are called 'Welfare Monitoring Survey (WMS)' and the last one carried out in 2005/06 is called 'Kenya Integrated Household Budget Survey (KIHBS)'. WMS I was carried out in 1992, the second (WMS II) in 1994, and the third one (WMS III) between February and May, and September and November 1997.

The WMS III collected poverty related information from 44 districts (arid and semi-arid districts were

[1] District life expectancies in 1969 & 1979 are not available. For the 1989 data, Nyando data was represented by Kisumu which encompassed present Nyando District at that time. Also, Homa Bay data in 1989 was represented by South Nyanza District which encompassed a total of 5 current districts including Homa Bay.

excluded). Then, combining the detailed information on expenditure and consumption aggregates from the 1997 WMS III with the complete geographic coverage provided by the 1999 Census, the Geographic Dimensions of Well-Being in Kenya 2004 illuminated the spatial dimensions of poverty including northern part of Kenya, which poverty indexes were not available in the WMS III. The Geographic Dimensions of Well-Being in Kenya 2004 extended the poverty dimension from 44 districts covered by the WMS III to 63 districts, and also included sub-district levels in order to aid the formulation of pro-poor policies and programmes for smaller areas. On the other hand, the KIHBS which is the latest poverty survey covered all the districts in Kenya at that time of year 2005/06, and the result was published in early May 2007.

In Kenya, term of 'Poverty' refers to 3 categories as; 1) food poverty, 2) overall poverty, and 3) hardcore poverty. 'Food Poverty Line' for Kenya is estimated based on the expenditure required to purchase a food basket that allows minimum nutritional requirements to be met, set at 2,250 calories per adult equivalent per day. 'Overall Poverty Line' in Kenya is determined as a sum of the expenditure to meet the 2,250 calories per adult equivalent per day and the costs of meeting basic non-food needs. 'Hardcore Poverty' household in Kenya is those who cannot afford to meet their basic food requirements with their total expenditure (food and non-food). Food poverty line and overall poverty lines in Kenya are as shown in Table 3.4.1:

Table 3.4.1 Poverty Lines in Kenya, Ksh/month/adult equivalent

Category	Rural	Urban	Remarks
Food Poverty Line	988	1,474	
Overall Poverty Line	1,562	2,913	Also called 'Absolute Poverty'

3.4.1 Poverty Over Time and Space

Table 3.4.2 presents overall poverty measures from WMS-I of 1992, WMS-II of 1994, WMS-III of 1997 and KIHBS of 2005/06. From the table certain noticeable patterns emerge. Provincially, Central rural has retained its position of having the least prevalence of overall poverty since 1992 with approximately a third of its population being poor, while North Eastern has been the worst poverty stricken province (no data was available in 1992). In Nyanza Province where our Study districts lie, except for 1997 in that the overall poverty was as high as 63 percent, overall poverty ranged between 42 percent and 48 percent. The rank by province was fourth in 1992, second in 1994 and 2005/06, and sixth in 1997. The reason why the poverty in 1997 was so high in Nyanza Province may have been due to calamities cased by El Nino.

Table 3.4.2 Ranking Overall Rural Poverty over Time and Space (5), rank 1 = least poor

Province	WMS I		WMS II		WMS III		KIHBS	
	1992	Rank	1994	Rank	1997	Rank	2005/06	Rank
Central	35.8	1	31.9	1	31.4	1	30.4	1
Coast	43.5	3	55.6	5	62.1	5	69.7	6
Eastern	42.2	2	57.8	6	58.6	3	50.9	4
N. Eastern	NA	NA	58.0	7	65.5	7	73.9	7
Nyanza	**47.4**	**4**	**42.2**	**2**	**63.1**	**6**	**47.6**	**2**
Rift Valley	51.5	5	42.9	3	50.1	2	49.0	3
Western	54.8	6	53.8	4	58.7	4	52.2	5

Source: Basic Report on Well-being in Kenya, Kenya Integrated Household Budget Survey-2005/06

Figure 3.4.1 shows geographical poverty incidence according to the KIHBS-2005/06, showing that percent population below poverty line (overall poverty line) in the Study districts is in a range of 40 to 50 percent. Figure 3.4.2 shows Overall Poverty Ratios by district order given in the KIHBS 2005/06, while Figure 3.4.3 is for same overall poverty ratios given in WMS III – 1997 when the poverty ratio in Nyanza was recorded very high. The figures tell us the following:

- Nyando District is ranked at 28 and Homa Bay at 22 amongst 67 rural districts in 2005/06, while the ranks in 1997 were 42 and 61 respectively. This does not necessarily mean that both districts have remarkably reduced poverty prevalence between 1997 and 2005/06 but the results in 1997 were exceptionally bad due to El Nino related calamities.

- The poverty prevalence, defined as percent below overall poverty line, is 45 percent in Homa Bay and 48 percent in Nyando. Though these prevalence are much better than the ones in 1997, still about half of the population in the Study districts are below poverty line.

- The poverty prevalence in the Study districts is slightly better than the national average such that 45 % in Homa Bay District and 48 % in Nyando District while 49.1 % is the national average. In comparing the poverty prevalence in the Study districts with Nyanza Province, the ratio in Homa Bay, 45%, is slightly better than that of Nyanza Province, 47.6%, and the ratio in Nyando District, 48%, is almost same as that of Nyanza Province.

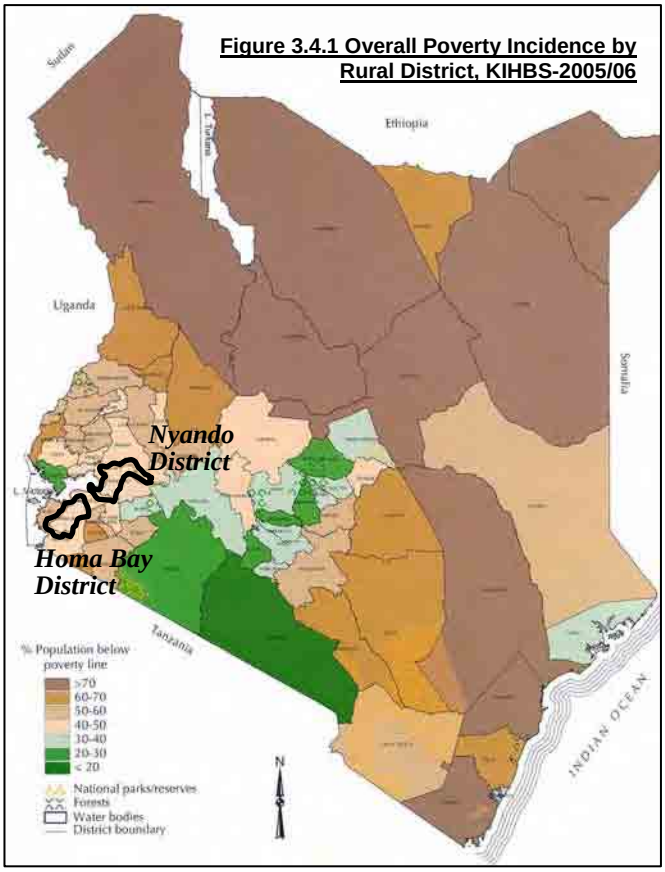


Figure 3.4.1 Overall Poverty Incidence by Rural District, KIHBS-2005/06

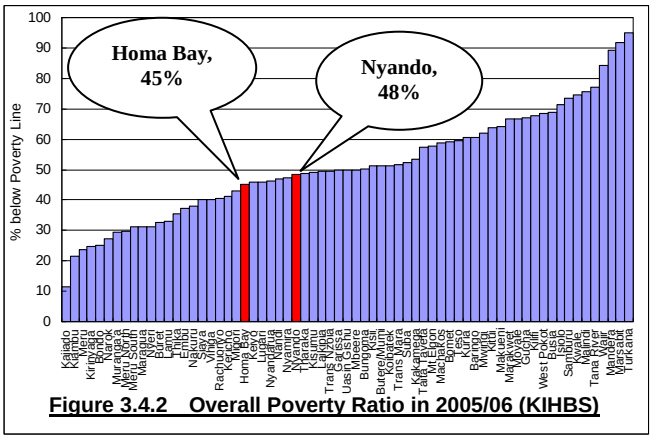


Figure 3.4.2 Overall Poverty Ratio in 2005/06 (KIHBS)

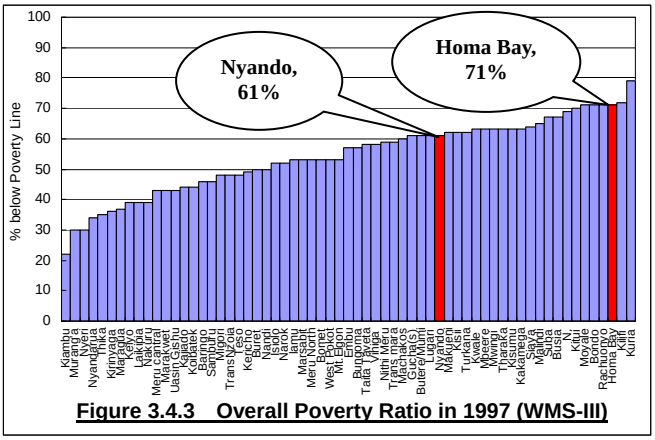


Figure 3.4.3 Overall Poverty Ratio in 1997 (WMS-III)

3.4.2 Poverty Prevalence by Constituency

Economic Survey 2005 combined the Welfare Monitoring Survey III (WMS III) data with the 1999 Census data to produce poverty estimates at the constituency level (KIHBS-2005/06 has not carried out poverty analysis by constituency level yet though the survey is the latest one in Kenya). A regression analysis technique was applied to the data from the WMS III to obtain parameters related to household expenditures and coefficients for a number of socio-economic variables such as household size, education levels, housing characteristics and access to basic services. Then, census household expenditures were estimated by applying the WMS III based coefficients together with comparable

socio-economic variables form the 1999 population census, producing poverty prevalence at sub-district level such as an electoral constituency. This result was graphically published in November 2005 as Volume II of Geographic Dimension of Well-Being in Kenya.

The Study districts of Nyando and Homa Bay compose of 3 and 2 constituencies respectively. The poverty headcount index in terms of percentage as well as national ranking for the 210 constituencies are given of the following Table 3.4.3. Since WMS-III was carried out in 1997 when whole Nyanza Province was severely hit by El Nino calamities, the poverty prevalence itself was recorded very high and therefore the ranking in national position may not be so indicative. However, at least poverty comparison amongst constituencies in district could be done. Figure 3.4.4 shows the constituencies in the two Study districts, and Table 3.4.3 summarizes the poverty incidence by its constituency, and following tendencies can be found:

- In Nyando District, Muhoroni constituency is slightly better than the other two constituencies, and this may be the existence of a cash crop that is sugarcane.
- In Homa Bay District, poverty prevalence does not so vary by constituency. Both constituencies show about 72 percent incidence.

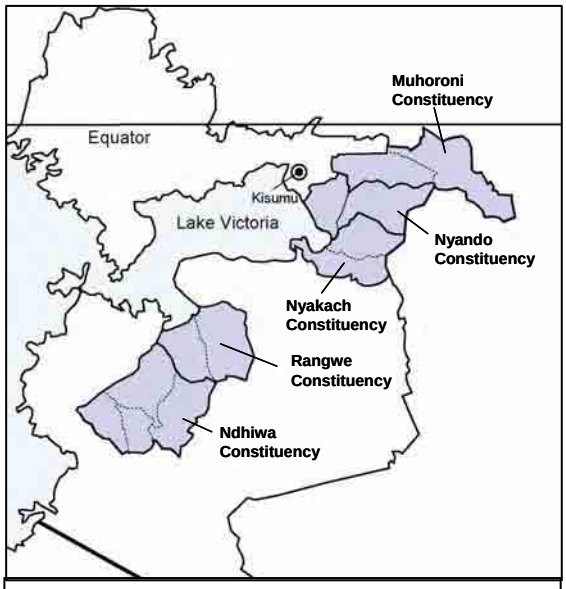


Figure 3.4.4 Constituency Allocation

Table 3.4.3 Poverty Estimates by Constituency, 1999/2000

District	Constituency	Division	% of Poverty	National Ranking	Remarks
Nyando	Muhoroni	Muhoroni, Miwani	57.6	116	
	Nyakach	Lower/ Upper Nyakach	63.6	161	
	Nyando	Nyando, Kadibo (in Kisumu district)	65.6	176	Incl. a part of Kisumu
Homa Bay	Rangwe	Rangwe, Asego	71.8	201	
	Ndhiwa	Riana, Ndhiwa, Kobama, Nyarongi	72.6	203	

Source: Economic Survey 2005, and Volume II of Geographic Dimension of Well-Being in Kenya

3.5 Macro-economic Situation in Regional Setting

According to the 1999 census, the labour force (the economically active population aged between 15 and 64 years) in Nyanza Province was 1,832,084 persons, accounting for 82.4% of the total number of persons aged 15 to 64 years (2,223,078). Total employment of the persons aged 15 to 64 years in the province numbered 1,679,701 in 1999. Among them, only 20.2% were paid employees and the remaining 79.8% were self-employed persons who worked at their family farms or businesses. The share of self-employment was 67.5% among the males employed, while the share of self-employment reached 90.2% among the females employed.

Table 3.5.1 shows the breakdown of paid employees in two major towns in Nyanza Province, which are Kisumu and Kisii, by industry in 2002. In these two towns, the community, social, and personal service industry accounted for 53.1%, followed by the manufacturing industry with 18.2% and the wholesale, retail, hotel, and restaurant industry with 11.8%. Compared with the total in the major towns of the country, the two major towns in Nyanza held much higher shares of the community, social, and personal service industry.

Table 3.5.1 Wage Employment by Industry and Major Towns, 2002

Province /Town Nyanza	Agriculture & Forestry	Mining & Quarrying	Manufacturing	Electricity & Water	Construction	Wholesale &Retail Trade Restaurant & Hotels	Transport & Communication	Finance Insurance Real Estate & business Services	Community Social & Personal Services	Total
Kisii	250	154	2,041	0	279	1,683	326	680	4,985	10,398
Kisumu	228	29	8,304	62	2,593	4997	2,066	2,897	25,149	46,325
Total	478	183	10,345	62	2,872	6,680	2,392	3,577	30,134	56,723
Percentage	0.8	0.3	18.2	0.1	5.1	11.8	4.2	6.3	53.1	100.0
Total	27,459	2,466	185,053	15,240	58,921	127,418	69,148	70,871	309,473	866,049
Percentage	3.2	0.3	21.4	1.8	6.8	14,7	8.0	8.2	35.7	100.0

Source: Central Bureau of Statistics, Ministry of Planning and National Development
Note: Major towns have the population of more than 1,000 as of 1972. Nairobi and 21 major towns in other provinces are included in the total.

Nyanza Province is endowed with natural resources including rich soil and ample rainfall, which support agricultural production and livestock farming. In agriculture, both food crops and cash crops are produced. Food crops include maize, sorghum, cassava, beans, groundnuts, sweet potatoes, while among cash crops are tea, coffee, tobacco, raw cotton, sugarcane, rice, vegetables, and fruits. In livestock farming, the local Zebu cattle have been mainly bred to produce milk and beef. Fishery is another important industry since Nyanza Province has a long shoreline of Lake Victoria with abundant freshwater resources. Other industries are pyrethrum growing, brick making, ballast crushing, sisal fiber decorticating, and handicrafts using water hyacinth and papyrus. Nyanza Province has developed several large-scale agro-based industries like sugar and cotton. Other potential agro-based products in the province are jaggery, jams, juices, breads, snacks, confectionery, dairy products, honey, wax, vegetable oils, organic fertilizers, and livestock feed.

3.6 Rural Society

The two districts of the Study Area have been mainly the land for the Luo community. The Luos belong to the Nilotes, who trace their origin to the areas drained by River Nile in the Sudan and Ethiopian Highlands and it is said that they arrived in the land of Kenya at the end of the fifteenth century. The Luo community is the third largest ethnic group in Kenya and they mainly reside along the shores areas of Lake Victoria, namely Siaya, Kisumu and South Nyanza region of Nyanza Province[2]. This section analyses the Luo community from the viewpoints of historical change, roles of clan, relation between social groups and community, subdivision of land by inheritance, and community and orphans.

3.6.1 Historical Change

The basic livelihood of the Luos used to be stock-farming and hunting-gathering (fishing). Affected by the decrease of pastureland, the number of animals held by a family has decreased and they had to shift their livelihood to the circumstances. The Luos traditionally cultivated sorghum and millet, and then maize was introduced in their land in early 1900s but the sorghum is still their important diet. As early 20th century came, the colonial policies induced the migration of various ethnic groups, and so did in Nyanza Province. The railway construction from Mombassa to Uganda started in late 1800s and reached Kisumu in 1901 attracted many people to settle in Nyanza Province. Some people were employed in the railway construction, but others who could not get employed settled there and looked for other means of earnings. Also there were other Luos who evacuated to this area from

[2] The description is based on Kenya Literature Bureau (2003),"History and Government, Form One students' Book Third Edition" and denies Okoth, "Luo Animistic Beliefs and Religious Practitioners and How to Reconcile Them to Christ".

famine, epidemic, tribal conflicts, etc. Yet, the drastic change of natural conditions in the deep forest of Muhoroni in Nyando District had to wait until the time of independence.

After independence, most of white settlers left Kenya leaving vast cultivated land. Utilizing such fertile land, large-scale agro-industry areas emerged in Nyando District[3], namely state-operated sugar factories and their nucleus estates to grow sugarcane and the sugarcane field by out-growers around the factories, paddy fields managed by National Irrigation Board (NIB), and cotton growing area to supply lint to ginnery factories in Kisumu. The new settlement scheme in Nyando area under the policy of the independent government was implemented targeting the Luos. The Luos residing elsewhere, which includes Uganda, migrated to Nyando or the areas along the national railway allocated to them under the policy[4].

It was after 1963 independence that the cultivation of the land started expanding not only to the existing reclaimed land by the white settlers but also to the forest / pastureland which had been reserved as communal land according to the land utilization plan under the regional development policy of the government. Declining pastureland gave pressure to the people to reclaim undeveloped hilly areas and mountains that led to the degradation of natural environment of the area. Accompanied by drastic population growth, the degraded natural environment has weakened the basis of people's livelihood in the area. Since the beginning of 1980s, the people in the area started recognizing new phenomena such as damages caused by flood and gully erosion, inundation in the downstream reaches of rivers, decrease of animals per household, water contamination of Lake Victoria, decline of fish catch, change of local climate, etc. These phenomena might indicate that the way of regional development so far made in this area has reached its limit considering the current natural and social environments.

Weakening of key industries especially in Nyando District resulted in decrease of cropping area: suspension of a sugar factory in Miwani Division, one of the three sugar factories in Nyando District, breakdown of NIB Ahero irrigation scheme (NIB reinstalled pumps with the assistance of FAO and started the operation again in September 2005. NIB operates another irrigation scheme called South Kano Irrigation Scheme, but only one pump out of five is operational as of August 2005), and closing down of ginneries. These incidences indicate that the people in the area were not able to develop alternative means when the demand for the cash crops in question went down. Development of rice crop by small-scale farmers in Nyando – Kisumu area starting from early 1990s is considered as one of few examples of alternative earnings.

It seems that the livelihood of the people is in the process of transformation from accumulating wealth in form of livestock to another form. To increase the number of livestock would have given rationale to the Luo traditions such as polygamy and inheritance of widow and her children. However, the basis of livestock farming has been swept away due to expansion of farmland vis-à-vis decrease of pastureland and overgrazing. Thus, the people's livelihood has changed from having milk and blood of cattle as daily meal to ugali made of maize and sorghum flours (fish is believed to have been staying as a part of the daily meal). People in many cases are nowadays purchasing such staple food. They sell animals or fish to get money to buy staple food (especially in Nyando District).

[3] Unlike Nyando District, where the region was developed through cash crop cultivation as the sugar factories formed its core, Homa Bay District was made up with subsistence agriculture. The fact might have brought the differences on the functions and collective work of clans between the two districts.

[4] Apart from the scheme, there are Luo settlers who got out of their home due to ethnic conflicts triggered by 1992 national election. The settlers in Muhoroni, north east of Nyando District, are the exception. For this settlement, people from various ethnic groups could apply to settle there on condition that they are supposed to become a sugarcane grower or milk cattle farmer. The government allocated 10 acres (120Ksh/ac) to a sugarcane grower with provision of inputs to start sugarcane crop and 20 to 60 acres (150Ksh/ac) to a milk cattle farmer. Total allotment of the lands reached to around 600.

Staple food of the people today is therefore ugali, beans and vegetables like kales. They drink milk but eat meat only on special occasions. Vegetables are not self-sufficient at household level, either and most of the people buy them at market (especially in Nyando District). Even rice growing farmers do not consider rice as staple food but a cash crop. Livelihood of farmers in the area may look like self-sufficient, but the people in Nyando District do not necessarily intend to be self-sufficient and purchase staple food by selling cash crops. Today the basic livelihood of the people especially in Nyando District is to buy staple food by selling their products such as sugar cane, other cash crops, fish, animals, etc.

Apart from the incentives to grow cash crops developed in Nyando District, the Luo culture of respecting elders has also hindered, to some extent, growing staple food. In the Luo culture, the eldest is the first one to plant crops among the family members living in a homestead. Younger ones have to wait until their elders have finished planting. This tradition causes delay in planting. When sorghum was dominant crop to grow, delay of planting did not get much trouble since sorghum is a drought tolerant crop. But for maize, delay in planting seriously affects the growth of maize, thereby so is the yield. It seems there is a conflict between tradition and utility. Some may be breaking the tradition to grow more maize and secure its harvest, and others may still maintain larger area for sorghum.

Above all the background of the historical change, the rapidly increasing threat to the people in this recent decade is HIV/AIDS. Some Luo traditions, like polygamy and inheritance of widows, have enhanced the speed and expansion of HIV/AIDS infections. Infection of HIV/AIDS from fisher folk was also significant, namely sex for fish: this transaction was practiced between fishermen and female fish mongers, who sell fish at markets, when the demand for fish is higher than the catch. It is said that the anti AIDS campaign since 2000 has successfully managed to reduce such practices especially in Nyando District. Extension of prevention means like use of contraceptive devices could be one of the keys to reduce the threat. However, the threat to the regional society which comes from out-of-marriage sexual intercourse would remain unseen from outside the regional society.

3.6.2 Roles of Clan

For the Luos, clan is defined as a group of persons whose great-great-grandfather is the same. In the Luo community, clan has functioned as a basic social unit. Clan worked as a unit to own and divide communal land, and mediate, coordinate and solve problems within the members of the clan. Clan members practice collective work like building and repairing houses, undertakings of ceremonial occasions, and construction of schools etc. There is even a case of collective work for farming as clan. Hence, the clan has been existing as a basic unit for communal activities. When the clan gets bigger, sub-clans are formed under it. Since the members who belong to the same clan cannot marry each other, recognition of clan is very important among the Luo communities.

There are in fact three Luo words which mean clan; they are *anyuola*, *dhot* and *gweng*. *Anyuola* basically means a group of families who have a common great grandfather, *dhot* means a group of families who share a common mother, and *gweng* means a group of families who live in the same place (for detail explanation, see the Box ‘Hypothesis of how *anyuola*, *dhot* and *gweng came’)*. Those three Luo words are nowadays used almost interchangeably and each of them can mean a small group of families in a village and also a big group which occupies a location or even a district like Rachuonyo. Karachuonyo is the clan in Rachuonyo District.

Looking at the relationship between administrative unit (location, sub-location, village) and clan, there were, and maybe are, cases that a village is equivalent to a clan, or sub-location is made up of a clan. In cases where a sub-location consists of only one clan, the elders of the clan exist as the elders of the sub-location too, and the sub-location is considered as an administrative unit but in actual sense it

should also be considered as a clan. In such case, the sub-location seems not working as a subordinate to the higher authority of the government administrative system, but it organizes itself by the will of the clan, and form own system.

Although the governmental organizational name (sub-location) is used, there is a case that an actual organization works as an age-set group of the clan (especially in Homa Bay District). The name may indicate that the group is organized under the umbrella of the administration, but actual situation tells that they are the sub-group of the clan. There is also a case of opposite; namely, several clans existing in a village and therefore several organizations in a village. For such cases, decision-making in a village goes through by phase. The case of several clans in a village is categorized as: 1) several sub-clans to the same clan, and 2) several different clans.

Hypothesis of how *anyuola*, *dhot* and *gweng came:*

How did these three words become to be used originally? When people were pastoralists in Sudan, they must have lived sparsely in savanna. Though people were practicing polygamy, wives lived separately with their own cattle and they seldom met. Under those circumstances, the only norms they need were assumed to be with the concept of *anyuola*. If they share the great grandfather, they are considered as a clan, and they are not supposed to intermarry among them.

Things started to change when they moved to Luo land and then settled. If co-wives live together in the same homestead, they need a new definition of clan related with the wives and that is *dhot*. Racyuonyo, for example, had seven wives; namely, (1) Nyaluo, (2) Auma Nyajuok, (3) Dhimu, (4) Anam, (5) Okoth, (6) Njira and (7) Adwet Nyamargol, and they are the *dhots* in Rachuonyo District.

The definition of *gweng* can be explained in the following way. When Osiro Migele came to current Upper Nyakach Division from Lower Nyakach Division probably in 1940s, he ordered his followers to occupy the place, intermarry each other and develop the area. Five *anyuolas* which are (1) Ajuan, (2) Bienge, (3) Mayega, (4) Odua and (5) Kamoth became one clan Kamwa who lived in the same area. This is a good example of *gweng*.

Therefore, we can set up a hypothesis that *anyuola* is the original concept of the clan in Sudan while *dhot* and *gweng* are probably new concepts which appeared after they settled in Kenya. *Anyuola* and *dhot* have a base on personal principle, but *gweng* base is on territorial principle.

There is a traditional general assembly called “Baraza” in the rural communities. It would be important to understand that if the baraza still works as ever or only partially functions according to the current situation of each and every area, or how this traditional baraza relates to the system of decision-making in a clan or clans. There is even a case when the people organize a group in their community, each clan demands a representative from their own, and otherwise the group does not function well. Individualism is going to be prevalent in the modernized society and it is also significant under such circumstance to foresee how far the traditional organizations can still mediate the individual interests in the community. This question is significant when we think of the direction of decentralization from the viewpoint of public investment.

In Homa Bay District, some villages were established as new settlements in 1963, the year of independence and at the beginning they were sometimes raided by the Kalenjin. The settlers as a clan made a stone fence and built their houses inside the fence and opened farmland. It is said that this process strengthened their unity. For instance, there are two clans in Ndhiwa Division, Homa Bay District, who started cooperating to deal with orphans as the result of increase of death by HIV/AIDS. The two clans, whose territories cover 10 villages beyond a location, consist of around 700 homesteads (here, homestead means a group of households in a compound). Their origins are the heads of the third last generation and they were brothers. They said so far around 500 people (200 fathers and 300 mothers) have been lost. They selected five committee members (two each of male and female and a clan elder) to deal with orphans and widows and they are now dealing with around 400 orphans under 18 years old.

There are several clans who are taking similar actions. The fact shows that there are social groups organized regardless of the administrative units and taking actions in the area. In Ndhiwa Division, there is a group of several clans who established an orphanage and are looking after around 200 orphans. Because clan is an agnate group, wife belongs to her husband’s clan, but in this group, the neighbouring clans from which the wives come also participate in running this orphanage. The

above two cases in Homa Bay show how the traditional clans countermeasure the new issues arising in the society. As for Nyando District, there are examples showing the vital roles of clan, e.g. a village in Miwani Division moved to other place as a clan when they suffered from flood.

One the other hand, one may see some negative implication of clan in view of development. The Study Team felt to an extent that Jealousy and witchcraft in clan *(anyuolas)* may become constraint for local Luo people to develop themselves. Jealousy and witchcraft would come up when some people become rich beyond their ranking in the *anyuola*. Sense of belonging to an *anyuola* as well as respecting of seniors in the same *anyuola* are very strong norm for Luo people even today. They are not allowed to leave their seniors behind. It was hard that a considerable number of people, who once succeeded in their life, left their home areas and now stay in big cities, towns or new settlement areas for fear of jealousy and witchcraft.

It means that once a young Luo person made a success story which implies leaving elder people behind, he/she fears of jealousy and witchcraft. If the person still wants to stay in the same place, he/she has to surrender his/her success by distributing the fruit beyond reasonable amount, or otherwise the person leave his/her home area moving to cities, towns and new settlement areas. This jealousy and witchcraft seems to have appeared after people settled and then clans became more territorial than personal. It seems the sense of fearing jealousy and witchcraft prevails even nowadays, and whereby giving a constraint to development.

3.6.3 Social Groups and Communities

As it has been mentioned, there are social organizations with different historical background in both Nyando and Homa Bay Districts. The Ministry of Gender, Sports, Culture and Social Services has been registering the social organizations and groups and categorizing them according to their genres such as women group, widow group, youth group, culture group, sport group, self-help group etc. There are groups named after such genres, as well. Registered groups can receive assistances and other administrative services from the government. They are in a sense registered to be the recipient of the administrative services to an extent.

It is considered that many of them are just given new names according to the code of the administration, but they are actually existing groups ever in the community as a clan or clan-based group. The groups are ready to receive such services, they are opening their windows, but if the services are bigger than the windows or the shapes do not match to the windows, such services would be left out. A registered group does not automatically guarantee that the group does actual activities, e.g. a community based organization (CBO) established as a size of location exists just as a recipient of aid but the activities are conducted by individual basis.

3.6.4 Sub-division of Lands by Inheritance

In the Luo community, male only has the right for inheritance. Basic inheritance system is equal division among males in a family and therefore subdivision of family assets is unavoidable. When the Luos were still engaged in hunting-gathering, fishing and stock-farming, their major assets to inherit were livestock. In this case, even though the assets were subdivided by inheritance, the successors were able to rebuild the number of livestock by their efforts as long as there was abundant pasture. However, the livelihood of the Luos has shifted from stock-farming to crop-farming and the major assets to inherit changed from livestock to immovable, namely land. Shrinking farmland per household by inheritance is therefore unavoidable.

The data collected during the community workshops indicates high correlation between the age of the participants and their land holding. The older people hold larger land while the younger ones hold smaller land. In a community workshop, the villager participants identified as those who hold more

than two acres are rich. In this case, the second generation of a rich man who holds 10 acres and have six sons will be inevitably poor. The case indicates that poverty is not a current state but a future direction. The next generation would fall together unless they seek for alternatives like to increase productivity per land, to shift earnings from ones dependent on land, land consolidation, and diversification of income sources.

3.6.5 Community and Orphans

People have experienced the incidence that father or mother of infants passed away due to malaria and other illness and therefore they must have taken measures for such incidence. However, the case of HIV/AIDS must be overwhelming to the community. HIV/AIDS has brought massive toll of dead and even led to the die out of a household through infection within family members. Polygamy accelerates HIV/AIDS prevalence: husband infected with HIV/AIDS infects his wives or a wife infected with HIV/IADS infects other wives through their husband. This infection route leads to death of parents and even step-mothers, which indicates the collapse of traditional risk management against the death of family members.

When traditional extended family system cannot cope with the risk of HIV/AIDS, people would rely on the support from clan or union of clans to cope with the risk. However, the victims of HIV/AIDS are so many that the supporters of clans themselves are threatened to be infected with HIV/AIDS and actually become one of the infected. That is the real threat to the community to be weak in its capability. Countermeasures taken by the government administration are campaign for HIV/AIDS infection prevention, provision of medicines to the infected, and support to orphans and widows among others. As well as emergency measures, it is also required to consider the measures based on middle and long term visions of people's livelihood in the area.

There are always and anywhere unexpected natural and social incidences. But such incidences are not the issue as compared to what the communities are facing in nowadays context affected by HIV/AIDS. What matters is the power of society to cope up with the incidences. Role of external intervention to the community should therefore be to enhance the communal actions to cope the difficulties described above (actions would be to seek profit to raise the livelihood and/or to directly mitigate risks), so that the communal actions can support the effort of individuals in the community to make their community to be risk proof.

3.7 Rural Community and Rural Life from Workshops and Interviews

During the first phase of this Study, a series of community workshops were held aside from interviews to villagers. Identified through these practices were brief history of the targeted villages, trend of key indices in the villages; namely how the villagers see the changes having been taking place in their areas, their perception of rich-poor profile, trend in educational level, sources and level of incomes, etc. Villages targeted for the workshop and consequently the interviews were selected one each from all the divisions; 5 in Nyando and 6 in Homa Bay Districts. The villages were meant to well represent the division in terms of social and natural conditions to which the village belongs.

3.7.1 Origins of the Villages

Out of eleven communities where the Team had community level workshops, the history of five villages (two in Nyando District and three in Homa Bay District) goes back to 18th or 19th century, and that of five villages (two in Nyando and three in Homa Bay) started from 1901 - 1920. Ruke Village [Muhoroni Division, Nyando District] is an exception because there was settlement scheme by the Government in 1964. As to the reason why they moved, the people moved to the current villages mainly because of war / conflict with other clans (two each in Nyando and Homa Bay) and of diseases or famine (two in Nyando and one in Homa Bay).

3.7.2 Trend of Key Indices in the Villages

Participants freely chose the indices to do trend analysis in the workshops and the indices appeared frequently are livestock (10 villages), harvest / yield (9 villages), health / diseases (9 villages), education (8 villages), clean water (7 villages) and forest / trees (6 villages). Following are some excerpts for the trend analysis done in all the 11 villages:

- The situation of livestock is deteriorating gradually from 10 years ago in all the 10 villages which have chosen the livestock as one of indices. This indicates rangeland now available may not be able to sustain the increase of livestock number in total.
- Harvest / yield is also deteriorating in 7 out of 9 villages. CC1 & Giko Schemes [Nyando Division, Nyando District], however, got the highest harvest of rice in 2004 because there was no severe flood. In Okok Village [Nyarongi Division, Homa Bay District], farming is getting better because of the introduction of new crops, two varieties of maize of yellow and white, and new farming techniques.
- Health / disease situation is deteriorating in all the 9 villages where the index was chosen. Health is in many cases related to water availability. The availability of clean water is deteriorating in all the 7 villages except Murram Village [Riana Division, Homa Bay District] where CARE Kenya dug shallow tube wells.
- Forest is also getting deteriorated in all the 6 villages except for Komolo Village [Miwani Division, Nyando District]. The situation of forest had been also getting worse in Komolo Village until 5 years ago, but is getting better since then because of education from Ministry of Agriculture and VI Agroforestry, one of NGOs based in Kisumu. The participants said it is better than 50 years ago now.
- Education is getting better all the 8 villages, thanks to the free primary education system introduced in 2003, except for Otange Village [Nyarongi Division, Nyando District] where the participants assessed that the situation has not changed for 10 years.

3.7.3 Rich-poor Profile and Farmland Size

The ratio of rich, middle and poor from the rich-poor profile of the 11 villages is shown in Figure 3.7.1, and the definition of the rich and the poor in terms of farmland size from the same rich-poor profile is shown in Table 3.7.1. The participants assessed that more than 80 % of the villagers are poor in Ngegu Beach (93%; definition no farms) [Rangwe Division, Homa Bay District], Okok Village (90%; definition no land) [Ndhiwa Division, Homa Bay District], and CC1 and Giko Schemes 88%; definition N/A) [Nyando Division, Nyando District]. Rich people are 0% (definition N/A) in Kogelo Kalanya Village [Asego Division, Homa Bay District], only 1% (definition N/A) in Ngegu Beach, and 2% (definition more than 10 acre) in Okok Village.

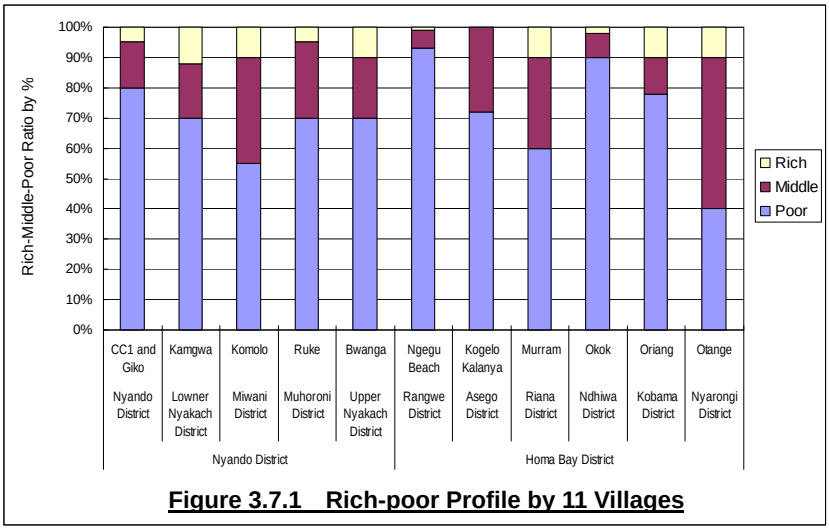


Figure 3.7.1 Rich-poor Profile by 11 Villages

On the other hand, the middle

is as much as 50% (definition 2 to 5 acre farmland) and the poor is 40% (definition less than 2 acre) in Otange Village [Nyarongi Division, Homa Bay District], and 35% and 55% respectively (definition N/A) in Komolo Village [Miwani Division, Nyando District.]. Those are the only villages where the middle is more than 30% and/or the poor is less than 60% in the two districts.

Table 3.7.1 Definition of Rich and Poor in Rich-Poor Profile

	Nyando District					Homa Bay District					
Division	Nyando	Lower Nyakach	Muhoroni	Miwani	Upper Nyakach	Rangwe	Asego	Riana	Ndhiwa	Kobama	Nyarongi
Village	CC1 & Giko	Kamgwa	Ruke	Komolo	Bwanga	Ngegu Beach	Kogelo Kolanya	Murram	Okok	Oriang	Otange
The Rich has the farm more than:	N/A	Big	10 acre	Big	5 acre	N/A	N/A	5 acre	10 acre	5 acre	5 acre
The poor has the farm less than:	N/A	0 acre	0 acre	N/A	1/4 acre	0 acre	N/A	Small land for house only	0 acre	1 acre	2 acre

Source: Rich-poor profiles at the community level workshops.

Majority of the villagers are supposed to have no farm land in many villages according to the rich-poor profile in the workshops, but those figures are most likely to be exaggerated. The statistics from the registration at the workshops (Figure 3.7.2 and Table 3.7.2) show that more than two thirds of the villagers have at least 1 acre of farmland except in Ruke Village, where a lot of squatters reside and 44.3% of the participants of the workshops have less than 1 acre of farmland.

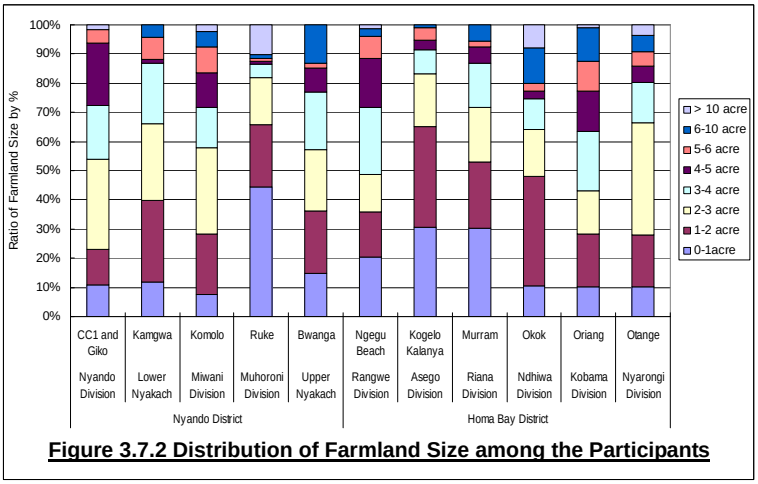


Figure 3.7.2 Distribution of Farmland Size among the Participants

Table 3.7.2 Average Farmland Size of the Workshop Participants

	Nyando District					Homa Bay District					
Division	Nyando	Lower Nyakach	Muhoroni	Miwani	Upper Nyakach	Rangwe	Asego	Riana	Ndhiwa	Kobama	Nyarongi
Village	CC1 & Giko	Kamgwa	Ruke	Komolo	Bwanga	Ngegu Beach	Kogelo Kolanya	Murram	Okok	Oriang	Otange
Average farmland size	2.73 acre	2.27 acre	2.88 acre	2.86 acre	2.72 acre	2.52 acre	1.59 acre	1.89 acre	3.04 acre	3.18 acre	2.68 acre

Note: Rice field is 2.13 acre (78%) in CC1 & Giko Schemes, and sugarcane field is 1.36 acre (48%) in Komolo Village. In Ruke Village, average total land area is 10.34 acre so that farmland is only about 28% of the total land area.

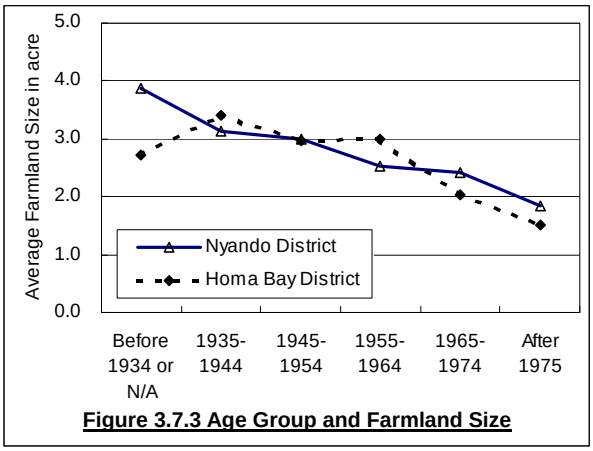


Figure 3.7.3 Age Group and Farmland Size

Though the average farmland size is about 2 to 3 acre from Table 3.7.2, the villagers who have 2 to 3 acre are not so many as in Figure 3.7.2. The ratio of 2 - 3 acre holders is only 12.8% in Ngegu Beach, 14.8% in Oriang Village, 15.9% in Ruke Village, and 16.0% in Okok Village. Those are also the villages where participants assess that most of them are poor. On the contrary, 38.3% of the villagers have 2 to 3 acre of farmland in Otange Village and they assess that the middle is as much as 50%. It might be possible to conclude that the differential of farmland holdings

is the major factor for their perception of rich, middle and poor profile.

Another important issue is the declining of the farmland size through generations by inheritance. From the statistics of the workshop participants (417 in Nyando District and 497 in Homa Bay District), average farmland size is diminishing from more than 3 acre in older age groups to a little more than 2 acre in the participants who are in thirties, and less than 2 acre for who are in twenties as shown in Figure 3.7.3.

3.7.4 Trend in Education Level

Age and the education level of the female participants of the community level workshops (186 in Nyando District and 244 in Homa Bay District) is shown in Figure 3.7.4. Most of the female participants in their teens and twenties have at least some education in both Nyando and Homa Bay Districts. About 10% of the participants in forties and fifties in Nyando had no education, and as high as 30 – 40 % of the same age group in Homa Bay did not receive any education. The ratio of uneducated female participants dropped from more than 30% to about 10% between their sixties and fifties in Nyando District, but from the same 30% to about 5% between their forties and thirties in Homa Bay District. It is observed that there is a clear time lag between Nyando District and Homa Bay District.

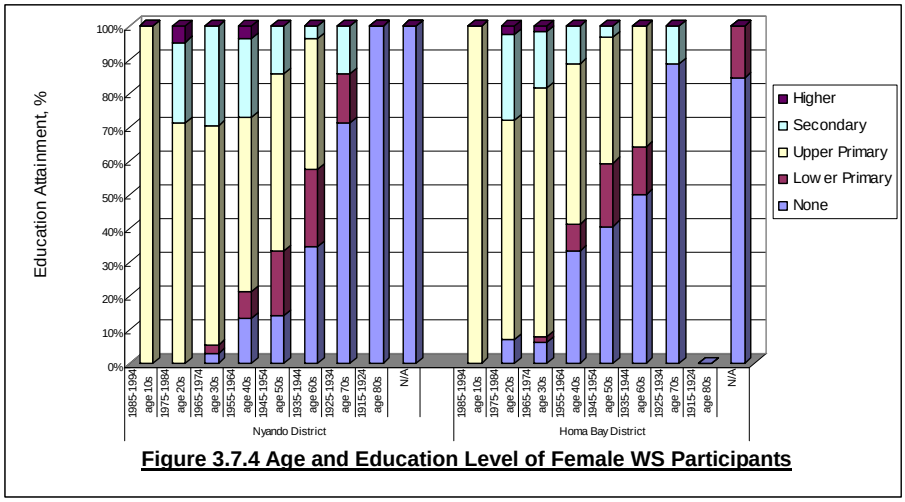


Figure 3.7.4 Age and Education Level of Female WS Participants

Age and the education level of the male participants of the community level workshops (231 in Nyando District and 253 in Homa Bay District) is shown in Figure 3.7.5. Male participants have had much higher opportunities for education, and even for sixties age group only less than 5% in Nyando and less than 20% in Homa Bay had no education. There is also a time lag between Nyando and Homa Bay however. More than 10% in their sixties or younger went to higher education in Nyando, but still few in Homa Bay. More than a half in their fifties or younger went to secondary or higher in Nyando, but it became close to a half in their forties in Homa Bay.

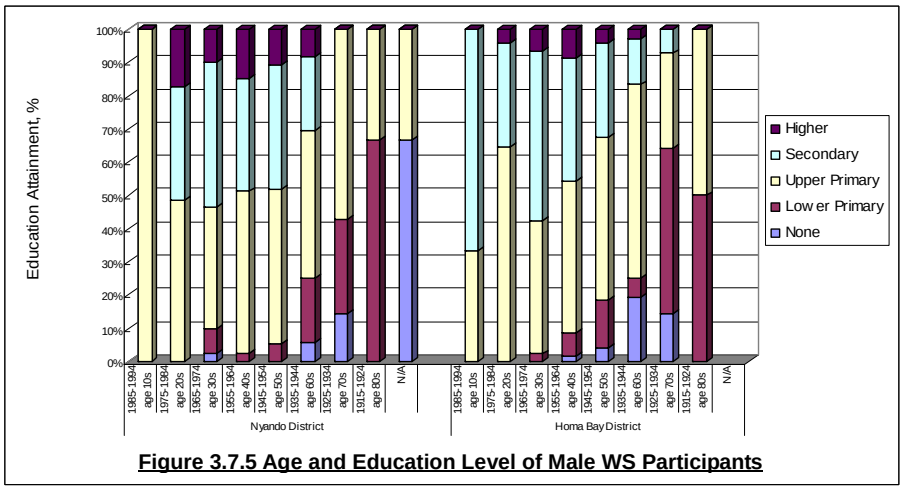


Figure 3.7.5 Age and Education Level of Male WS Participants

3.7.5 Work away from Home

The distribution bar charts in Figure 3.7.6 show very clear and specific characteristics in Kamgwa Village [Lower Nyakach Division, Nyando District] and Murram Village [Riana Division, Homa Bay District]. Female participants dominated the workshops in their thirties and forties age groups in Kamgwa, and in their twenties to forties in Murram. Male participants outnumbered in other age groups. From interviews the Team has conducted, it was made clear that there are many males working away from home. The bar charts for the other villages are more consistent and closer to the normal distribution. The examples of CC1 & Giko Schemes and Oriang Villages are shown in Figure 3.7.7

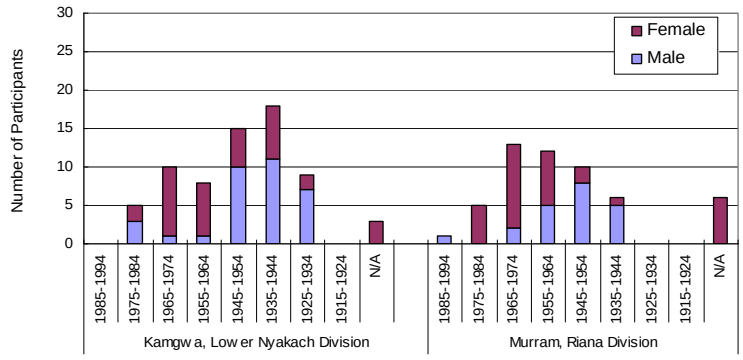


Figure 3.7.6 Sex and Age Distribution of WS Participants (1/2)

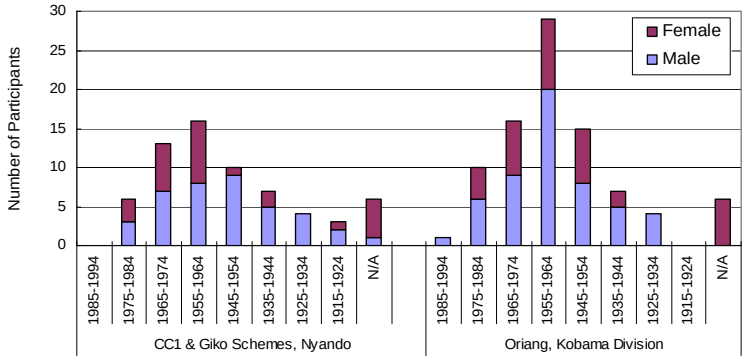


Figure 3.7.7 Sex and Age Distribution of WS Participants (2/2)

3.7.6 Source and the Level of Income

Figure 3.7.8 shows the major income sources of the community level workshop participants in Kogelo Kalanya [Asego Division] and Murram Village [Riana Division], two extreme cases in Homa Bay District. Kogelo Kalanya is a suburb of Homa Bay town and has the highest variety of source of income, on the other hand, Murram is a rural village though it is along a trunk road to Rongo and then Kisii. There is a big difference between Kogelo Kalanya and Murram in job opportunities especially in (small) business for women. From the interviews, the Study Team has also learned the source and the level of income of women as in the Box below. Their sources are basically small business, farming, fetching and selling firewood / charcoal, making brooms or sisal ropes, repairing clothes etc. The level of income is something like Ksh30 to Ksh120/day, and availability of farming labor / weeding is not so high.

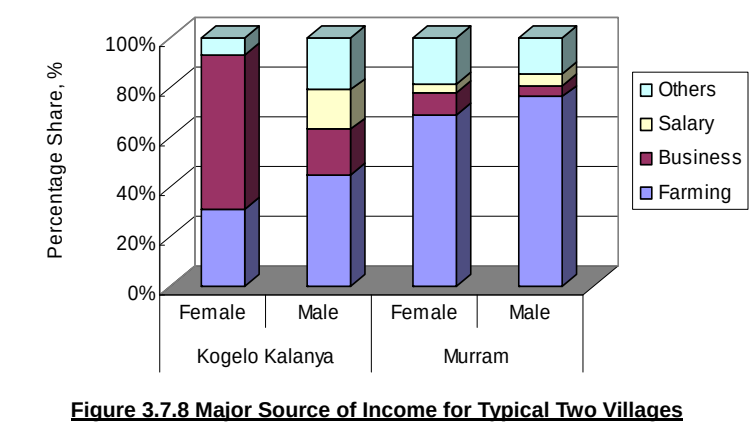


Figure 3.7.8 Major Source of Income for Typical Two Villages

Box: The Source and the Level of Income of Women from Interviews

Some cases of small business

- A woman in Ruke Village [Muhoroni Division, Nyando District]: I go to Ahero town once a week, buy 40 to 50kg of rice at Ksh100/2kg and sell at Ksh120/2kg. It takes Ksh100 for transportation so that the profit is Ksh300 to 400 a trip. (Ksh50-60/day)
- A woman of Ngegu Beach [Rangwe Division, Homa Bay District]: Except Saturdays when I go to church, I leave home at 2PM, go over two hills and buy sugarcane and come back at around 7PM. Since sugarcane sticks are heavy, I can carry only 10 at a time. I buy them at Ksh7 or 8/stick and sell them at Ksh10 on the beach from 10AM to 1PM. (Maximum Ksh30/day)
- A fish monger of Ngegu Beach: I can usually earn Ksh50-100/day. Sometimes I cannot get any because there are few fishes. Today, I cannot make any.
- A woman in Otange Village [Nyarongi Division, Homa Bay District]: I buy fishes at Ndhiwa market, and sell them in the village. I can make about Ksh80 twice a week. (Ksh30-35/day)

Some cases of farm labor / weeding

- A woman in Ruke Village: I do weeding for the sugarcane farm. I work from 7AM to 10AM without lunch or from 7AM to 1PM with lunch. I can earn Ksh20 for a line of 75 to 90 yards and I can finish 3 to 6 lines a day depending on the actual amount of work. (Ksh60-120/day)
- A woman in Bwanga Village [Upper Nyakach Division, Nyando District]: I do farm labor from 7AM to 12AM and get Ksh50/day. There is no work in the dry season.
- Another woman in Bwanga Village: I do farm labor. I usually get a job which I can finish in four days and earn Ksh100. (Ksh25/day)
- A woman in Oriang Village [Kobama Division, Homa Bay District]: I do weeding at Ksh200 for a farmland (something like 5yd x 50yd) which I can finish in three days. I can get such a job only twice or three times a week. (Ksh60-70/day)
- A woman in Otange Village [Nyarongi Division, Homa Bay District]: I do weeding one or twice a week. I get Ksh50 by working 6AM to noon. I can find jobs in April, May, October and November.

Some cases of fetching and selling firewood

- A woman of Ngegu Beach: I fetch and sell one bundle of firewood twice a day on the beach. One bundle of firewood is Ksh40. (Maximum Ksh80/day)
- A woman in Oriang Village: I spend about 5 hours to collect firewood, and then spend 2 hours to go to market to sell. I sell one bundle at Ksh60. For charcoal, it takes 5 days to fetch and 2 days to burn. Since one sack of charcoal is to heavy to carry, I need to make two trips (a round trip takes 4 hours). I can sell a sack at Ksh300.

Other source

- Same woman in Oriang Village: I make sisal ropes with other woman. (Ksh36/2 persons/day. Ksh18/day) I also repair clothes. I can make Ksh1,000 in a good month, but only Ksh200 in a bad month.
- A woman in Otange Village: I make brooms and sell them at Ksh5 each. I can get Ksh200-300 in a week, but I need to spend Ksh50 for transportation. (Ksh30-50/day)
- A woman in Otange Village: I repair clothes. I can get about Ksh150/month.

Source: Interview by the Study Team

3.7.7 Crop Production / Consumption

Before the community level workshops, the Study Team carried out interviews at the workshop sites. Table 3.7.3 is the summary of the interviews on crop production and consumption at six villages in six divisions of Homa Bay District. Average production of maize and sorghum among 18 interviewees is about 539 Kg (the mode is about the same) in a bad year and about 1,364 Kg (the mode is 1,000 - 1,100 Kg) in a good year. On the other hand, average

Table 3.7.3 Crop Production / Consumption in Homa Bay

	Maize (kg/year)		Sorghum (kg/year)		Total (kg/year)		Consumption
Case	Bad year	Good year	Bad year	Good year	Bad year	Good year	of maize
1		4,920				4,920	
2	1,620	3,150	45	225	1,665	3,375	
3	495	2,430	45	405	540	2,835	
4	540	1,080	540	720	1,080	1,800	1,632
5	225	900	180	360	405	1,260	
6	720	1,080	45	135	765	1,215	730
7	720	1,080			720	1,080	
8	540	1,080			540	1,080	730
9	450	810	135	225	585	1,035	
10	540	900			540	900	540
11	225	540	180	360	405	900	
12	90	360	130	450	220	810	495
13	360	540			360	540	
14	68	270			68	270	1,080
15	30	70	135	135	165	205	
16	90	90	68	68	158	158	
17	61	135			61	135	730
18	40	40	20	20	60	60	960
19							720
Ave.	400.8	1,081.9	138.4	282.0	539.2	1,364.0	846.3

consumption of maize per year of 8 interviewees is about 846 Kg (the mode is 720 – 730 Kg). That means 5 or about 30% of the interviewees cannot be self-sufficient for cereals even in a good year, 13 or close to 80% of them need to buy maize in a bad year provided that they consume maize and sorghum for cereals. However, this does not always mean they buy cereals or it may mean there should be other food which can supplement the shortage of cereals. There are sweet potatoes and cassava in Homa Bay, and in fact many of Homa Bay people depend on sweet potatoes and hence the food crop may not so much fall in shortage.

3.8 Rural Life from Baseline Survey (in Monetary and Food Balance)

The Study Team conducted a baseline questionnaire survey at five areas where the pilot programmes of 'No.1 Livelihood Improvement Programme', and 'No.2 Community Health Improvement Programme' were implemented; namely, Miwani and Muhoroni Divisions in Nyando District, Riana Division in Homa Bay District, and Rapedhi Lwala and Nguku of Nyarongi Division in Homa Bay District. The number of the interviewee totaled to 150 (30 interviewees per area), of which 111 are female and 39 are male. The survey was conducted from November 2006 to February 2007.

3.8.1 Income from Agriculture

According to the survey, such major crops as maize, beans, sorghums and sweet potatoes are grown by 96%, 55%, 33% and 27% of the households respectively. Although maize is grown by most of the households in all the divisions, the yield of a household differs in each division and also by division. In Muhoroni, for example, the average is 567 Kg while in Miwani it is only 207 Kg. Sugarcane is the most common cash crop. Maize is also common cash crop aside from being the staple food. In Miwani, Muhoroni and Riana, for example, sugarcane accounts for the largest amount of agriculture income. In all the divisions, a large amount of maize is sold; it accounts for the second largest proportion in Miwani, Muhoroni and Rapedhi Lwala. The other important cash crops are skuma wiki, groundnuts, tomatoes, sweet potatoes, beans, etc.

Table 3.8.1 Distribution of Annual Agriculture Income per Household

Ksh	Nyando		Homa Bay			Total
				Nyarongi		
	Miwani	Muhoroni	Riana	Rapedhi Lwala	Nguku	
0	11	12	6	14	3	46
1 - 10,000	7	7	8	12	19	53
10,001 - 20,000	5	3	5	3	5	21
20,001 - 30,000	2	2	2	0	0	6
30,001 - 40,000	2	1	1	1	0	5
40,001 - 50,000	2	2	4	0	2	10
over 50,000	1	3	4	0	1	9
Mean (Ksh)	13,498	16,664	25,967	4,573	9,746	14,090
Min. (Ksh)	0	0	0	0	0	0
Max. (Ksh)	70,480	121,630	180,200	39,900	53,100	180,200

Table 3.8.1 shows the distribution of annual agriculture income per household. 69% of the households sell some crops and more than half of them earns only Ksh10,000 or less. In general, the sales vary by division. In Riana, for instance, mean annual agriculture income is Ksh25,967 while in Rapedhi Lwala and Nguku it is on;y Ksh4,573 and Ksh9,746 respectively.

3.8.2 Income from Livestock

In the survey, 99% of the households answered that they keep some livestock. Generally speaking, chicken, milking and ploughing cattle, local goat and sheep are common livestock in the areas. Poultry is the most common and 94% households of them raise 17 chickens on average. Although some people rear livestock for home consumption only, 72% of households get some income from them. In Miwani and Riana, sales of cattle accounts for the largest amount of the livestock income, and in Muhoroni and Nyarongi milk does. As shown in Table 3.8.2, the average livestock income differs by division. In Muhoroni, for instance, the average income per household is Ksh13,793 while

in Nyarongi it is only Ksh3,057 and Ksh4,644. In Muhoroni Division, there are some farmers who earn quite large amount of money from milking, raising the mean income amount.

Table 3.8.2 Distribution of Annual Livestock Income per Household

Ksh	Nyando		Homa Bay			Total
	Miwani	Muhoroni	Riana	Nyarongi		
				Rapedhi Lwala	Nguku	
0	9	8	7	13	5	42
1 - 10,000	14	12	16	14	19	75
10,001 - 20,000	3	5	6	3	6	23
20,001 - 30,000	2	3	0	0	0	5
30,001 - 40,000	1	0	1	0	0	2
40,001 - 50,000	0	0	0	0	0	0
over 50,000	1	2	0	0	0	3
Mean (Ksh)	7,010	13,793	5,870	3,057	4,644	6,875
Min. (Ksh)	0	0	0	0	0	0
Max. (Ksh)	52,850	111,100	33,200	12,100	18,380	111,100

3.8.3 Income from Other Sources

In addition to agriculture and livestock, people earn some money from other sources such as merry-go-round, casual labour, small business, etc. Merry-go-round is the most common income generating activity followed by casual labour. However, the merry-go-around does not so much contribute to the total income in terms of share. In fact, they get in many cases just over Ksh1,000 only and in few cases up to Ksh10,000 in a year. The people earning more than Ksh10,000 in a year usually have their own business or work in established organizations such as schools.

Table 3.8.3 shows the distribution of annual other income per household. More than half of the households earn Ksh20,000 or less and only 4% of them earn over Ksh100,000. The average income varies by division same as the incomes from agriculture and livestock. In Miwani and Muhoroni, for example, the average is around Ksh35,000 while in Nguku it is only Ksh13,145.

Table 3.8.3 Distribution of Annual Other Income per Household

Ksh	Nyando		Homa Bay			Total
	Miwani	Muhoroni	Riana	Nyarongi		
				Rapedhi Lwala	Nguku	
0	3	3	3	4	5	18
1 - 10,000	6	9	9	7	11	42
10,001 - 20,000	5	7	7	7	6	32
20,001 - 30,000	3	3	3	4	6	19
30,001 - 40,000	3	3	3	2	0	11
40,001 - 50,000	2	1	1	2	1	7
50,001 - 100,000	5	3	3	3	1	15
over 100,000	3	1	1	1	0	6
Mean (Ksh)	35,561	34,203	25,080	24,152	13,145	26,428
Min. (Ksh)	0	0	0	0	0	0
Max. (Ksh)	117,000	174,400	172,000	132,000	81,200	174,400

3.8.4 Total Income and Poverty Line

Table 3.8.4 summarizes mean annual income per household and per person. In Miwani, Muhoroni and Riana, the mean annual income is about Ksh60,000 per household and Ksh10,000 per person. In Nyarongi, on the other hand, it is only about half of them. Other sources account for more than half of total income in all the divisions except in Riana, where agriculture income is the largest amongst them.

Table 3.8.4 Mean Annual Income per Household and per Person

Ksh	Nyando						Homa Bay									Total		
	Miwani			Muhoroni			Riana			Nyarongi								
										Rapedhi Lwala			Nguku					
	house	person	%	house	person	%	house	person	%	house	person	%	house	person	%	house	person	%
1. Crops	13,963	2,571	24	30,876	4,629	48	25,967	3,893	46	4,573	793	14	9,746	1,598	35	17,025	2,697	36
2. Livestock	7,251	1,335	13	13,793	2,068	21	5,870	880	10	3,057	530	10	4,644	761	17	6,923	1,115	14
3. Others	36,787	6,775	63	34,203	5,128	53	25,080	3,760	44	24,152	4,186	76	13,145	2,155	48	26,673	4,401	56
Total	58,002	10,682		78,871	11,825		56,917	8,533		31,782	5,508		27,534	4,514		50,621	8,212	

To know poverty level in the area, household consumptions of the crops are converted into monetary value and added to the agriculture income, and then distribution of monthly income per person is estimated as shown in Table 3.8.5. The poverty line in rural area of Kenya is set at Ksh1,239 whereby people who earn less than Ksh1,239 including self food consumption are categorized as those

who live under the poverty line. In Nyando District, the poverty ratio is 57% and 63% while in Homa Bay District, the ratio is much higher than that of Nyando; namely, it is 83%, 87%, and 83% in Riana Division, Rapedhi Lwala area and Nguku area of Nyarongi Division respectively. In Homa Bay, the average income is generally lower and thereby poverty level is higher than in Nyando.

Table 3.8.5 Distribution of Monthly Income per Person

Ksh	Nyando				Homa Bay						Total	
	Miwani		Muhoroni		Riana		Nyarongi					
							Rapedhi Lwala		Nguku			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1 - 500	7	23	6	20	12	40	16	53	17	57	58	39
501 - 1,000	8	27	10	33	12	40	8	27	8	27	46	31
1,001 - 1,238	2	7	3	10	1	3	2	7	0	0	8	5
Under Poverty Line	**17**	**57**	**19**	**63**	**25**	**83**	**26**	**87**	**25**	**83**	**112**	**75**
1,239 - 1,500	1	3	4	13	2	7	3	10	1	3	11	7
1,501 - 2,000	5	17	5	17	1	3	0	0	2	7	13	9
2,001 - 2,500	3	10	0	0	2	7	0	0	0	0	5	3
2,501 - 3,000	1	3	1	3	0	0	0	0	0	0	2	1
over 3,000	3	10	1	3	0	0	1	3	2	7	7	5
Over Poverty Line	**13**	**43**	**11**	**37**	**5**	**17**	**4**	**13**	**5**	**17**	**38**	**25**
Mean (Ksh)	1,681		1,100		737		678		703		980	
Min. (Ksh)	125		211		119		81		103		81	
Max. (Ksh)	8,623		3,435		2,087		3,827		3,747		8,623	

3.8.4 Expenditure

As shown in Table 3.8.6, average annual expenditure per household is from Ksh44,139 to Ksh75,061. In all the divisions, food accounts for the largest amount, from 30% to 52%, of the expenditure. In Muhoroni and Miwani, item of the second largest expense is tea and beverages while in Riana and Nyarongi it is education. Although agriculture and livestock production are important income sources, people do not invest in them so much.

Table 3.8.6 Breakdown of Average Annual Expenditure per Household

Ksh	Nyando				Homa Bay						Total	
	Miwani		Muhoroni		Riana		Nyarongi					
							Rapedhi Lwala		Nguku			
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Food	26,744	45	22,149	30	26,607	39	25,272	52	19,860	45	24,126	41
Tea, beverages	10,007	17	14,966	20	5,016	7	1,302	3	3,787	9	7,016	12
Agricultural input	729	1	5,518	7	1,975	3	503	1	410	1	1,827	3
Employment	1,297	2	5,634	8	1,766	3	1,263	3	633	1	2,119	4
Livestock purchase	963	2	2,027	3	631	1	502	1	392	1	903	2
Tobacco/ cigarettes	154	0	2,821	4	1,126	2	137	0	267	1	901	2
Clothes	2,126	4	3,034	4	2,140	3	2,653	5	3,077	7	2,606	4
Medical care	2,715	5	2,658	4	4,676	7	1,055	2	869	2	2,395	4
Education	5,452	9	3,013	4	10,946	16	4,441	9	6,896	16	6,150	10
Contribution to churches/groups etc.	1,576	3	3,197	4	2,687	4	1,887	4	1,123	3	2,094	4
Housing/repair	1,024	2	635	1	903	1	1,327	3	701	2	918	2
Communication	2,015	3	2,070	3	2,927	4	1,971	4	1,005	2	1,998	3
Transport	1,761	3	1,894	3	3,887	6	1,307	3	1,899	4	2,150	4
Fuel for light	2,167	4	2,079	3	2,612	4	2,325	5	2,169	5	2,270	4
Recreation	602	1	1,792	2	31	0	485	1	15	0	585	1
Loan repayments	197	0	691	1	86	0	1,588	3	1,020	2	716	1
Tax excluding VAT	0	0	634	1	0	0	403	1	0	0	207	0
Others	458	1	251	0	0	0	343	1	17	0	214	0
Total Expenditure	59,987		75,061		68,015		48,763		44,139		59,193	

3.8.5 Balance of Income and Expenditure

Table 3.8.7 shows distribution of annual balance of income and expenditure per household. In all the divisions, more than half of the households are in red and the percentage of them ranges 50% to 67%. Surprisingly, 23% of households have deficits of over Ksh25,000, which is nearly the average annual income at both places in Nyarongi. On the other hand, only 9% of them are in the black of over Ksh25,000. As shown in Table 3.8.8, the people having deficit mainly get it over by assistance from relatives and/or credit. It means that at present the mutual aids system is a prerequisite to sustain their

Table 3.8.7 Distribution of Annual Balance per Household

Ksh	Nyando		Homa Bay			Total
	Miwani	Muhoroni	Riana	Nyarongi		
				Rapedhi Lwala	Nguku	
under ▲100,000	1	2	1	2	1	7
▲100,000 - ▲75,001	0	2	2	2	0	6
▲75,000 - ▲50,001	0	1	1	1	1	4
▲50,000 - ▲25,001	6	4	3	3	1	17
▲25,000 - ▲ 1	8	7	13	10	16	54
Total, Deficit	15	16	20	18	19	88
1 - 25,000	10	9	7	11	11	48
25,001 - 50,000	4	1	2	0	0	7
50,001 - 75,000	1	1	1	1	0	4
75,001 - 100,000	0	1	0	0	0	1
over 100,000	0	2	0	0	0	2
Total, Surplus	15	14	10	12	11	62

Table 3.8.8 Major Means to Supplement Deficit

Means	No.
Assistance from relatives	63
Credit	11
Merry go round	3
Allowance of trainings	2
Support from churches	2

life.

3.8.9 Consumption of Staple Foods

Table 3.8.9 shows average of annual staple food consumption and its' breakdown by crop; in addition to cereals, starchy root crops such as sweet potato are regarded as important staple food. The average of the annual consumption is 1,115 Kg per household and 156 Kg per person, the consumption in Nyarongi, in general, is less than that in the other divisions. Maize is the most common staple food, which accounts for 68% of the total consumption on average. Its' production, however, accounts for only 50% of the consumption. This means that people need to buy half of the maize to supplement the shortage. The other important staple foods are sweet potato, rice, sorghum, etc.

Table 3.8.9 Annual Staple Food Consumption

Ksh	Nyando		Homa Bay			Total
	Miwani	Muhoroni	Riana	Nyarongi		
				Rapedhi Lwala	Nguku	
Consumption per household (kg)						
Mean	1,329	1,151	1,245	918	932	1,115
Min.	364	208	429	156	260	156
Max.	3,744	2,236	2,652	2,236	1,820	3,744
Consumption per person (kg)						
Mean	200	170	186	159	147	173
Min.	46	69	69	52	43	43
Max.	416	291	322	312	243	416
Breakdown of consumption (%)						
Maize	57%	64%	75%	74%	71%	68%
Sweet potato	17%	23%	17%	14%	20%	18%
Rice	12%	8%	7%	8%	5%	8%
Sorghum	10%	2%	1%	0%	0%	3%
Others	4%	3%	0%	4%	4%	3%
Production and consumption of maize (kg)						
a) Production	226	413	474	379	397	378
b) Consumption	758	737	933	679	662	754
a/b (%)	30%	56%	51%	56%	60%	50%

CHAPTER 4 APPROACH OF THE PROGRAMME FORMULATION

This chapter presents the approach of the formulation of the district development programme of the two districts. The approach is based primarily on participatory process, which does not merely incorporate the target groups such as vulnerables, farmers, villagers but also solicit all cadres of stakeholders in the respective district such as government officers, NGOs active in each of the districts, CBOs also active in their locality, etc. This chapter firstly presents the process of the participatory approach, and followed by conventional sector approach which is to supplement the participatory approach. Pro-poor development and also economic growth are to be considered in formulating the programme, latter of which will be primarily based upon endogenous development not depending much on external assistances. Lastly presented is inter-correlation with the existing and future development plans.

4.1 Approach of the Planning

The district development programme formulated in this Study aims at self-effort based development of local population at the community level, but at the same time they are also envisaged to enhance development of the economic sphere at regional level, extended space of 'district'. In the past, sector approach provided a main tool for formulating such regional development plans. It has been followed by participatory approach where local population themselves participate in planning to identify local issues and future visions, formulate concrete action plans and take actions by their own initiative to realize what they have planned. This has the typical character of bottom-up approach initiated to deal with community development, but nowadays it can even be applied to PRSP at national level.

Under such historical flows, it is advised that issues prevailing on the ground should of course be identified by the people and then all these issues can be summarized at a wider level, say divisional level and district level. In addition to this process employed as the basic approach, prioritization of development components preconditioned by capital flow and application of sector approach that supports the prioritization are also used to assemble the plans. In other words, a process of capacity building is followed at the basal downstream so that local population discover their own capacity that is capable of solving their own issues, but in parallel another process of streamlining public services and public infrastructure projects to develop this capacity into vitalization of local economy and acceleration of growth is added at the upstream.

The approach of the planning in this Study is therefore a sort of hybrid, composed of participatory and conventional sector approaches. As shown in the lower part of Figure 4.1.1, identification of constraints and opportunities involve all the cadres of participants, who are also responsible for the identifying development approaches and strategies and then finally development programmes with priorities. On the other hand, the upper part of the figure shows the conventional sector approach, which starts with sector analysis dealing with agriculture and livestock, fisheries,

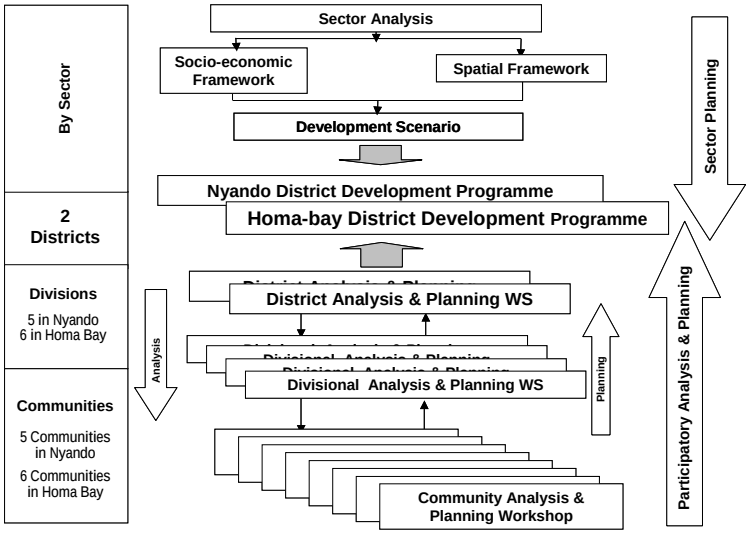


Figure 4.1.1 Conceptual Flow of the Hybrid Planning

infrastructure, education, and health. Based on the situation analysis especially from the viewpoint of quantitative data, the Team presents the socio-economic framework, which mainly consists of population projection as well as economic growth indicators, represented by gross regional (district) product per capita. Another frame, called spatial framework, defines the recommended future land use pattern and also improvement of road network.

4.1.1 Participatory Approach

The participatory approach of this Study does not necessary mean a bottom-up approach where only people's participation is at stake. It is rather participation of all the stakeholders such as rural people, community leaders, district officers, divisional officers, NGOs, CBOs, common interest groups (CIGs) etc. who have interests in the development of the two districts. To involve those stakeholders, the Team conducts a series of workshops for analysis and for planning at both district level and divisional level and for mainly analysis at community.

1) A la Carte vs. A Set Menu

A hybrid of a participatory approach and a sector approach also means a hybrid of a micro-point of view and a maco-point of view, bottom-up and top-down, and also a la carte and a set menu. Both a micro-point of view and a macro-point of view are necessary in formulating development programmes and projects, but top-down planning process is often lacking in a micro-point of view, consequently, the development programmes and projects tend to be a set menu which cannot fully respond to the demand on the ground.

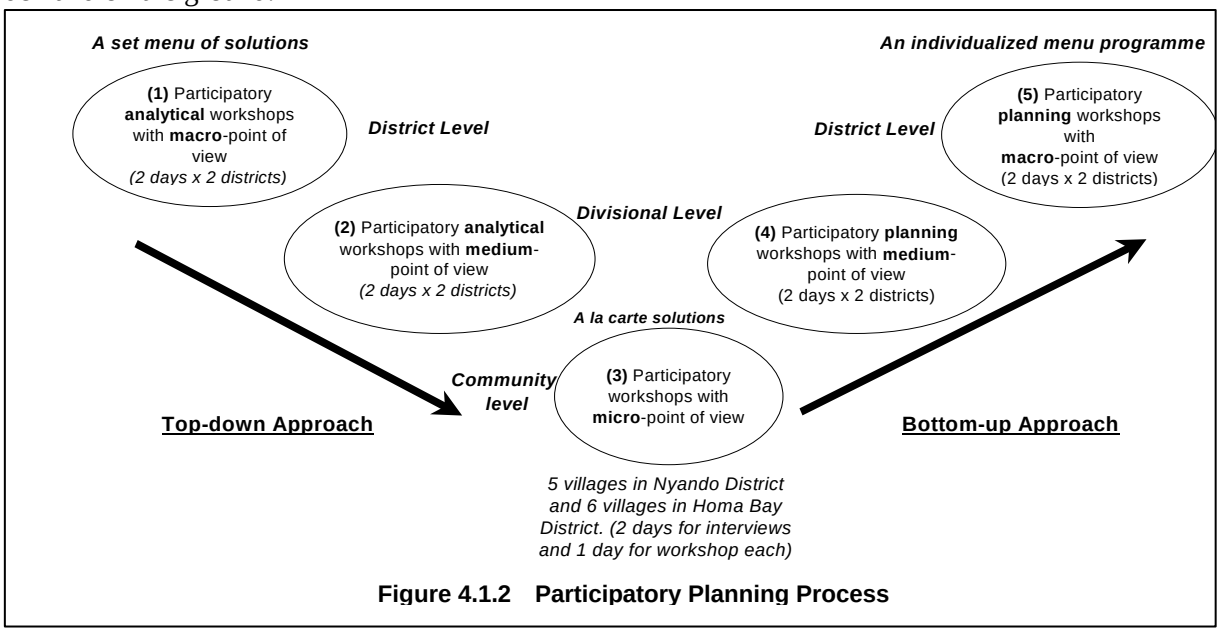


Figure 4.1.2 Participatory Planning Process

To avoid that, three levels of workshops are held from district level, divisional level to community level, then back to divisional level and district level again as shown in Figure 4.1.2. Since it is impossible to have community level workshops or interviews in each and every community of the districts, representative communities, which can stand for the prevailing natural and socio-economic conditions in each division, need to be selected from a macro-point of view.

The top-down procedure to choose the communities, which is analytical process, is as follows: 1) hold a district level participatory analytical workshops with district officers representing each and every ministries, divisional officers, and representatives of NGOs and CBOs wherein situation analysis from macro-point view and classification by division is carried out, 2) hold a divisional level participatory analytical workshop with divisional officers and representatives of communities, NGOs and CBOs, and 3) during which situation analysis by division is conducted and also the selection of communities

representing each division is made.

Then, the bottom-up procedure, which is participatory planning process, starts with: 1) community level participatory workshops with local people using some of PRA tools and problem analysis with prioritization, and identifying success stories, 2) divisional level participatory planning workshops where priority approaches, strategies and programmes / projects by division are identified, and finally 3) district level participatory planning workshops setting up priority approaches, strategies and programmes / projects by the district. In this participatory planning process, a series of workshops are organized to combine a macro-point view and a micro-point view, top-down and bottom-up, and a set menu and ala carte.

2) Problem Solving vs. Desirable Future

One of the main tools used in the participatory workshops is Problem Analysis illustrated in the figure below and it has several advantages such as; 1) we can see the structure of existing problems easily through cause and effect relations, 2) We can avoid simple wish lists where solutions are all input-from-outside-oriented, 3) we can see the alternative solutions for a same issue so that we can prioritize them taking into account for example available fund, and 4) we can compare the problem analyses of different communities and synthesize them into one which covers all the issues as the least common multiple, if we choose a common core problem, like 'life of the people is not easy', which can cover all the possible issues.

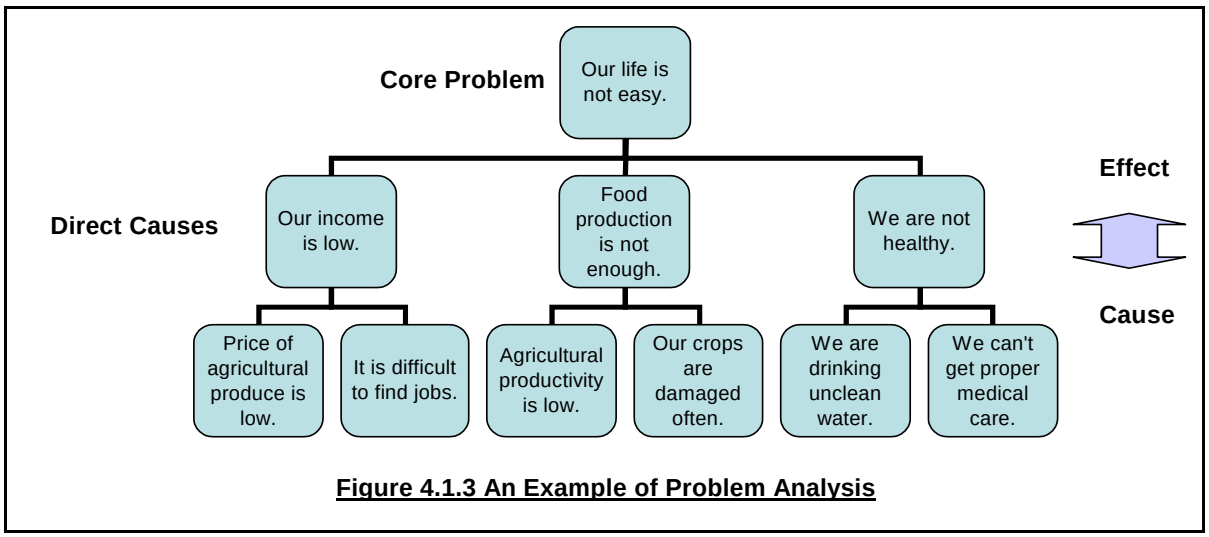


Figure 4.1.3 An Example of Problem Analysis

Problem analysis, however, has some major shortcomings for example; 1) We can only analyze "problems" so that we can find solutions for immediate improvement but not necessarily in a long term direction, 2) It is not always appropriate to think about development from problems, threats or even from the view point of just poverty prevalence. Corresponding to the fist shortcoming, some solutions which have not come from community level workshops are added at divisional and district level planning workshops from macro or sector point of view. To mitigate the latter shortcomings, success stories (a tool of Appreciative Inquiry) of CBOs and other community groups are presented at divisional and community level workshops to think about positive and desirable future.

3) Decision-Making , Agenda, and Major Tools Empoyed in the Workshop

In the participatory planning process of this Study, decisions are made by consensus at three levels; namely, district level, divisional level and community level. The components to require the consensus and/or decision during the workshops are as follows:

- At the district level participatory analytical workshops, comparative analysis of general

characteristics including issues, potentials, opportunities etc. of each division in the district,

- At the divisional level participatory analytical workshops, selection of communities (workshop sites) which represent each and every division to which the community belongs,
- At the community level participatory workshops, priority issues / solutions of each community,
- At the divisional level participatory planning workshops, priority approaches, strategies and programmes / projects in each division based on the priority issues / solutions of the communities together with the divisional government staff, and
- At the district level participatory planning workshops, priority approaches, strategies and programmes / projects in the district based on the priority approaches, strategies and programmes / projects of the divisions incorporating the views of the district level government officers.

Including the issues above which require consensus and decision in cases, following shows the agendas and major tools employed for the three level workshops:

At district level analytical workshops (2 days x 2 districts):

- Introduction by the Team; outline and direction of the Study based on endogenous development philosophy, position of the district in the province and Kenya, preliminary observation and process of participatory planning,
- Review of the current District Development Plan (2002-2008),
- Comparative analysis of general characteristics including issues, potentials, opportunities etc. of each division in the district,
- Problem analysis of the district using “Life of the people in the district is not easy” as the core problem (starting point of the problem analysis), and
- Success stories (best practices) of programmes / projects in the district.

At the divisional level analytical workshops (2 days x 2 districts):

- Introduction by the Team; outline and direction of the Study based on endogenous development philosophy, position of the district in the province and Kenya, preliminary observation and process of participatory planning,
- Situation analysis of each division in the district; resource mapping, rich-poor profile,
- Problem analysis of each division using “Life of the people in the division is not easy” as the core problem,
- Success stories (best practices) of CBOs and other community groups; who started, how decisions were made, what were good, lessons learned, how we can utilize the lessons for other organizations / groups, etc., and
- Selection of communities (workshop sites) which represent divisions.

At the community level workshops (2 days for interview and 1 day for workshop x 11 communities):

- Introduction by the Team; outline and direction of the Study based on endogenous development philosophy,
- Situation analysis of the community; history of the community, trend-analysis of key issues, (resource) mapping, rich-poor profile and success stories (best practices) in the community,
- Problem analysis of the community using “Life of the villagers is not easy” as the core problem, and prioritization of the major issues (usually direct causes of the problem tree) / solutions, and
- Selection of a representative who presents the results of the community level workshop at the

divisional level participatory planning workshop. He or she also attends the district level participatory planning workshop.

At the divisional level planning workshops (2 days x 2 districts):

- Presentation of the results of the community level workshop by a representative of each community,
- Refining the common objectives tree prepared by the Team synthesizing all the community level problem trees to cover each and every issue shown in the problem trees at community, divisional and district level workshops,
- Prioritizing approaches, and strategies under each approach by division, and
- Identifying priority programmes / projects for priority strategies by division.

At the district level planning workshops (2 days x 2 districts):

- Presentation of the results of the divisional level workshop by a representative of each division,
- Prioritizing approaches, and strategies under each approach as the district,
- Identifying priority programmes / projects for priority strategies as the district, and
- Brief description of priority programmes / projects; major activities, rough schedule, who implement, major inputs, and rationale.

4.1.2 Sector Approach Supplementing the Participatory Approach

1) Development Scenario Based on Socio-economic and Spatial Frameworks

A development scenario is designed from the viewpoints of socio (macro)-economy: 1) agricultural sector will be the core of development as the majority of the people in the rural areas depends on it, and 2) employment opportunities will be created by surpluses produced by the primary industry, which are delivered to cities and towns, and agro-processing and fishery products in the secondary industry are shipped to markets. The markets will be the cores of the tertiary industry development. The development scenario begins with the primary industry development, but because it cannot alone create employment opportunities enough to activate the regional economy, the scenario further pursues to intend shifting from the primary industry to secondary and the tertiary industries from socio-economic point of view.

As well as describing the structural change of industries in the development scenario, it is also necessary to consider the relation among spots, lines and areas. Spot means villages (group of communities) and towns where people live. Line means road network to connect the spots. Then area means farmlands and lakeshore, the resources of the primary industry. It is necessary to understand the geographical relations among them. It should also be taken into account the fact that the people and products move beyond the boundaries of the districts. Therefore, the geographical relations will be mapped extending adjacent districts. The scenario of spatial development (including movement of the population and center of physical distribution etc.) will be described considering the geographical relations.

2) Socio-economic Framework

Socio-economic framework is to give basis for describing the priority development scenario of the study districts. Socio-economic framework is defined as to describe the socio-economic situation of the target area in the target year by using several indicators[1]. Population projection forms the basis of

[1] T. Hashimoto (2004), “Competitive Edge for Development Consultants”, Engineering and Consulting Firms Association, Japan (ECFA)

the socio-economic framework. Based on the projected population and available data, gross regional income per capita is projected from present to the target year of the development plan. To achieve positive growth per capita, the production increment in economic term should not be less than the population growth. Some development scenarios are examined in the course of building the framework.

The available basic data used for the socio-economic framework are: 1) 1999 Population Census (used for population projection, basis of population by age group and sex), 2) Annual Reports of District Agriculture and Livestock Offices and 3) The District Development Plan 2002 –2008 (fact sheet gives household income by sector, population by rural and urban etc.). With the availability of the data, following procedure is taken to build up the socio-economic framework:

1st Step: To project future population of the District to make the pre-condition of the framework: 1999 Population and Housing Census, Analytical Report Volume VII made population projections taking into account past trend of mortality and fertility plus the effect of HIV/AIDS. The population projection is based on the estimation of the above report.

2nd Step: To estimate current production and gross value of crops, livestock products and fish: using the annual reports of the District Agriculture and Livestock Offices, firstly the gross production values of agricultural products in 2004 are estimated. The agriculture products include cereals, legume, root crops, vegetables, fruits, and cash crops such as rice, sugarcane, groundnuts, cotton, tobacco, livestock products such as meat, eggs, honey, hide and skin, and fish.

3rd Step: To estimate agriculture income using net income ratio of each product: the net income of the agriculture production is estimated multiplying the gross value of each product by net income ratio. The net income ratio of each product is estimated based on the field survey of the Study Team.

4th Step: To estimate gross regional income by using the contribution ratio of sectors to the household income: the data on contribution to household income appears on the District Development Plan fact sheet. Categories or sectors defined in the fact sheet are agriculture, rural self-employment, wage employment, urban self-employment and others.

5th Step: To estimate gross income per capita by rural and urban areas: using the data of rural and urban populations.

6th Step: To establish development scenarios based on the current status estimated above: options of the development scenarios would be increase of agriculture production area, increase of productivity, value adding, structural change of sectors, etc. Arable land in the District and the population constrain the scenario setting.

The increase of gross regional income is projected and targeted to improve the living standard of the district population as well as to keep up with the population growth. We set the target case as: the growth per capita is almost equal to the highest experiences of national level per capita growth ratio. The optimal annual growth of GDP per capita in Kenya for the last two and half decades is around 2 %. Therefore our target for the target case is the annual growth per capita at 2 percent. This translates into about 4 percent growth per annum of gross regional product considering the population growth. The target income per capita in the target year is estimated according to the above settings. To achieve the target, basically three development scenarios are examined: 1) productivity development of agriculture sector, 2) productivity development + increase of rural self-employment (value adding of the products) and 3) urban sector development without agricultural productivity development.

3) Land Use and Spatial Framework

Following the socio-economic framework, land use is examined and spatial framework is built up. The economic framework is based on agriculture production as the major contributor to the economic growth, so the land uses are to accommodate the strategic crops and shall be planned in line with the natural condition, present cropping patterns, etc. Another contributor to the growth is increase of rural employment, which means value addition to the primary products. Therefore, this contributor is very closely associated with the strategic crops.

As for increase of rural employment being one of the contributors to economic growth, rural centers located in those areas where strategic crops especially having potential of processing should be strengthened. Markets located in those centers should be improved, for example putting up of concrete floor, roofing, toilet facilities, information center, etc. Considering the marketing issues, rural road infrastructure improvement is planned to improve transportation network within and to outside the Study Districts to formulate the spatial framework.

4.2 Pursuing Pro-poor Development, as well as Economic Growth by Endogenous Approach

In formulating development plans in the Study, pro-poor targeting should be placed as a basic thought from the standpoint of human security amidst the given high poverty index, in parallel regarding broad-based economic growth on the viewpoint of growth promoting. In this context, alternative way of decision, whether to take poverty alleviation or to take growth acceleration is not realistic, but it is essential to find the optimum combination of coupling pro-poor targeting with broad-based economic growth.

Of course, it is admitted that under the current status of limited capacity to procure development funds, immediate realization of such tools as public works relying on external resources is very much limited, and many developing countries including Kenya still have not solved their poverty problems through a way of trickling down benefits brought about by their economic growth. From these facts, basic concept of growth acceleration is best focused on “the promotion of endogenously generating local industries making better use of locally available resources”. Endogenous development is therefore the basis in this Study to pursue the board basis economic growth as against exogenous development. Exogenous development also has some advantages, as shown in the box, but it depends on someone else outsiders who are not the people who live, make livelihood, and have an ambition to develop in the district.

Outlining the penetration degree of commodity-based economy in the Study area, Nyando District can be included in an economic sphere centered at Kisumu, a commercial center, since it is located in the hinterland of the provincial capital Kisumu, the third largest city in Kenya. Small towns like Ahero are also included in this district where commodity marketing has to some extent developed over an area encompassing rural and urban parts including Kisumu. On the other hand, in Homa Bay District, rain-fed farming has been developed over the inland plateaus but it still remains in a self-supply level. This is one of

Exogenous Development, not pursued in this Study:

The approach by exogenous development means to take advantage of any external factors from outside the region. A typical example is the case where a foreign large enterprise builds its factory in a region. Many developing countries have so far taken preferential measures on ownership, market, or taxation to encourage foreign enterprises to invest in their countries. Advancement of a foreign enterprise into a region has had immediate effects on the employment and economy in the region. A large number of regional people have been employed and they have drawn cash income.

It is also expected that invitation of a foreign enterprise will bring about other merits in a long-term perspective. They include transfer of skills and techniques, development of related industries, and improvement of infrastructure. However, introduction of foreign capital brings about not only merits but also demerits to a regional economy. Where labor supply far exceeds labor demand in the region, the wages tend to go down. People in the region have been forced to work at lower wages. Moreover, since foreign investment is made based on the global strategies of the enterprise, it is uncertain whether its regional factories will continue operation permanently. There is some possibility that they will suddenly stop operation or move to other regions or countries.

the reasons why commodity flow to Homa Bay town including daily prerequisite commodities is still confined to the importation through inland roads from external areas.

Under such ambient conditions, the focal point in considering how to develop local industries should naturally be started from locally available resource material, to add value while generating employment, finally attaining development of local economy through this process. Since multitude of local population rely their mainstay on agriculture, farm sector should not be disregarded because of providing livelihood means and foods for them. No less important is the standpoint of how to promote labor-intensive secondary industries so as to create local employment opportunities, most probably by utilizing the farm and livestock products.

Namely, the process of developing local industries should begin with the stabilization and development of primary industries including agriculture, followed by promotion/strengthening of local markets where local employment can be generated, further proceeding to development of secondary ones including processing programmes/ projects of agricultural products that can add values as well as provide job opportunities. What is sought here includes endogenous generation with steady or sustainable development of local industries admitting the slow but steady pace of evolution.

In addition, promotion of the tertiary industries should be placed in the scope of the Study. Because these industries are often run in urban areas, it is required to consider emigrating population from rural to urban areas. It is necessary to keep in mind that acquiring employment in urban formal sectors including office staff and enterprise employees is not easy for rural population and such a tendency is more or less observed in all African countries. Despite the fact that employment possibility in formal sectors is closed, many rural inhabitants move to urban areas. This tendency may stem from an exhaustive weariness of primary industries laying behind, alongside with lack of promotion activities for such local-based primary industries including processing activities. This is the reason why the suggestion explained above was made in which primary industries and related secondary ones should be placed as a core even though the progress rate were too slow.

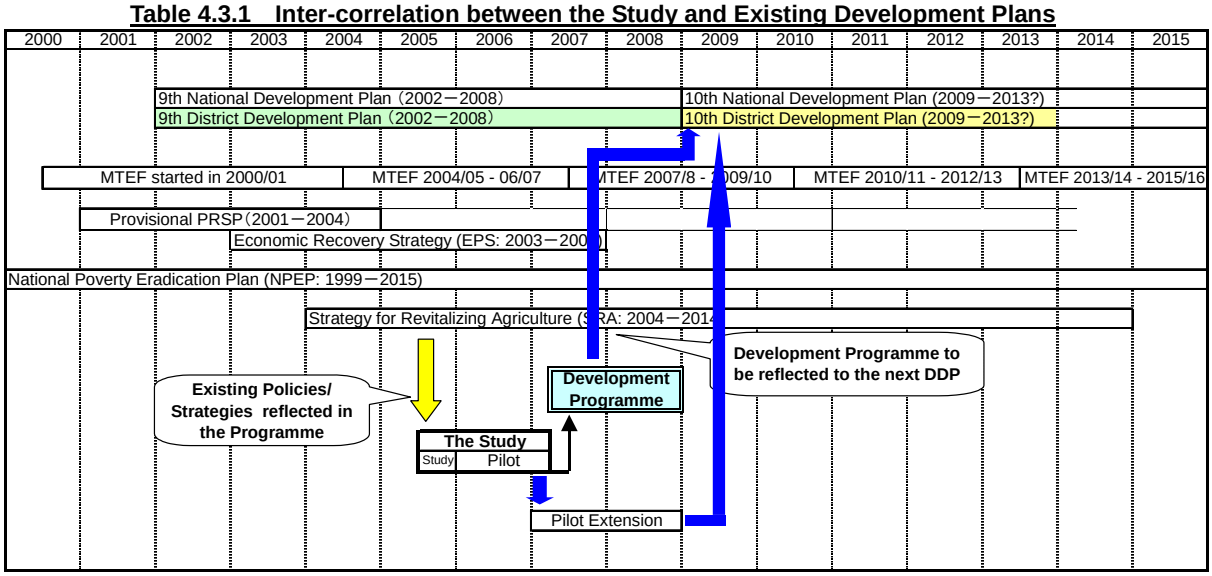
4.3 Inter-correlation with the Kenyan Development Plans

The Development Programme formulated under this Study should well refer to the existing development plans and budgeting system in Kenya. Kenyan Government has been preparing its own national, sectoral, and district development plans, and introduced a Mid Term Expenditure Frame (MTEF) in 2000/01 which is a three-year rolling budging system. These plans that the Study should refer to are listed below with an illustrated table shown below:

- Economic Recovery Strategy (EPS: 2003 – 2007)
- 9th National Development Plan (2002 – 2008)
- 9th District Development Plan (2002 – 2008)
- National Poverty Eradication Plan (NPEP: 1999 – 2015)
- Strategy for Revitalizing Agriculture (SRA: 2004 – 2-14)

This Study should take into account the direction, strategies, priorities mentioned in the above Plans and Strategies. Of them, Economic Recovery Strategy carries the overarching development strategy of Kenya, in line with which this Study should direct the future development of the two districts. National development and also district development plans are to be well reviewed, from which on-going programmes/projects will be identified. These on-going programme and projects should be given priority especially in terms of budgeting.

Table 4.3.1 Inter-correlation between the Study and Existing Development Plans



Reflecting all these existing plans and national strategies, this Study formulated the district development programmes based upon the outcomes from the series of participatory workshops. Lessons learned from the implementation of some prioritized projects as pilot were taken into account in fine-tuning the development programme. Therefore, the Study should also try to be reflected into the next district development plan to be prepared by the district government. The next district development plan is to start from 2009, hence the preparation is expected to commence as early as in mid 2007. As shown in the second objective of this Study, this Study is 'to improve the planning process at the district, division, location and community levels based upon bottom-up approach'. The exercise through the formulation of the district development programme in this Study is therefore meant to be such that the district themselves can copy the methodology to produce their 10th district development plan.

PART II

NYANDO DISTRICT

CHAPTER 1 SALIENT FEATURES

This chapter presents specific features for Nyando District in terms of spatial alignment, administrative setting, topography, present land uses, natural conditions, socio-economic conditions inclusive of demography with major development indicators, and major sectors in the last sub-chapters. The major sector further elaborates the situation of Nyando District by agriculture, livestock, fisheries, infrastructure, health, and education.

1.1 Spatial Alignment

Nyando District is one of the twelve districts in Nyanza Province, which is located along the shore of Lake Victoria, the second largest freshwater lake in the world. The District lies between latitude 0°00' south and 0°25' south, and between longitude 34°45' east and 35°21' east. It borders Nandi District to the north and Rachuonyo District to the south while it also borders Kisumu District to the west and Kericho District to the east. Nyando District has a small shoreline to the southwest where it touches Lake Victoria. The District covers an area of 1,168 km^2 including 71km^2 of the lake water surface. A vast flat area, Kano Plain, stretches in the middle of the District while hilly terrains stretch in the northeast and the south.

The District is divided into five administrative divisions, namely Muhoroni, Miwani, Nyando, Lower Nyakach and Upper Nyakach Divisions. Large towns in the District are Ahero and Muhoroni Towns, each of which has a population of 30,327 and 31,145 people according to the 1999 Census. Awasi, the seat of the District Headquarters, is another important town in the District.

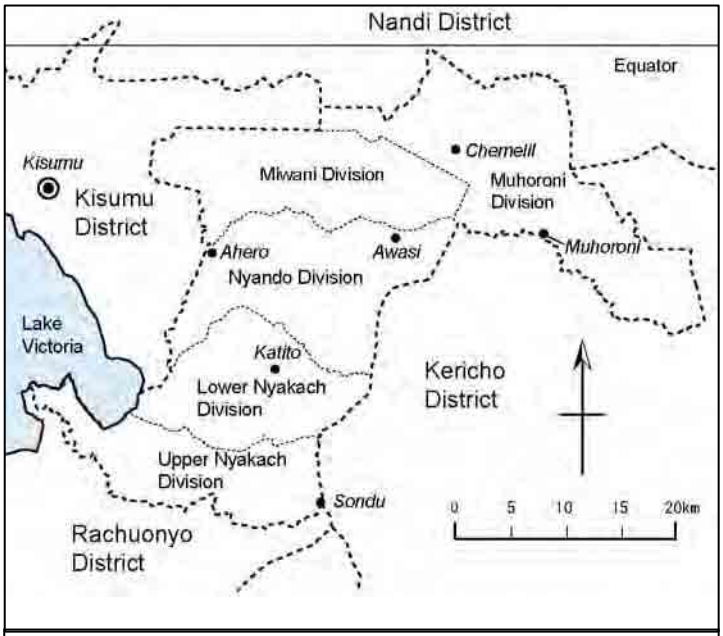


Figure 1.1.1 Administrative Boundary of Nyando District

For road networks, there are two major trunk roads in the District. One is A1, an international trunk road, which runs between Ahero and Sondu through Katito. It finally reaches the boundary with Tanzania via some large towns such as Kisii, Migori, etc. The other trunk road is B1, a national trunk road, which comes from western boundary and proceeds to eastern boundary by way of Ahero and Awasi Towns. B1 connects Nyando District with Kisumu City, the third largest city in Kenya, and with Nakuru, the fourth largest city.

In addition to the two major trunk roads, the District has some primary road networks, namely C19, C34, C35 and C37. C19 connects Katito and some large towns out of the District. It branches off from A1 at Katito and runs toward southwest. The road finally reaches at Mbita in Suba District through Kendu Bay and Homa Bay. C34 starts at Kisumu City and enters the District at the northwestern part of Muhoroni Division. Then, it runs amid sugarcane belt areas through Chemelil and finally reaches Muhoroni Town. Together with C34, C35 traverses Muhoroni Division from northwest to southeast. The road which starts at Awasi and runs toward northeast is C37. It crosses C34 at Chemelil and goes over the district boundary toward Kapsabet.

Aside from the road network which is mentioned above, there are some important roads in the District.

Generally, the district is endowed with relatively rich road networks, however rural roads in Nyando are not well maintained and frequently become impassible during rainy season. Aside from the roads, the District has railroad service which runs from west to east through sugarcane zone in Miwani and Muhoroni Divisions. It joins international railroad network at Nakuru City in Rift Valley Province. Goods train service is available once in ever day, and passengers service is on Tuesday, Thursday and Saturday to Kisumu, and Monday, Wednesday and Friday to Nairobi.

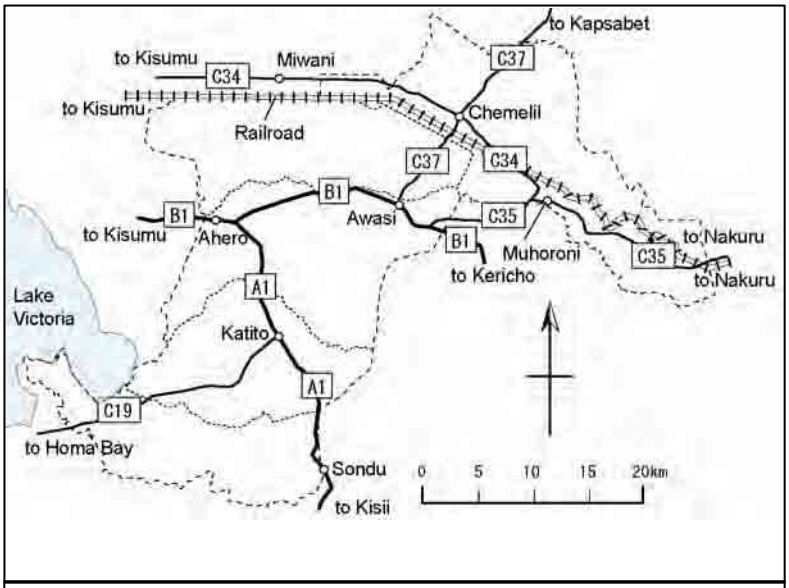


Figure 1.1.2 Transportation Network in Nyando District

1.2 Topography, Land Use and Climate

1.2.1 Topography

Together with other Districts, Nyando District constitutes a geographical region, Lake Victoria Lowlands and Floodplains Region. The District is surrounded by Lake Victoria and steep hills; the Lake is to the west and Tinderet Hills to the east while Nandi Escarpment is to the north and Kisii Hills to the south. The lowest altitude is same as the surface level of Lake Victoria, which is 1,134 m. The lowland area has a flat topography while it gently changes to steep slopes in northeastern and southern areas. The lowland flat area is called Kano Plain, which stretches to Miwani, Nyando and Lower Nyakach Divisions, and extends deep into Kisumu District. Hilly areas show up in Muhoroni and Upper Nyakach Divisions. The highest point of the District is found in Muhoroni Division, which is 1,801m above sea level. The tableland of Upper Nyakach, where the Divisional Headquarters is located, is called Nyabondo Plateau, highest point of which is 1,650m.

The largest river in the District is Nyando River, which basin mainly lies in Kisumu, Nyando, Nandi and Kericho Districts, and drains into Winam Gulf of Lake Victoria. The basin has a total area of 3,450km^2 and a river course of 153km. Even though it is an important source of water for the people in the region, it floods and damages homesteads and farmlands in long rainy season very often. Sondu River is the second largest, which delineates the district boundary at its most southern part with Rachuonyo District. A hydroelectric power plant has been under construction near the mouth

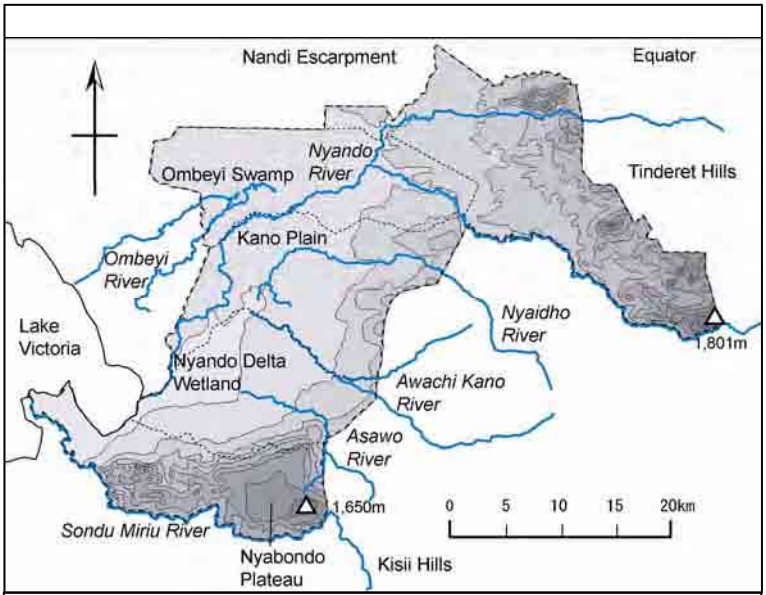


Figure 1.2.1 Topography and Rivers in Nyando District

of the river. Aside from these two rivers, Awach Kano, Asawo, Nyaidho and Ombeyi Rivers are also permanent rivers in the District. These rivers, except Ombeyi River, join in Nyando River in Nyando Delta Wetland and flow into the Lake. They have great importance as sources of irrigation water; local people utilize them to cultivate rice.

The District is endowed with several wetlands, some of which are located in inland areas while others are along the lakeshores. The largest and the most significant one is Nyando Delta Wetland, which is composed of many small wetlands and expands along the downstream of Nyando River. The second largest one is Ombeyi Swamp, which is also consists of some small wetlands and has 40km^2 in area.

1.2.2 Land Use

Concerning land use for Nyando District, communal land ownership is getting unpopular and most parcels of the land have been registered to individuals. Major land use pattern is pasture and farm. According to NEMA (2005), it is estimated that total agricultural potential area is 1,040km^2, which accounts for 95% of the total land area, while 394km^2, which accounts for 36%, is currently utilized. The District has a large area of wetlands which supply important natural resources to the local people. However, the people around the wetlands have been affected by flooding almost every year. Another environmental hazard is expanding gully erosions which are found in Lower Nyakach Division.

Since sugarcane has been the most important cash crop in the District, it covers the largest area of farmlands in the District. Most sugarcane plantations are found at the foot of Nandi Escarpment in Muhoroni and Miwani Divisions while rice irrigation schemes are located along permanent rivers of Kano Plain in Miwani, Nyando and Lower Nyakach Divisions. Sugarcane covers the largest area of land, followed by Maize, Sorghum, Cowpeas, Rice, etc. The District has over 20 irrigation schemes which covers about 3,000 ha of rice cultivation potential areas excluding the Ahero Pilot Scheme of 870 ha. However, only less than half of these areas are currently cultivated.

In southern half of the District, Nyando, Lower Nyakach and Upper Nyakach Divisions, livestock production is more popular. The density of livestock population is higher than in northern half of the District, Muhoroni and Miwani Divisions. The density of Sheep, for example, is 152/km^2 in the south while it is 54/km^2 in the north. The same tendencies are observed for Goat and Cattle population; it is 158/km^2 and 67/km^2 for goat while it is 163/km^2 and 101/km^2 for cattle.

In the District, planting of trees has been becoming common. In 2004, the total area of afforestation and reafforestation was 60 hectares while it was only 0.25 hectares in 1990 (NEMA, 2005). However, the percentage of forest cover in the district has been on serious decline because of unsustainable utilization of the resources. In most households, people plant trees within their homesteads and its household boundary for the purpose of getting timber and firewood, and also amenity. The activities prevail more in Muhoroni and Upper Nyakach Divisions thanks to enough rainfall and moderate temperature than in other divisions having uncertain rainfall and frequent floods.

Although there are 306 fishing beaches in Nyanza Province, only seven of which are located in the District; four are in Upper Nyakach Division and three are in Lower Nyakach. The largest beach is Sango Rota in Upper Nyakach Division, followed by Kusa in Lower Nyakach and Koguta in Upper Nyakach. The District has potential for fish farming and there are 106 fishponds which cover an area of 128,000 m^2. Most of the ponds are managed by individual farmers and located in Muhoroni, Miwani and Upper Nyakach Divisions. However, the fish farming has not yet reached cultivable level.

1.2.3 Climate

The District has equatorial type of climate, which experiences bimodal rainfall with the long rainy

season, which is from late March to June, and the short rainy season from October to February. The mean annual precipitation ranges between 1,100mm in lower areas to 1,600 mm in upper areas. Figure 1.2.2 shows average monthly rainfall, together with mean daily maximum and minimum temperatures by month, which were recorded at Ahero Irrigation Research Station (1970-1988 & 1994-2001 for rainfall and 1970-1988 for temperature). The mean annual rainfall at the station is 1,221 mm while the evaporation is 2,194 mm. In the long rainy season, it rains more than 100 mm every month.

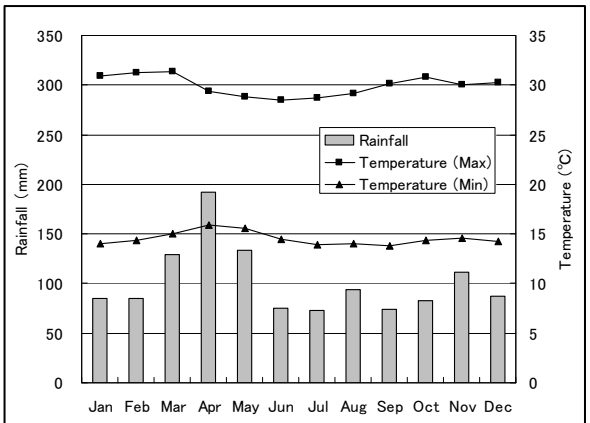


Figure 1.2.2 Rainfall and Temperature at Ahero

Temperature in the District differs according to the elevation. In lowland areas, the annual maximum temperature is between 30°C and 35°C while it is between 25°C and 30°C in highland areas. The minimum temperature tends to change in the same manner; it is between 15°C and 20°C in the lowlands and between 10°C and 15°C in the highlands. In Figure 1.2.2, the average maximum temperature shows the hottest of 31.4°C in March and the coolest of 28.5°C in June while the minimum shows 15.9°C in April and 13.8°C in September. It indicates that the change of the temperatures among months is much smaller, which is less than 3°C, than that of in a day, which is 15.4°C on average.

1.3 Socio-economy in Nyando District

1.3.1 Demography and Development Indicators

The Kenya 1999 Population and Housing Census found out a total population of 299,930 residing in Nyando District which has a total area of 1,168.4 km^2. Based on the 1999 census, Analytical Report Volume VII made population projections taking into account past trend of mortality and fertility plus the effect of HIV/AIDS. Following table summarizes the projected populations together with the populations and densities by division: as of year 2007 it is estimated that there are 372,602 population.

Table 1.3.1 Population Projections by Year in Nyando District

	Census Year	Onset of the Present DP	Onset of this Study	Completion of this Study
Year	**1999**	**2002**	**2005**	**2007**
Population: inter-census growth ratio: 3.4 % ('89-'99)				
Nyando	64,511	71,683	76,871	80,142
L/ Nyakach	49,247	54,722	58,682	61,179
Miwani	58,029	64,480	69,147	72,089
Muhoroni	63,450	70,504	75,606	78,824
U/ Nyakach	64,693	71,885	77,087	80,368
District	**299,930**	**333,274**	**357,393**	**372,602**
Population Density				
Nyando	259	288	308	321
L/ Nyakach	270	300	321	335
Miwani	257	286	306	319
Muhoroni	190	211	226	235
U/ Nyakach	368	408	438	457
District	**257**	**285**	**306**	**319**

Source: 1999 Census and Analytical Report Vol.VII

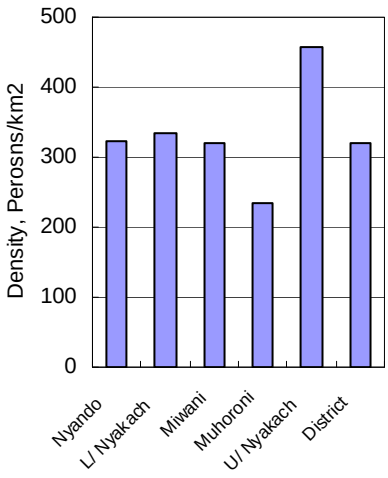


Figure 1.3.1 Population Density by Division in 2007

Figure 1.3.1 shows the population density by division, showing highest density in Upper Nyakach Division while the lowest in Muhoroni Division. Since climatic condition in Upper Nyakach is

preferable in economic activities than lower parts of Nyando District and also thanks to the proximity to the international highway running at eastern boundary of the division through Kisumu – Kisii, the division has achieved such high population density of projected 457 in year 2007. Muhoroni division is also endowed with preferable climate just as the case of Upper Nyakach division. However, Muhoroni division is located in the sugar belt area where farm lands are divided into larger size, say 10 acre per farm household, thus contributing to the lower population density.

The 1999 census surveyed that 10.7 percent of the total population of Nyando District live in urban areas while the rest in rural areas. Urban population specified in the census survey means those who reside in the town council areas: there are two town councils of Ahero and Muhoroni. In addition, district health plan indicates another composition of urban and rural populations as in the Table 1.3.2, though the definition of the urban and rural is not specified. According to the health plan, about half of the populations of Nyando and Muhoroni Divisions are said to reside in urban areas, while in Miwani, Upper Nyakach, Lower Nyakach Division most of the populations live in rural areas.

Table 1.3.2 Demographic Distribution by Urban and Rural

Division	1999	Urban Population	Rural Population
Nyando	64,511	30,320	34,196
Lower Nyakach	49,247	0	49,247
Miwani	58,029	1,393	56,636
Muhoroni	63,450	32,106	31,344
Upper Nyakach	64,693	7,634	57,059
Total	**299,930**	**71,453**	**228,477**

Source: District Health Plan, 1999

Table 1.3.3 shows employment population in the district. The employed people accounted for 44% of the total. As shown in Figure 1.3.2, they are classified into three categories as working for pay (12%), working in family businesses (9%), and working in family farms (23%). People working for pay and people working in family businesses were rather concentrated in the ages of 20 to 49 and the ages of 20 to 39, respectively. People working in family farms, on the other hand, had high ratios regardless of age because of the presence of the sugarcane belt in the district.

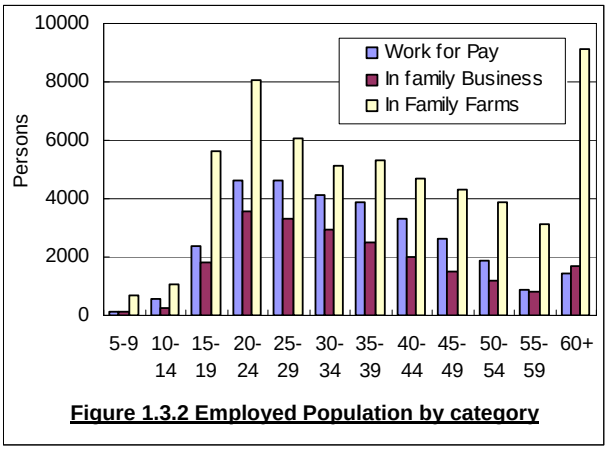


Figure 1.3.2 Employed Population by category

Table 1.3.3 Employed Population in Nyando District, 1999 Census

Age	Work for pay	In family business	In family farms	Unemployed persons	Economically inactive	Not stated	Total
5-9	148	119	707	252	37,535	2,582	41,343
10-14	561	244	1,038	178	42,290	519	44,830
15-19	2,385	1,803	5,641	1,482	25,532	460	37,303
20-24	4,622	3,556	8,039	2,301	6,281	432	25,231
25-29	4,610	3,300	6,084	1,269	2,523	250	18,036
30-34	4,127	2,936	5,122	587	1,655	191	14,618
35-39	3,886	2,524	5,303	378	1,371	170	13,632
40-44	3,302	1,984	4,706	303	1,001	146	11,442
45-49	2,637	1,529	4,326	206	843	108	9,649
50-54	1,905	1,197	3,885	151	756	87	7,981
55-59	854	807	3,102	95	649	78	5,585
60+	1,408	1,707	9,134	346	4,054	318	16,967
Totals	30,445	21,706	57,087	7,548	124,490	5,341	246,617
%	12	9	23	3	50	2	100
	45			55			

Source: 1999 Population Census

Following table summarizes the development indicators in Nyando District. The population growth rate for the period of 1989 – 1999 for Nyando is 3.4 percent, which is higher than those of Nyanza Province and national average, which are 2.3 percent and 2.9 percent. High population growth rate naturally implies high birth rate as well as high fertility rate per woman. Crude birth rate per 1000 population is 44.1 and total fertility rate per woman is 5.7 while national averages of the crude birth rate and total fertility per woman are 41.3 and 5.0. As per migration, net migration for Nyando is a little surplus, showing in-migration to the district. This was because of sugar industry in this area, soliciting many people to the area. This migration shows the movement of people having taken place for the last one year before the date of the census interview. After that, as Miwani sugar factory was closed down in 2000, the present migration to Nyando district may not be as same as the one recorded in the 1999 census.

Table 1.3.4 Development Indicators compared to Nyanza and National

Index	Nyando District	Nyanza Province	National
Population Growth, %	3.4	2.3	2.9
Crude Birth Rate per 1000 Population	44.1	45.8	41.3
Total Fertility Rate per Woman	5.7	5.5	5.0
Migration (-: out, +: in)	+0.4 (M), +1.3 (F)	-5.5 (M), -3.4)	-
Infant Mortality per 1000 live births	116.1 (150%)	111.6	77.3
Under-five Mortality per 1000 live births	212 (183%)	192	116
Crude Death Rate per 1000 pop.	22.4 (191%)	19.0	11.7
Life Expectancy at Birth, yr	Male: 37.7 (-15.1) Female: 42.9 (-17.5)	Male: 41.7 Female: 48.0	Male: 52.8 Female: 60.4

Source: 1999 Census; Note: Percentage in parentheses is the magnitude against the national level.

Nyanza Province is well known for its high infant and under-five mortality rate, which is mainly due to high prevalence of malaria, unhygienic water, etc. The table shows exceptionally high mortality rate as compared to the national level; infant mortalities in Nyando is higher by 50% as compared to the national level and under-five mortality rates for the districts is also about double than the national average. The under-five mortality is 212, which implies about one in every 4.7 children of Nyando children cannot see their five-year birthday. Affected by these high infant and under-five mortalities, crude death rates for the district also become very high, showing about two-fold death rates against the national level. Life expectancy is no exception either. Male life expectancy at birth according to the 1999 census is already below 40 years old, 37.7 years only, as against the national average of 52.8. Women show longevity than men, giving 43 years old which, though, is still very low as compared to the national average of 60.4. The life expectancy was actually reduced by about 10 years during the last 2 censuses period due mainly to HIV/AIDS.

Central Bureau of Statistics issued the poverty assessment result; titled “Geographic Dimension of Well-Being in Kenya, Who and Where are the Poor?” in 2003, showing the poverty indexes in lower cadre than district level. The result shows the poverty dimension by district, division and also by location level. Figure 1.3.3 shows the poverty incidence in Nyando by division. The figure shows Miwani, Nyando and Upper Nyakach Divisions show high poverty incidence reaching between 60 and 70 percent while Muhoroni and Lower Nyakach Divisions show poverty incidence between 50 and 60 percent. Though the Lower Nyakach shows a

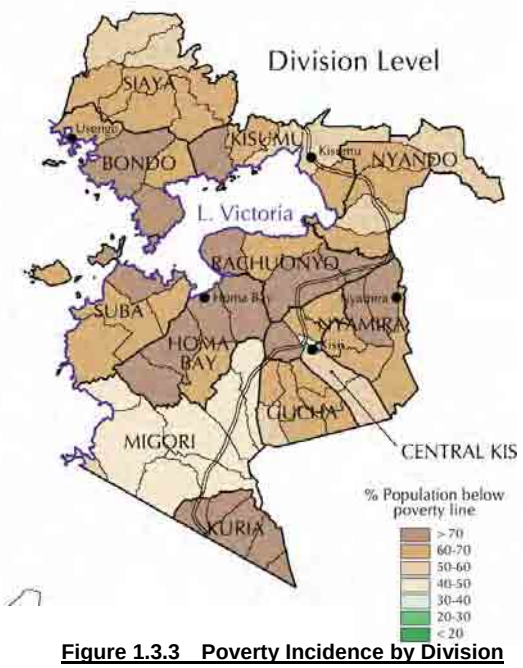


Figure 1.3.3 Poverty Incidence by Division

little better situation as compared to other divisions, the survey was carried out primarily in 1997 which was before some of irrigation facilities, like Awach Kano, reduced the irrigable area due to sweeping away of the main headworks. Therefore the poverty incidence in Lower Nyakach may be believed higher than that shown in the figure above.

1.3.2 Major Economic Activities

The major economic activities come from the primary industry sector; mainly agriculture sector in this district. Markets of the district are dominated by the primary products, which are maize, sorghum, finger millet, cassava, sugarcane, rice, vegetables, fruits, raw cotton, livestock, and fish. There are also several processed products marketed in the district, including sugar, spirits, bakers yeasts, tomato pastes and jams, sweet potato chips and doughnuts and processed fish, almost all of which are in fact processed from the primary products. Among those, sugar from sugarcane is the main industry in Nyando District while traditional one has been processed fish.

Maize, sorghum, finger millet, vegetables, fruits, livestock, and fish are all sold in the district market. In the district there are 14 major markets including one at the border with Rachuonyo District. They are Ahero and Awasi in Nyando division, Katito in Lower Nyakach division, Oboch, Sondu and Nyabondo in Upper Nyakach division, Muhoroni, Koru, Chemilil, Chemelil Round About and Fort Tenan in Muhoroni division, Masogo and Ombeyi in Miwani division, and Nyakwere at the border between Upper Nyakach and Rachuonyo District. The markets are under the management of the local authorities. Most of the markets lack basic requirements for marketing agricultural commodities with regard to product quality and safety assurance.

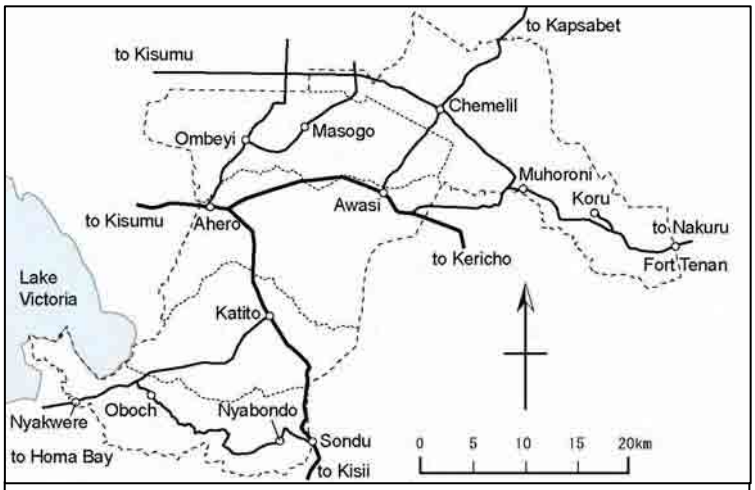


Figure 1.3.4 Location of the Market in Nyando District

Some of the food requirements in the region are imported from the neighbouring districts to make the region food secure. Deficits of the cereals, fruits and vegetables are internally imported from districts such as Kisii, Kericho and Nandi. The district also purchases some of fish from the neighboring districts such as Migori, Rachuonyo and Suba. Nyando District in turn sells bait fish to Nile perch fishers of Bondo and Busia Districts. The food imports are necessary to ensure food security for the local populations. There are imports particularly for sugar from COMESA region. The COMESA sugar is generally cheaper than the locally produced sugar thus making the locally produced sugar less competitive even in the domestic market.

There are rural centers where people gather, sell, buy and exchange goods. Economic activities such as tailoring, carpentering, commerce, small trading are taking place in the rural centers. Following figures show category of the shops operating in six rural centers of Ahero, Muhoroni, Katito, Awasi, Masogo and Oboch. Figure 1.3.5 shows the first three centers that are relatively bigger than the last three centers and the Figure 1.3.6 shows the latter three centers. As shown in the figures, retail shops surpass the others. Also many kiosks, defined as smaller retail shop, are operated. Other shops many in number are: restaurant, tailor (both in shop and on veranda), shoe repair, hardware, bicycle repair, textile/cloth, carpentry, metal work and barbers. Of these, tailor, hardware, carpentry, and

metal works are subjects of youth polytechnic institute. In fact, those local industries have absorbed graduates from respective youth polytechnics.

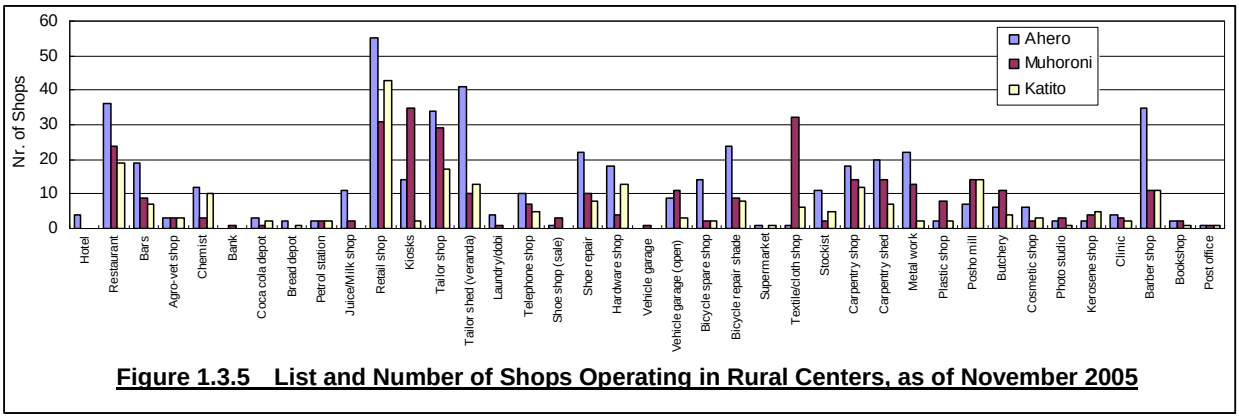


Figure 1.3.5 List and Number of Shops Operating in Rural Centers, as of November 2005

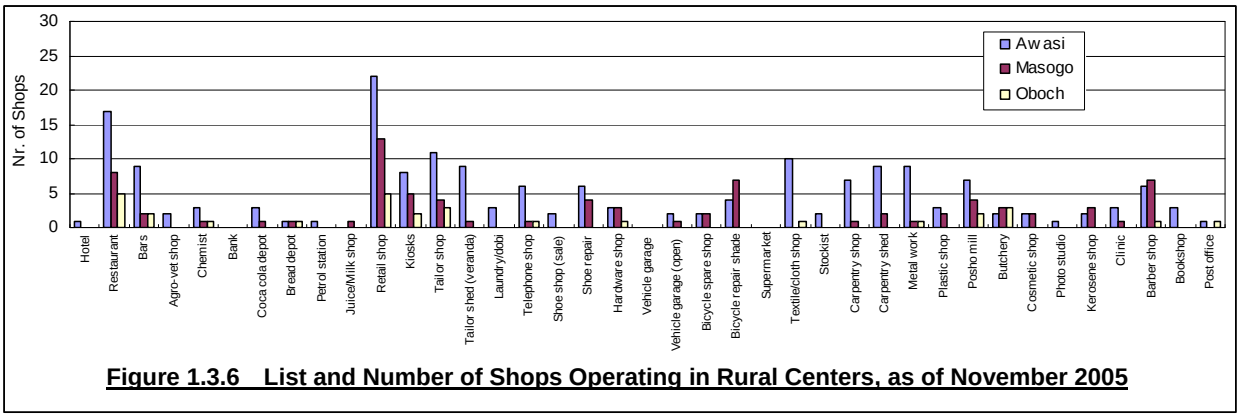


Figure 1.3.6 List and Number of Shops Operating in Rural Centers, as of November 2005

1.4 Major Sectors

This sub-chapter presents the situation of major sectors such as agriculture and livestock, fisheries, infrastructure, health, and education. This sector analysis is meant to capture the current situation and trends in Nyando District, which leads us to identify constraints and their causes, possible solutions to the identified constraints, past efforts and identified opportunities. The approach to identify these issues is composed of: 1) desk review of available documents such as annual reports of sectors concerned, district development plans among others, 2) field visits and physical observation, and 3) discussions with and interviews to the officers and people concerned. There were in some cases difficulties in getting some of the data due to poor information management, which may be the limitation to articulating this sub-chapter.

1.4.1 Agriculture and Livestock

1) Agriculture

Nyando District as a whole has considerable potential for producing food and cash crops. This potential may be indicated by: 1) a suitable climate (rainfall and moderate temperatures) in the areas of higher altitude such as Muhoroni and Upper Nyakach, 2) presence of permanent rivers such as Nyando and Awach, some of which supply the waters used for both gravity and pump fed irrigation schemes, 3) relatively good soils for rice, sugarcane and other crops, 4) presence of flat land in the Kano Plains that is amenable to irrigated paddy cultivation.

Farmers taking advantage of the above factors have produced a wide range of crops. The crops have been grown for a variety of reasons such as: 1) Soil type and presence of adequate moisture – rice, sugar, maize, 2) Needs for staple food – maize and sorghum, 3) Needs for cash – rice, cotton, sugar cane, groundnuts, fruits and vegetables, 4) Needs for food during droughts – cassava and sweet potatoes. Major crops include maize, sorghum, rice, sugar cane, groundnuts, beans, sweet potatoes ad cassava. Minor crops, on the other hand, include the rest i.e. finger millet, green grams, cow peas and a variety of fruits and vegetables.

Figure 1.4.1 shows the trend in hectarage for major food crops, and Table 1.4.1 shows the estimated areas under the respective crops including food crops (data in 2001 is not available). The areas under crops varied from year to year as farmers put different acreages depending primarily on rainfall, and also availability of oxen for ploughing or affordability of tractors and seed availability, and may be due to poor recording of the data[1]. The food crop which occupies the largest area is maize, the staple food of Kenyans, followed by sorghum and by paddy rice to lesser extent. Acreages of rice were affected by the closing down of the operations of the National Irrigation Board (NIB) in 1999. The scheme is now revitalized and acreages are set to go up from the season of 2005/06. Finger millet has been planted in very small areas less than 50 ha in total, which is already a form of dying crop.

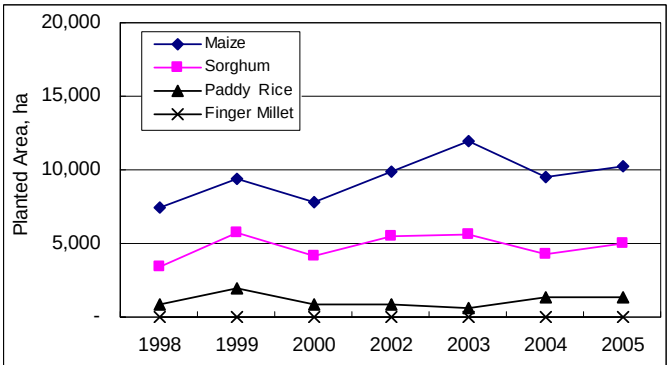


Figure 1.4.1 Hectarage Trend in Major Food Crops

Sugarcane is a very famous cash crop in this area. Northern part of Nyando

[1] For example only the extra acreage of perennial crops achieved in the year were included instead of including also the area planted in the previous years. Some of the errors were removed by inclusion of earlier acreages by the consultants. In addition, all the data is estimated without using proper sampling procedures. This gave data that the officers could not be sure of.

District is well occupied with sugarcane fields, wherein there are three sugar factories (though Miwani Sugar Factory was closed down in 2000). Figure 1.4.2 shows the trend in hectarages of sugarcane field from 2000 – 2005. It shows a tendency of continuous increment by year. Though it is said that all the three factories suffer from the problem of using old and inefficient technology and this makes it difficult to extract all the sugar which they could have extracted, still sugar remains a valuable cash crop for the farmers in Nyando. At present, there is an agreed gazetted price of cane at Ksh 2,015 per ton. There is a shortage of cane and all the harvested cane is paid for in cash within 2-3 weeks of delivery. This had not been the case in the past as most sugar companies had been mismanaged, leading to delayed payments. With the cash paid in a couple of weeks, farmers in Nyando have been encouraged to grow sugar cane, increasing the hectarage.

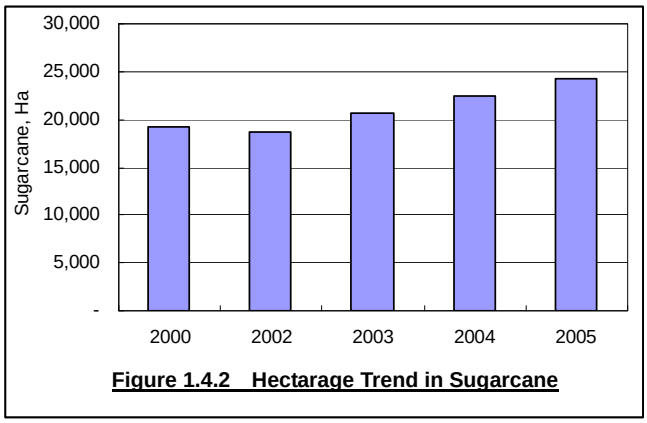


Figure 1.4.2 Hectarage Trend in Sugarcane

Table 1.4.1 Trends in Main Crops grown and Estimated Area under Each Crop 1998-2005, Ha

Crop	1998	1999	2000	2002	2003	2004	2005	Remarks
Maize	7,465	9,351	7,747	9,921	11,928	9,513	10,251	
Sorghum	3,444	5,771	4,207	5,471	5,625	4,213	4,990	
Paddy Rice	810	1,983	855	859	625	1,322	1,347	
Finger Millet	17	17	43	15	18	-	13	
Beans	1,672	2,018	2,433	2,198	2,028	1,951	1,831	
Green Grams	235	363	171	222	175	1,030	1,552	
Cow Peas	925	422	1,180	1,662	1,037	2,078	1,256	
Sweet Potatoes	550	505	585	346	523	290	346	
Cassava	646	1,088	1,689	377	600	819	564	
Groundnuts	330	463	494	718	794	622	403	
Simsim	3	1	2	3	2	-	-	
Cotton	NA	NA	20	680	550	324	382	
Sugarcane	NA	NA	19,152	18,594	20,660	22,529	24,250	
Kales	284	332	168	293	289	517	199	
Tomatoes	206	249	195	274	302	361	370	
Onions	48.5	59	45	55	63	101	58	
Cabbage	-	2	5	0.2	-	-	-	
Pineapple	-	-	86	9	12	-	4	
Bananas			469	472	522	633	435	
Mangoes	-	-	133	148	156	168	122	
Pawpaw	-	-	38	691	700	721	738	
Citrus	-	-	81	65	66	68	50	
Local Vegetables	257	223	135	358	299	327	213	

Source: Annual Reports, District Agriculture Office, Nyando District, 1998 - 2005

Figure 1.4.3 shows average cereal production composed of maize, sorghum, rice and finger millet per household, and the production of the cereals plus sweet potatoes and cassava (for detail, see Table 1.4.2). As shown, the cereal production in Nyando District is remarkably low, which has been hovering between 200 and 400 Kg only. Though specific data with regard to cereal consumption per HH is not available, it can be said that a better-off family consumes over 1,000Kg per annum,

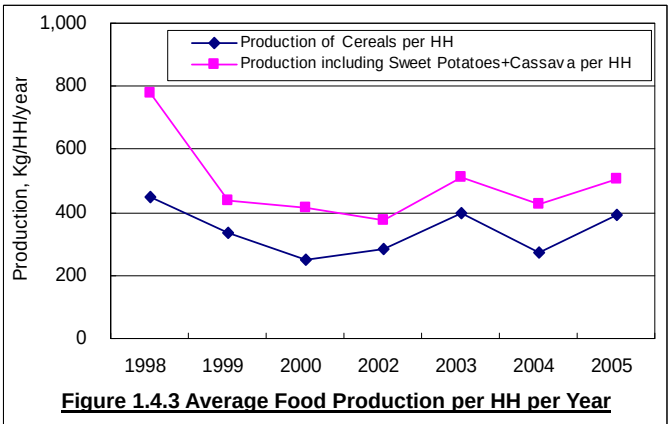


Figure 1.4.3 Average Food Production per HH per Year

while a poor family may survive with only 500 Kg. General practice may be that a family who produces less than 750 – 800 Kg per annum has to supplement the cereals by either buying or eating other food crops. The figure also shows the total production including sweet potatoes and cassava in addition to the first four major cereals. Even the total production is quite low, around 400 – 500 Kg only, not reaching 750 Kg per HH per annum. The figure tells us about as much as half volume of the food crop is now imported from outside of the district.

Table 1.4.2 Trends in Main Crops Grown and Estimated Production under Each Crop 1998-2005

	Crop	Unit	1998	1999	2000	2002	2003	2004	2005	Remarks
Staple Food	Maize	Ton	18,812	12,399	11,633	14,250	20,997	12,493	17,571	
	Sorghum	Ton	5,579	5,194	3,786	4,421	7,562	4,517	6,672	
	Paddy Rice	Ton	4,517	5,252	2,582	2,256	1,643	4,098	4,176	
	Finger Millet	Ton	9	8	15	5	8	10	7	
	Total	Ton	28,917	22,853	18,017	20,931	30,210	21,119	28,426	
	Production / Head	Kg	102	76	57	64	88	60	80	
	Production / HH	Kg	448	334	249	282	398	271	357	
	Sweet Potatoes	Ton	8,250	2,525	5,660	4,450	6,530	2,900	3,460	
	Cassava	Ton	12,920	4,515	6,400	2,230	2,220	9,000	8,190	
	Total+SP & Cassava	Ton	50,087	29,893	30,077	27,611	38,960	33,019	40,216	
	Production / Head	Kg	177	100	95	85	114	94	113	
	Production / HH	Kg	777	437	416	373	513	424	505	
Vegetable	Kales	Ton	2,840	2,988	1,965	3,590	3,630	5,734	2,730	
	Tomatoes	Ton	4,120	4,980	3,410	5,482	6,040	7,220	7,400	
	Onions	Ton	582	590	530	820	934	1,515	870	
	Cabbage	Ton	-	20	53	4	-	-	-	
	Local Vegetables	Ton	1,539	2,007	1,230	2,794	3,438	2,289	1,440	
	Total	Ton	9,081	10,585	7,188	12,690	14,042	16,758	12,440	
	Production / Head	Kg	32	35	23	39	41	48	35	
	Production / HH	Kg	141	155	99	171	185	215	156	
	Population	Persons	282,910	299,930	316,950	325,128	341,375	349,419	357,393	
	Nr. of HHs	Nr.	64,491	68,371	72,251	74,115	75,972	77,819	79,652	

Source: Annual Reports, District Agriculture Office, Nyando District, 1998 - 2005

Table 1.4.2 shows the production of vegetables as well, while the total production per household is summarized in Figure 1.4.4. Kale and tomatoes are the major vegetables but local vegetables such as amaranthus (ododo), spider flowers (dek), black night shed (osuga), etc. are also very much grown. Vegetable production per household per annum has been increasing except for years of 2000 and 2005 which were due to drought and flood. National average production of all the vegetables per household per annum is recorded at 270 Kg as at year 2002[2]. Since vegetables are perishable, not much volume can be traded across the district borders. Therefore, most of the Nyando people may be said to consume less volume of vegetables than the national average.

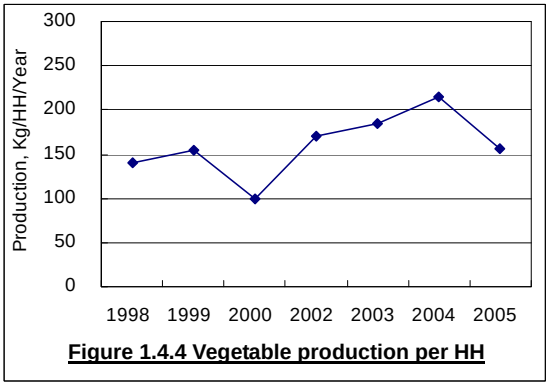


Figure 1.4.4 Vegetable production per HH

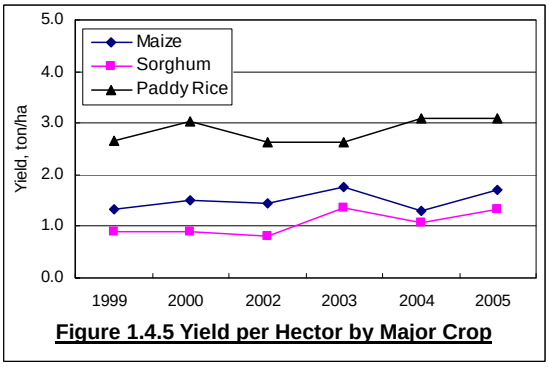


Figure 1.4.5 Yield per Hector by Major Crop

Figure 1.4.5 shows yield per hector by major cereals. The highest yield can be seen in paddy rice, which almost all the fields are irrigated. The paddy's yield

[2] FAOSTAT, http://faostat.fao.org/

is around 3 ton/ha, which is still lower than the potential. With irrigation and proper management, the yield can easily go up over 5 ton/ha as had been seen in NIB Ahero Pilot Irrigation Scheme. Maize and sorghum are mostly grown under rain-fed condition, so that most of the farmers do not want to invest much in hybrid seeds and chemical fertilizers. Thus the yield has been low.

Figure 1.4.6 shows gross production in Ksh per hectare by major crop. The production in Ksh was estimated based on the average production for three years of 2002, 2003 and 2004 and prevailing market prices in 2004 as indicated in Table 1.4.3. Tomatoes and onions fetch high profit while kale, which is very familiar to the Kenyan's diet, does not fetch much though the gross in Ksh is much higher than cereals. Sugarcane as expected can fetch very high margin of over 100,000 Ksh per hectare. However, the farmer has to wait for the first harvest until 18 months later, which hinders number of subsistence farmers from starting it. Followed are sweet potatoes and paddy. Sweet potatoes can be grown two times a year in places, so the promotion should be encouraged since the present area is very limited to some hundreds hectares only. Rice is also a promising cash crop and only cereal which can fetch fairly good price.

Table 1.4.3 Price of Major Crops, Ksh

Crop	Unit	Price (Ksh)
Maize	2kg	40
Sorghum	2kg	35
Rice	2kg	110
Finger millet	2kg	130
Beans	2kg	80
Ground nuts	2kg	120
Green grams	2kg	100
Cassava chips	2kg	40
Sweet potatoes	5 tubers	20
Onion	3 bulbs	10
Cabbage	1 head	30

Source: Annual Report, DA Office, Nyando, 2004

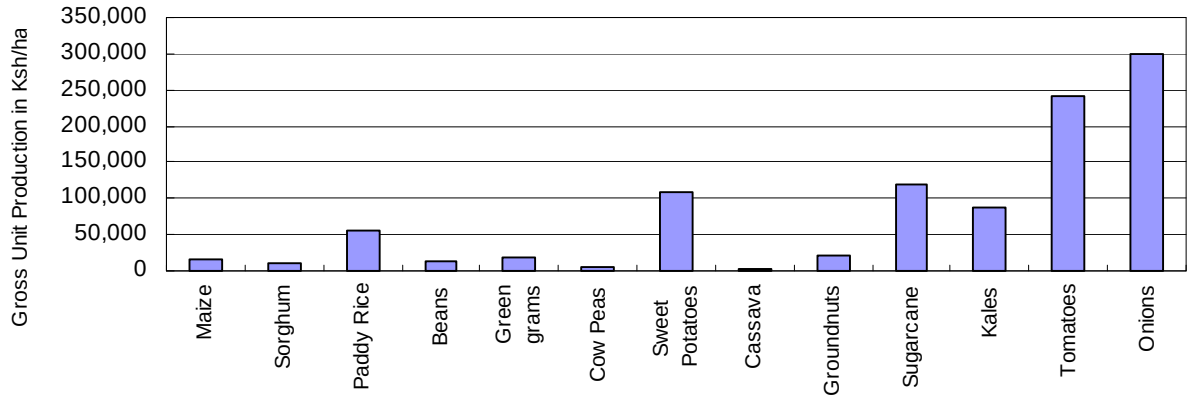


Figure 1.4.6 Gross Production in Ksh per Hectare by Major Crop

2) Livestock

As is common with many other Kenyan districts, no livestock censuses have been done in the last 30 years in Nyando District. Thus the data in this section is based on estimates by field officers. Nyando District is inhabited by agriculturists who keep many types of livestock. The district has a typical livestock mix of species found in all Kenyan medium potential districts. This mix includes cattle, sheep, goats, pigs, poultry, bees and donkeys. There are also some unusual types of birds such as quails and guinea fowls but these are few. Table 1.4.4 shows populations by livestock, and Figure 1.4.7 shows the populations of only major livestock such as local cattle, sheep and goats.

As shown in Figure 1.4.7, the populations of the major livestock have been steady increasing until year 2004. As of 2005, the numbers of local cattle, sheep and goats are estimated at around 134,000, 119,000, and 120,000 respectively. Number of households as at 2005 is estimated at around 81,000, therefore on average one family

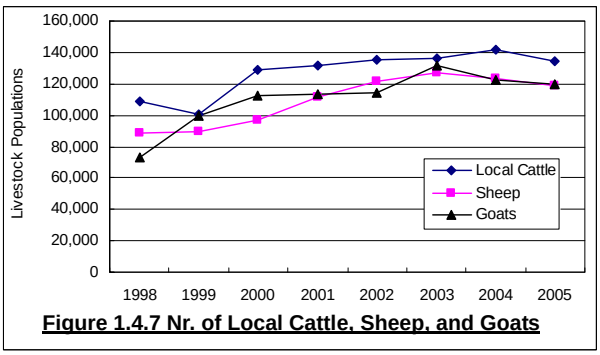


Figure 1.4.7 Nr. of Local Cattle, Sheep, and Goats

nowadays keeps less than two cattle each. As for population growth ratio, the cattle have increased by 23% (from 109,000 to 134,000), the sheep by 34% and the goat by 64% during the period from 1998 to 2005. The human population has increased during the same period by 26% (from 282,910 to 357,393), which means sheep and goat but cattle population growths have surpassed the human population growth.

Table 1.4.4 Population Trends in Livestock from 1998-2005

Kind /Type	1998	1999	2000	2001	2002	2003	2004	2005
Local Cattle	109,000	100,650	128,800	131,500	135,100	136,000	141,800	134,000
Exotic Cattle & Crosses	8,647	11,002	11,070	12,426	12,354	12,813	13,823	12,533
Sheep	88,580	89,885	96,899	111,400	121,340	126,775	123,200	119,000
Goats	72,802	100,109	112,535	113,700	114,270	131,615	122,530	120,000
Pigs	NA	NA	NA	NA	2,592	2,655	2,440	2,195
Indigenous Chicken	NA	NA	NA	NA	294,000	300,000	306,000	314,000
Layers	NA	NA	NA	NA	NA	22,000	24,000	14,000
Broilers	NA	NA	NA	NA	NA	24,000	30,000	29,000

Source: Annual Reports, District Livestock Office, Nyando District, 1998 - 2004

Table 1.4.5 shows livestock population by division as of 2004. Figure 1.4.8 picks up major livestock populations from the table, and divides them by number of households in each division. The table and figure show that Nyando and Lower Nyakach Divisions, which are characterized by relatively flat land having rangelands, have more numbers of livestock than other divisions. For example, on average a typical household in Nyando and Lower Nyakach owns about 2 local cattle, while other three divisions have an average of about 1.5 cattle per household. As per exotic and cross cattle, however, divisions located at higher elevation such as Upper Nyakach and Muhoroni have more due to the favorable climatic condition. Miwani Division has less numbers of livestock in almost all the livestock. This may be attributable to large areas of wetlands which often give tick born disease.

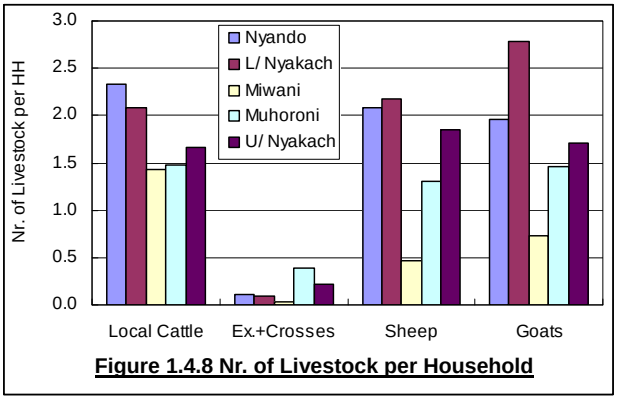


Figure 1.4.8 Nr. of Livestock per Household

Table 1.4.5 Livestock Population by Division as at 2004

Division	Local Cattle	Exotic & Crosses	Sheep	Goats	Pigs	Chicken	Layers	Broilers
Nyando	38,100	1,728	34,010	32,003	270	87,000	6,500	7,500
L/ Nyakach	27,100	1,296	28,300	36,044	400	88,000	1,800	2,000
Miwani	23,400	432	7,550	12,003	350	22,000	5,000	10,000
Muhoroni	26,000	6,912	22,890	25,605	1,300	46,000	4,700	9,000
U/ Nyakach	27,200	3,454	30,250	28,079	120	63,000	6,000	1,500
Total	141,800	13,822	123,000	133,734	2,440	306,000	24,000	30,000

Source: Annual Reports, District Livestock Office, Nyando District, 2004

Livestock are also sold for slaughter in order to get meat. Table 1.4.6 shows the meats in tonnage for consumption. Beef meat surpasses the others such as sheep and goat. Dividing the total tonnage by the district population, one may see average consumption of meat per head per annum. The annual consumption has been just over 5 Kg. This consumption is not enough, hence supplemented by beans and fish in terms of protein intake.

Table 1.4.6 Meat Production per Head in Nyando District

Meat	2001	2002	2003	2004
Beef, ton	1,443	1,369	1,430	1,410
Sheep, ton	116	143	220	243
Goat, ton	95	155	154	256
Poultry, ton	53	87	90	92
Total, ton	1,707	1,754	1,894	2,001
Population	325,128	333,274	341,375	349,419
Consumption per head	5.3kg	5.3kg	5.5kg	5.7kg

1.4.2 Fisheries

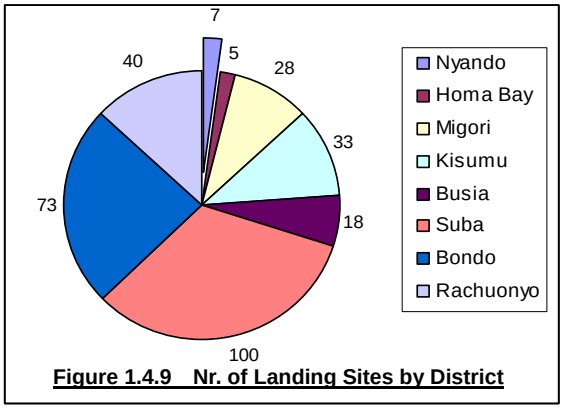


Figure 1.4.9 Nr. of Landing Sites by District

The fishery sector in Nyando District has been reported as the second largest economic activity in the District after sugarcane according to Nyando District Fisheries Department annual report for the year 2005. The fish produced in the District are from two sources namely 'capture' and 'culture' fisheries with the former being the far majority. Capture fisheries is an important economic activity in three 3 divisions in the district namely Nyando, Lower Nyakach and Upper Nyakach Divisions. The fish are landed at the various fish landing sites. There are seven main landing sites in the District accounting for about 2.3% of the 304 landing sites in Lake Victoria under Kenya's jurisdiction. The landing sites are Kusa, Sango Rota, Ng'ou, Bala/Kombewa, Singida, , Koguta, and Komwaga beaches. These landing sites are located along the shoreline of about 15 Km long in the district.

Available data from frame surveys indicate increasing fishing pressure as demonstrated by the fact that the number of fishermen rose from 512 in the year 2000 (Frame Survey 2000) to 702 in 2002 (Frame Survey 2002) representing an increase of about 37% in Nyando District. However, the number of fishers has declined to 472 in 2004 corresponding to sharp decline of the fish catch. The number of boats in the same period increased from 185 in 2000 to 235 in 2002 representing an increase of about 27%. Then, the number of boats has declined from the 235 to 209 as was the case of the number of fishers.

The records for the 2002 Frame Survey show that 235 fishing crafts were enumerated as mentioned above and operated in Nyando. Out of these 235 fishing crafts 79 crafts, accounting for about 34%, were using sails as means of propulsion, and none had any engine for propulsion. During Frame Survey 2004 the fishing crafts enumerated were 209, out of which 66 (32%) were using sail and none had any engine for propulsion. This is an indication that about 66 - 68% of the boats in Nyando District operate in shallow waters, which are mainly gazetted fish breeding and nursery ground. This may have contributed to making their fishing operations unsustainable.

1) Fish Catch

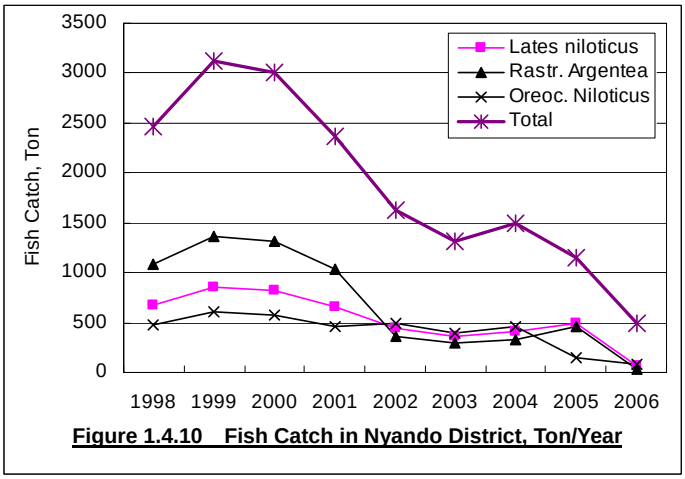


Figure 1.4.10 Fish Catch in Nyando District, Ton/Year

The data for Nyando District total fish production on annual basis from Lake Victoria fisheries is presented in Table 1.4.7. As shown in the table, major fish catch comes from three species of *Lates niloticus* (Nile perch), *Rastrineobola argentea* (Omena), and *Oreochromis niloticus* (Nile tilapia), which trends are depicted in Figure 1.4.10. Table 1.4.7 also shows the fish catch per population of Nyando, which ranges between 4 and 10 Kg except for the last two years. Though not all the fish catch is consumed by Nyando population, the figure is quite similar to those of meat consumption which is around 5 Kg per annum. One may say, as a whole, Nyando population depends on both meat and fish almost equally in terms of protein intake.

The table and the figure indicate a great concern, which is the general declining trend in production

between 1999 and 2003 and also the last two years of 2005 and 2006. Especially for the last year 2006, the fish catch is almost devastating. As per long-term trend in Lake Victoria, the catch started remarkably increasing since early 1980s with the thrive of Nile perch and once reached its peak in 1990 as shown in Figure 1.4.11. Then, the catch had remained in between 150,000 and 200,000 tons per annum up until year 2000. But after year 2000, it has been in sharp declining trend although there is possibility of recovering since year 2004.

Table 1.4.7 Trend of Fish Catch by Species in Nyando District, Metric Ton

Species	1998	1999	2000	2001	2002	2003	2004	2005	2006	Remarks
Lates niloticus	680	857	825	650	451	363	414	494	73	Nile perch
Rastr. Argentea	1,087	1,370	1,319	1,039	364	293	334	462	28	Omena
Oreoc. Niloticus	478	603	580	457	495	399	455	147	85	Nile tilapia
Clarias gariepinus	78	99	95	75	94	76	87	6	89	
Protopterus aethio.	125	157	151	119	93	75	86	13	70	
Haplochromis spp.	9	12	11	9	69	56	64	17	-	
Mormyrus kan.	0	0	0	0	0	0	0	-	-	
Bagrus spp.	0	0	0	0	0	0	0	0.3	-	
Barbus spp.	0	0	0	0	0	0	0	-	-	
Schilbe	3	4	4	3	25	20	23	-	73	
Synodontis	2	3	3	2	32	26	30	-	36	
Labeo spp.	0	0	0	0	0	0	0	-	22	
Alestes	9	12	11	9	5	4	5	-	-	
Others	0	0	0	0	0	0	0	5	23	
Total, ton	2,473	3,116	3,000	2,363	1,628	1,312	1,496	1,145	498	
Population	282,910	299,930	316,950	325,128	341,375	349,419	357,393	357,393	364,972	
Production/Head, kg	8.7	10.4	9.5	7.3	4.8	3.8	4.2	3.2	1.4	

Source: Fisheries Management Component Frame Survey Data 2000, 2002 and 2004, 2006

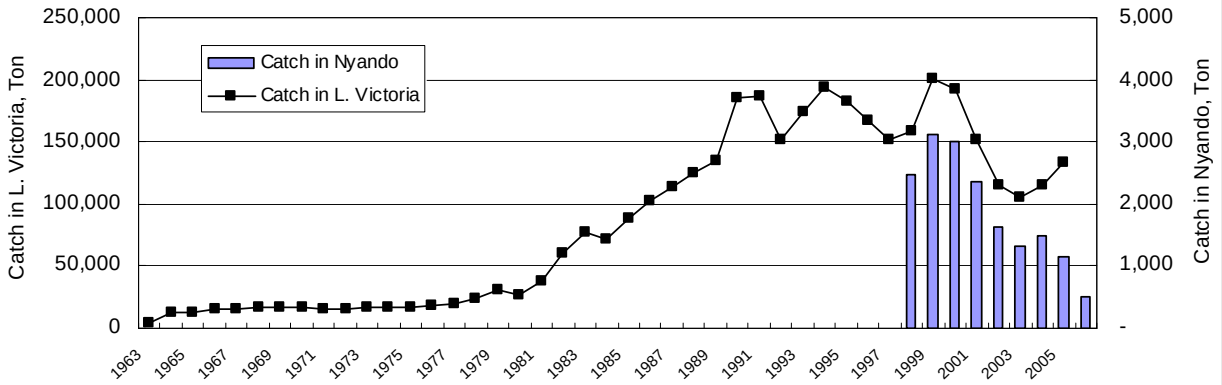


Figure 1.4.11 Long Term Trend of Fish Catch in L. Victoria compared to Fish Catch in Nyando District

The decline is a great concern. The reasons of the decline are believed that; 1) invasion by water hyacinth, 2) recession of the Lake water, and 3) strict monitoring and control in beach, etc. Lake water level has been dropping since year 1998 to date with some fluctuations. The water level has dropped by nearly about 2 meters since 1998[3], badly affecting the fish breeding beds. Also, introduction of strict monitoring, control and surveillance (MCS) in the regular field operations has provided the necessary motivation to the field fisheries personnel and awareness to the general public on the important initiatives on fisheries conservation and management measures. The decline could be partly due to the strict enforcement of the regulations, which came into effect in 2001.

2) Income Generated from Fisheries

The income from fishing forms a bulk of income in the district. The trend of the value of fish

[3] The Study on Integrated Flood Management for Nyando River Basis, Progress Report, Nov. 2006, JICA

landings up to 2004 is given in Figure 1.4.12 with the prevalent average fish price in the respective year. The trend of the value of fish landing has not declined at least up to 2004 unlike the case of the fish catch in weight. This is because low fish production created fish price hike as shown by the solid line in the Figure 1.4.12. When the fish catch peaked in 1999, average fish price was Ksh 26 per Kg while in year 2003 when the fish catch declined to 42% only (from 3,116 ton to 1,312 ton) the price doubled up to Ksh 56 per Kg.

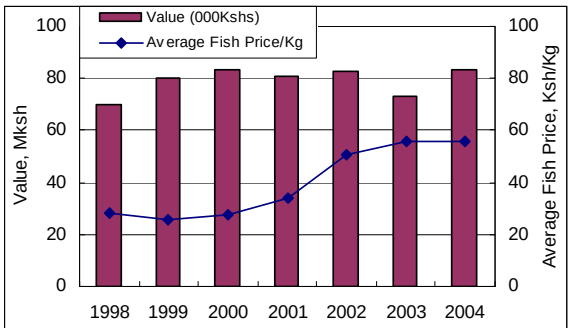


Figure 1.4.12 Income and Fish Price

Considering the income data from fishing provided in Table 1.4.8 the average income of fishers in Nyando District is about Ksh 79 Million annually. This translates to an average income of Ksh 167,305 fisher/year on the basis that the documented number of fishers is 472 in the district (Fisheries Frame Survey 2004). With the number of boats which is 209 in 2004, this is translated to Ksh 377,990 boat/year. This income however does not necessarily go to a fisherman because the fishing is practiced by a group of around four, some of whom are not registered with the Fisheries Department. The profit is firstly divided between the boat owner and the fishermen on half-half basis, and the half is further divided amongst the member fishermen.

Table 1.4.8 Value of Fish Landings in Nyando District in 1998 - 2004

Years of Business	1,998	1,999	2,000	2001	2002	2003	2004	Remarks
Value (000Kshs)	69,677	79,974	83,018	80,620	82,663	73,281	83,540	Ave. Mks 79
Average Fish Price Ksh/Kg	28.2	25.7	27.7	34.1	50.8	55.9	55.9	

Source: Nyando District Fisheries Office, Kenya

4) Fish Processing and Marketing

Fish processing is not a major activity in Nyando District except for small scale traditional sun drying of Omena. Most of the fish landed in the district are either consumed or sold as fresh fish products. There are no industries with activities that directly relate to the fisheries sector in the district. However, there are millers in Ahero Town that produce animal feeds, particularly growing mash for poultry, which use “Omena” as one of the ingredients for protein source. Much of the “Omena” are, however, supplied from Migori and Suba Districts though precise data is not available.

The fishery around Lake Victoria has over the years developed into lucrative commercial enterprises catering for needs of local and international export markets for fish and fishery products for human consumption. In general, fish marketing process begins at the landing site. Depending on the destination, the trading of fish and fishery product follows two distinct marketing channels namely fish for human consumption and for industrial use, particularly animal feed manufacture industry. The marketing of fish for human consumption passes through local and export market channels.

- The local market channel involves fishers at the beach, who sell their catch to middlemen and traditional fish processors, who buy fish to process through drying or smoking and or a combination of both processes. In the local market channel, the players mainly deal in tilapia and “Omena” as well as Nile perch by-products for those who get access to the fish processing factories.

- The export fish marketing channel involves fish buying agents. The agents buy Nile perch from fishers at the landing sites and sell to fish processing establishments, who process the fish mainly for export market. The Nile perch products exported to various destinations include fresh chilled fillets, frozen fillets and frozen headed and gilled (H&G). This channel is currently not in

common practice in Nyando District since no landed fish at the district is destined for export.

The weaknesses in fish marketing have generally been made worse due to lack of local fish marketing institutions. Failure of fishermen co-operative societies to perform their roles in marketing has been a serious impediment. Efforts to strengthen the co-operative societies have not yielded positive results. Currently the gap has been bridged by middlemen and agents, who are often accused of economic exploitation particularly taking advantage of poor infrastructure development at the landing sites, though it is also true if no agent which buys the fish for processing, most of the fishers may end in just home consumption or selling in local market fetching a throw away price.

1.4.3 Infrastructure

This section describes infrastructure situation in the district, composed of 1) water supply and sanitation, 2) irrigation schemes, 3) road network, 4) power supply and telephones.

1) Water Supply and Sanitation

The government has initiated water sector reforms through an Act of Parliament (Water Act 2002). The implementation of the reforms is in progress and the various institutional arrangements have been established. The Ministry of Water and Irrigation (MWI) is now in charge for policy regulation, sector coordination and financing. The water provision services has been vested on the water service boards, and Nyando District falls under the Lake Victoria South Water Service Board (LVWSB). The board is in the process of identifying water undertakers to run the various water schemes in the district. Any strategies for water provision in the district are developed in close consultation with and support of the LVWSB to ensure development of self sustaining projects with appropriate pricing and rationalized financial management.

The accessibility to safe water in the district is said to be between 40 and 45%[4], which is in a better situation as compared to average national rural area coverage of 32%. However, the accessibility has been declining in terms of quality and quantity due to diminishing investments to maintain and expand existing facilities as well as to invest in new water supply schemes. Available records in the district water office indicate there are 5 gazzeted water schemes and 11 private schemes. It is also recorded that there are over 600 shallow wells, 32 protected springs, 26 boreholes, 126 small earth dams/pans and over 1,000 roof catchments that are managed by individual communities, though some of them may no longer be functioning.

The LVWSB runs 5 gazetted water schemes with a monthly water production capacity of 26,000 m^3 (see Table 1.4.9). At a per capita water use of 50 l/day, these schemes are only able to serve about 17,000 people. These water schemes are stretched beyond their design capacity. The schemes require augmentation and improved management in order to enhance coverage and cover operational costs and raise funds for future expansion.

Table 1.4.9 Gazetted Water Schemes in Nyando District

Water Scheme	Production Capacity CUM per Month	Type of Connections
Kibigori, Miwani Div.	6,000	Flat rate connection @ Ksh 200 per connection
Muhoroni, Muhoroni Div.	5,000	67 metered, 74 flat rate
Koru Mnara, Muhoroni Div.	4,000	Flat rate connection
Tamu, Muhoroni Div.	2,000	Flat rate connection
Nyakach Water Supply, L/Nyakach Div.	Design capacity 6,500m^3/day Current production 9,000m^3/month	1,525 connections and only, 605 are active
Total Monthly production	26,000m^3	

Source, District water office, Nyando

Private organizations/ firms have developed a total of 11 water supply schemes. These organizations include; sugar factories, agrochemical industries and private institutions. The 11 private institutions running their own water schemes are: Chemilil Sugar company water scheme commissioned in 1965, Muhoroni Sugar Company water scheme commissioned in 1967, Koru Mission Water supply commissioned in 1980, Agro Chemical water scheme commissioned in 1984, Koru Bible School (Borehole drilled in 2001), Homa lime water scheme commissioned before independence, Nyabondo Mission Hospital, Nyangoma water scheme, Ahero water scheme, Awasi Borehole water scheme, and Boya water scheme.

A Typical Shallow Well in Nyando Division, Depth is about 17m

As per shallow well (hand dug or machine drilled), over 600 wells have been developed in Nyando District by a number of agencies, notably Dutch funded Rural Water Supply and Sanitation Development Programme (RWSSP), Kenya Water and Health Organisation (KWAHO), Aga Khan Foundation, United Nations Children's Fund (UNICEF), and faith led institutions. Apart from the faith based institutions, the organizations have phased out of the district. It should be noted that most of the wells developed in the 1980s and 1990s have broken down and are not in use. It is estimated that only 40 %, say about 240 – 250 wells, are still operational. The people have gone back to their traditional sources of water i.e. the rivers. This scenario can be attributed to the following causes:

- Salinity in ground water increases as one moves downstream towards the lake. People around Ahero market in fact prefer using water from Nyando River for cooking and drinking as opposed to shallow well water.
- Results of tests carried out in 1997 by the Ministry established that nearly 95% of the water points sampled were contaminated and requires regular chlorination to eliminate the faecal contamination. It can be noted that these wells have not contributed to safe water supply and subsequently the reduction of the prevalence of water borne diseases.
- The other challenge facing the water wells is the drying up and poor recharge of the wells. The water table seems to be dropping and most of the wells especially hand dug wells have shown up signs of drying.
- Some of the wells were equipped with the SWN pumps, which have no local spare parts dealership. Once the pumps break down, the defective parts cannot be replaced.

Latrine coverage in this district is relatively low at 23%. The lower part of the district, say Miwani , western part of Nyando and Lower Nyakach Divisions, experience frequent floods resulting to many latrines collapsing and contaminating water resources. This can explain the high prevalence of water borne disease in the area. The main reason given for low latrine coverage is poor soils, the black cotton soils, which make latrines collapse especially during the flood season. The other reason given for low toilet coverage is the cost of construction which is too high because special materials have to be used and the levels of poverty are high therefore many people cannot afford to construct quality

[4] Source: Interview to the District Water Office

latrines.

2) Irrigation Schemes

There are two large scale irrigation schemes in Kano Plain run by the National Irrigation Board (NIB), one of which is at Ahero and the other is at West Kano with command areas of 870 ha and 970 ha respectively (West Kano in fact falls in Kisumu District). Development of Ahero Irrigation Scheme intended to be a pilot scheme for paddy cultivation. NIB Ahero was constructed in 1966 and the first crop was planted in 1969. In 2000, NIB Ahero suspended its operation due to financial crisis and the breakdown of the motor-pump to lift Nyando river water into the main canal of the scheme. In February 2005, two units of pumps were donated by FAO through the food security programme. The scheme resumed in May 2005. The NIB as is the case with other NIB schemes used to provide services such as land preparation, seeds and fertilizer on credit and recovered the money after selling the produce the farmers delivered.

As has been intended, Ahero irrigation scheme worked as pilot. Farmers in the plain area have developed paddy fields utilizing river water and swamps. The Dutch government and the EEC supported the development of small-scale irrigation projects in the Kano Plain between 1978 and 1995. The financial and technical support were given to the two projects namely: The Smallscale Irrigation Development Programme (SSIDP) and the Smallholder Rice Rehabilitation Programme, enabling the development of group based irrigation schemes and a big smallholder South West Kano Irrigation Project with an irrigation command area of over 200 acres (80ha). Since then, there has been no substantial funding to the district to support development of irrigation infrastructure.

The South West Kano Irrigation Scheme diverts Nyando River water by a headworks. Due to separation of Nyando District from Kisumu District, most of the South West Kano is now located in Kisumu side. There are 30 sub-schemes (tertiary level) under the South West Kano and six schemes out of them are located in Nyando District such as Arombo, Alara, Nyabondo, Siany CC1, Giko, Yweyo. Including the six sub-schemes, there are 19 paddy irrigation schemes identified in Miwani, Nyando and Lower Nyakach Divisions. Table 1.4.10 below shows the current status of the irrigation schemes in Nyando District.

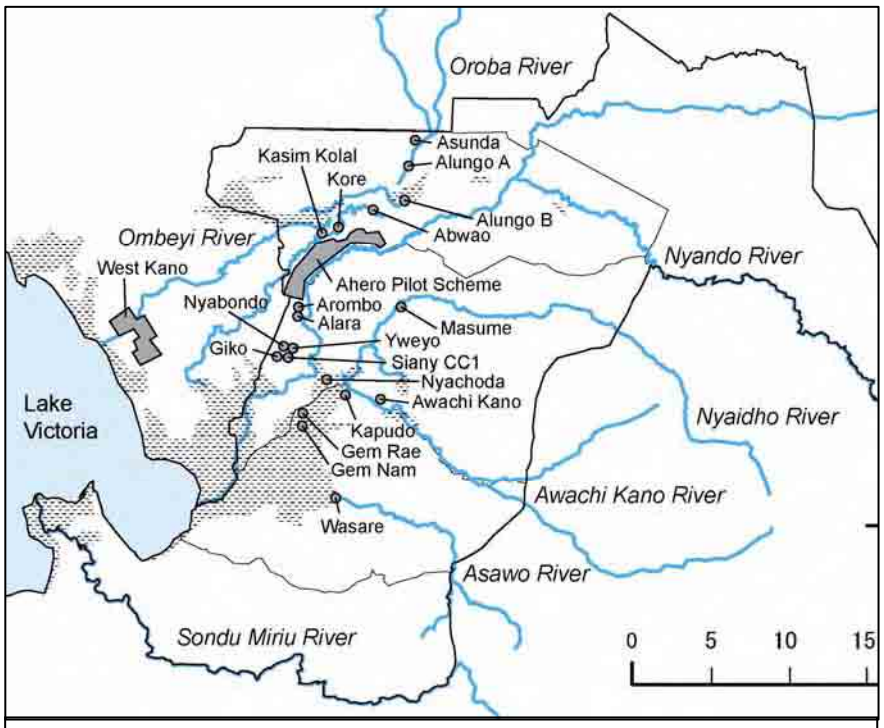


Figure 1.4.13 Location of the Irrigation Schemes in Nyando District

Table 1.4.10 Smallholder Irrigation Schemes in Nyando District

Nr	Scheme	Division	Irrigable Area (ha)	Area Under Irrigation (ha)	No. of Farmers	Canal Status	Drain Station
1	Gem Nam	L/Nyakach	200	50	150	Poor	Poor
2	Kopudo	L/Nyakach	50	-	120	Fair	Poor
3	Wasare	L/Nyakach	1,000	400	1,020	Fair	Poor
4	Gem Rae	L/Nyakach	90	90	400	Fair	Poor
5	Nyachoda	Nyando	55	50	75	Poor	Poor
6	Arombo	Nyando	22	22	95	Good	Fair
7	Alara	Nyando	40	36	200	Good	Poor
8	Nyabondo	Nyando	27	21	120	Poor	Poor
9	Siany CCI	Nyando	33	33	120	Poor	Poor
10	Giko	Nyando	49	30	210	Poor	Poor
11	Yweyo	Nyando	15	10	50	Good	Fair
12	Awach Kano	Nyando	200	70	280	Good	Fair
13	Masune	Nyando	540	10	450	Poor	Poor
14	Asunda	Miwani	23	23	45	Fair	Fair
15	Alungo A	Miwani	40	35	80	Fair	Poor
16	Alungo B	Miwani	100	70	250	Fair	Poor
17	Abwao	Miwani	45	35	100	Poor	Poor
18	Kore	Miwani	200	104	300	Fair	Poor
19	Kasiru Kolal	Miwani	100	80	200	Fair	Poor
Total			2,829	1,169	4,265		

Source: District Irrigation Office, 2004
Note: Shaded irrigation schemes are sub schemes of the South West Kano Irrigation Schema, which are in the Nyando side.

3) Road Network

The district has a total road network of 1282.4 Km. The classification of the road network according to the surface type is given in Table 1.4.11. Most of the gravel road network has been constructed in the sugar growing zones. The gravel road network within the sugar belt has a total length of 650 Km out of 1,011 Km.

Table 1.4.11 Road Network in Nyando District

Surface Type	Length Km
Bitumen	155.6 (12%)
Premix	30.6 (2%)
Gravel	1,011.8 (79%)
Earth	15.0 (1%)
Total	1282.4 (100%)

Source: GoK/ SIDA Roads 2000 Report

The surface dressed roads are in fair operating conditions. The Road A1 (Ahero-Kisii) is in fair condition and requires minor reconstruction. Katito – Kendu Bay (C19) has now been asphalt-paved as of March 2007. The other roads including Ahero – Awasi (B1) Miwani – Kericho (C34), Awasi-Muhoroni (C35) and Awasi- Nandi (C37) are potholed and require repairs. Most

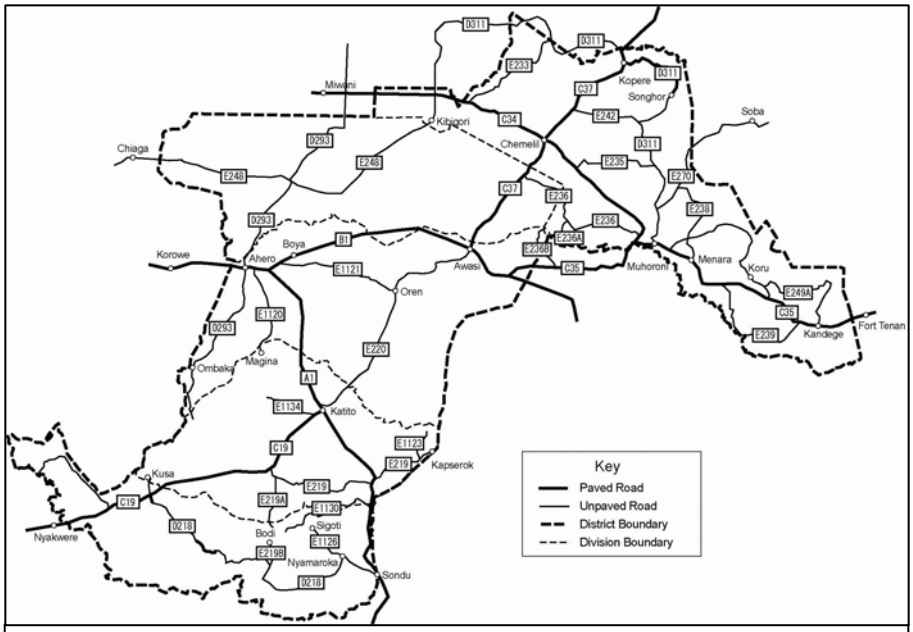


Figure 1.4.14 Road Network in Nyando District

of the gravel / earth roads are only motorable during the dry period. During the rainy season, the roads become impassable in many parts. The roads are cutoff by and destroyed by floods in lower parts of the district such as Nyando, Miwani and Lower Nyakach Divisions during the long rainy season. Vehicle movements to the hinterlands is usually suspended. This has negatively impacted on the delivery of services in the district especially the transportation and movement of agricultural goods. Most of these roads need upgrading to well-graveled weather roads.

With respect to road maintenance, the District Roads Committee (DRC) is responsible for the maintenance of roads classes D, E, special and unclassified (Rural and Urban) roads within the district. The committee receives road maintenance funds from the fuel levy fund, which is the main source of funding in the district for road maintenance. The fuel levy fund has two sources of revenue including all monies accruing from fuel levy and transit toll on heavy goods vehicles. The district has received amounts of Ksh 14 million, 24.5 million, and 28 million, 23.8 million for the last four yeas from 2002/03 to 2005/06 respectively. However, this allocation has not been well maintaining the roads in the district.

Classification of Road:
A: International trunk roads
B: National trunk roads
C: Primary roads
D: Secondary roads
E: Minor roads
F: Special Purpose Roads
RAR: Rural access roads
URA: Unclassified rural access roads
URP: Unclassified rural primary roads
S: Sugar Roads
G: Government Roads

4) Power Supply and Telephones

The power distribution covers all the key market centers in the district, which are 11 in number. The only key center without power supply is the Pap Onditi center, where the district hospital is located. There are 1,801 households with electricity connections as of 2005. The existing power line has a network of 68 Km with 33,000 Volts and 55 Km network with 11,000 volts. Secondary transmission (33KW) step down substations include Miwani, Chemilil and Muhoroni. Various public and private institutions are also served with the power supply. 13 primary schools and 13 secondary schools have power supply. Currently, the Sondu hydro power station is under construction. This scheme will provide additional power supply into the national grid and this will contribute to improved power access in the area.

Nyando District is poorly served with landline telephone communication. The Muhoroni telephone exchange, which serves the Nyando District H/Q, is very unreliable. The number of households with telephone connections is 232 as of 2005. The number of both public and private organizations with telephone connections is around 329 lines. The district has a total of 73 telephone booths but those in working conditions is reported at less than 50. The mobile telephone coverage in the district stands at 30%. Both Safaricom and Celtel provide telephone services in the district. The major hindrance in mobile telephone is the high cost of making calls especially for the rural population who are poor.

1.4.4 Health

This section gives an overview of the current status of the health sector in Nyando District. The table gives a summary of health indicators in the district. The infant mortality rate is 116 per 1,000 live births while under-five mortality rate is 212/1,000 and maternal mortality rate is 0.05 per 100 births. Life expectancy is 38 years for male and 43 years for female and this has been affected by the relatively high HIV/AIDS prevalence rate, which is now around 20% for pregnant women. These health indicators show the poor status

Table 1.4.12 Health Indicators

Crude Birth rate	44.1/1,000
Crude Death rate	22.4/1,000
Infant mortality rate	116.1/1,000
Under five mortality rate	212/1,000
Population growth rate	3.4%
Fertility rate	5.7
HIV/AIDS prevalence	18.6%
Life expectancy	38 (M), 43 (F)
Access to clean water	42%
Latrine coverage	23%

Source: District Health Plan 2005, & 1999 Census

of health in the district.

As per facilities, the district has 64 health facilities and the private sector is the main health care provider with a total of 36 health care facilities. The district has four hospitals with the mission being the biggest sponsor. The GOK hospital is located at Pap-onditi where electricity is not available. Private clinics form majority of these facilities with the government running the highest number of dispensaries. As for bed, the district health facilities have a total of 709 hospital beds and more than 50% of these are in nursing homes. Government facilities have the least number of beds, 84, while all the private facilities have a total of 404 beds. The government officials often raise complaints on shortage of hospital beds in their facilities. It is however important to note that some ten government dispensaries have beds.

Table 1.4.13 Distribution of Health Facilities, Nyando District

Description	Provider			Total
	GOK	Mission	Private	
Hospital	1	3	0	**4**
Sub-district hospital	1	0	0	**1**
Health centre with beds	3	1	1	**5**
Health center without beds	3	1	0	**4**
Dispensary	13	1	2	**16**
Nursing/Maternity Home	0	0	5	**5**
Clinic	0	0	22	**22**
Hospital with Nursing schools	0	0	1	**1**
Private Pharmacies	0	0	5	**5**
Total	**22**	**6**	**36**	**64**

Source: District Health Plan

Table 1.4.14 lists the top ten diseases in the district, which are also depicted in Figure 1.4.15. These morbidity figures are collected from both the private and government health facilities in the district. The disease burden in order of priority includes malaria, upper respiratory tract infections (URTIs), diarrhea diseases, skin infections, intestinal worms, rheumatism, pneumonia, eye infections, and ear infections. Majority of the diseases in this district are preventable either through immunization, observing basic hygiene or through environmental manipulation. Also, noted is that the other disease burden in the district is mainly from waterborne diseases, which include diarrhea diseases, worms and skin infections. HIV/AIDS opportunistic infections largely contribute to the burden of disease in the district and these include TB, pneumonia, URTIs and skin infections.

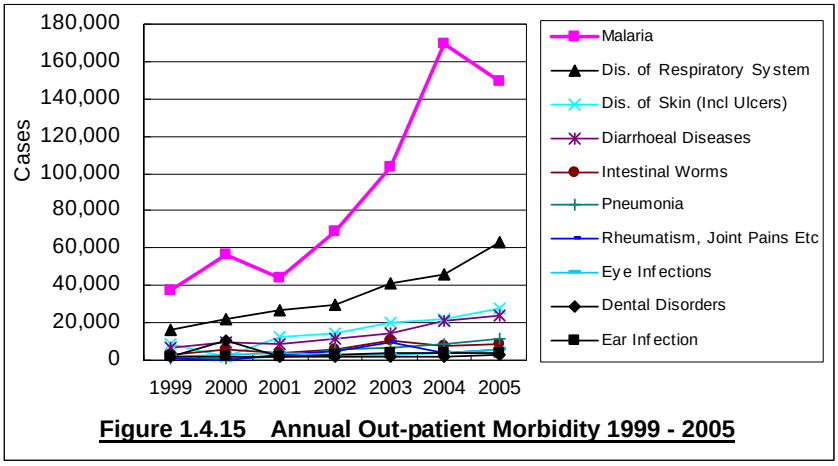


Figure 1.4.15 Annual Out-patient Morbidity 1999 - 2005

Malaria is the top disease in the district and its cases have continued to rise from 37,139 in 1999 cases to 169,337 in 2004. This steady increase in malaria cases, though it started declining in 2005, is attributed to several reasons. For example, malaria drugs are now free to the patients at government health facilities so that the people suffering from malaria tend to appear. The other reason is increased cases of drug resistance; mosquitoes have changed their behaviour and are now found in high altitude where they could not survive before. Frequent flooding leading to stagnant water in the District creates conducive environment for mosquito breeding. The other factor contributing to increased cases is the slow down in mosquito environmental control activities. These activities used to be carried out on a regular basis by the public technicians who were retrenched during the public service reforms and very few were left. The other factor is banning of the use of DDT (in 1997) because of its negative effect on the environment. DDT had once succeeded in controlling malaria.

Table 1.4.14 Annual Out-patient Morbidity in Nyando

Diseases	1999	2000	2001	2002	2003	2004	2005	Total
Malaria	37,139	56,711	43,963	69,081	103,400	169,337	149,128	628,759
Dis. of Respiratory System	16,341	22,407	26,369	29,522	40,782	45,904	63,372	244,697
Dis. of Skin (Incl Ulcers)	8,445	1,501	12,093	14,333	20,144	22,281	27,424	106,221
Diarrhoeal Diseases	6,655	9,745	8,369	11,121	13,962	21,200	23,572	94,624
Intestinal Worms	3,074	5,696	4,307	5,344	10,428	7,327	9,001	45,177
Pneumonia	1,024	1,403	1,652	5,370	6,452	8,313	11,340	35,554
Rheumatism, Joint Pains Etc	1,083	83	2,813	4,444	9,983	4,161	5,788	28,355
Eye Infections	2,227	2,771	4,145	2,654	3,080	4,028	5,934	24,839
Dental Disorders	1,544	10,734	1,493	1,676	1,480	1,502	2,500	20,929
Ear Infection	1,817	1,591	2,105	2,784	3,463	3,537	4,238	19,535
Total	79,349	112,642	107,309	146,329	213,174	287,590	302,297	1,248,690

Source: District Health Information System.

HIV/AIDS is one of the major health problems in this district. It is now estimated at about 18 percent in pregnant women as of 2006, and it causes a lot of infectious diseases. Several interventions have been put in place to address the HIV/AIDS pandemic. These interventions have prevention, care and support components and they include Voluntary Counseling and Testing (VCT), Prevention of Mother to Child Transmissions (PMTCT), patient support center that provides Anti-retroviral Therapy, Home Based Care and awareness creation and prevention. The government through the National AIDS Control Council has also channeled funds through the Constituency AIDS committee to support community initiatives that address HIV prevention and care to mitigate the effects of the epidemic in the community.

The Ministry of Health through the Medical officer and in partnership with the other players in the health service provision is involved in health promotion activities. The other players seem to address the top two diseases in the district. The interventions that these partners are involved is under either malaria prevention and control or HIV/AIDS care and support activities. SIDA is now supporting the Rural Integrated Health Services, which is part of the on-going Health Sector Reforms. The project is currently implemented in seven districts in the Country and in Nyanza it is implemented in Kuria, Nyando and Siaya Districts. The programme was started in July 2001 and it was scheduled to end in December 2005. They are currently working on a three-year extension.

Table 1.4.15 Partners Working in Health Sector

Partner	Intervention
Center for Disease Control	Capacity building, equipment and furniture
AMREF	Sanitation, HIV/AIDS
World Vision	HIV/AIDS Prevention and care
Mild May International	Home Based care
Our Lady Perpetual Support	Home Based Care
Catholic church	Health care provision
SIDA	Health Care Reforms
ADRA	Youth and HIV/AIDS
UNICEF	ITN distribution and computer donation
PSI	ITN social marketing

Source: District Health Information Records

1.4.5 Education

Early childhood development (ECD) takes place between birth and age six, the official age of entry into primary school. Primary school course is 8 years long, followed by 4 years of secondary school and 4 years of basic university degree course. Progression from primary to secondary school and from secondary to university is through selection on the basis of performance in the national examinations for the KCPE and KCSE. The selective manner of progression between levels is an

indication that not all children who complete the primary course have the opportunity to pursue further education. For instance, according to the Ministry of Education statistics, only an average of 45% of primary school pupils who take the KCPE examination are selected for entry into secondary school.

The District is divided into six educational Divisions with the District headquarters based at Awasi. The divisions are, Nyando, Muhoroni, Lower Nyakach, Upper Nyakach, West Nyakach and Miwani. There are fifteen educational zones that cater for 403 Early Childhood Centers (ECD); 286 public and 9 privately owned primary schools; 60 public secondary schools, 9 of which were started in year 2005; two privately owned secondary schools; and 9 tertiary institutions, two of which are public while seven are privately owned.

1) Pre-Primary School

Most of the Early Childhood Development centers are meant to provide secure physical and psychosocial setting for children and develop their knowledge, self-confidence and free expression and generally prepare them for entry into the primary school system. Early childhood education is not included, as part of the free primary education package started in 2003 and parents have to pay fees for their children to attend these centers. Although the fee is minimal, ranging from Ksh 60 to Ksh 100 per month, many of the parents are not able to pay the fees resulting in low/non payment of salaries to teachers. The centers are generally poorly equipped and in most cases are not supervised. Standards are low as most of the teachers are untrained and poorly paid (salaries ranging from Ksh 500 to Ksh 2000 per month from filed observations in Nyando), thus primary schools receive inadequately prepared children in standard one and as a result the children loose critical years of their formation.

Table 1.4.16 Pre-Primary Data as at February 2004

Division	No of Schools	Enrolment			Teachers Establishment						Grand Total
					Trained[5]			Untrained[6]			
		B	G	Total	M	F	Total	M	F	Total	
Nyando	83	1,992	1,943	3,935	2	51	53	1	79	80	133
Muhoroni	78	2,004	2,005	4,009	-	78	78	1	58	59	137
Lower Nyakach	77	1,923	11,997	3,720	-	66	66	2	54	56	122
Upper Nyakach	72	1,592	1,542	3,134	2	31	33	3	67	70	103
West Nyakach	31	773	746	1,519	-	30	30	-	26	26	56
Miwani	62	1,496	1,509	3,005	1	30	31	3	45	48	79
Total	**403**	**9,780**	**9,542**	**19,322**	**5**	**286**	**291**	**10**	**329**	**339**	**630**

Source: Education office, Nyando District

Enrollment in the ECD centers has risen steadily from a total of 12,953 in 2002 to 19,322 in 2004, and then remained almost same for the last two years of 2005 and 2006. The increase in enrollment was attributed to the free primary education started in 2003. Boys and girls are more or less enrolled in the centers on an equal basis (Figure 1.4.16 and Table 1.4.16). Before entry into class one, it is a requirement that the child should have had some schooling at the ECD centers. However, this requirement is not compulsory and some children manage to get into class one without attending the ECD centers.

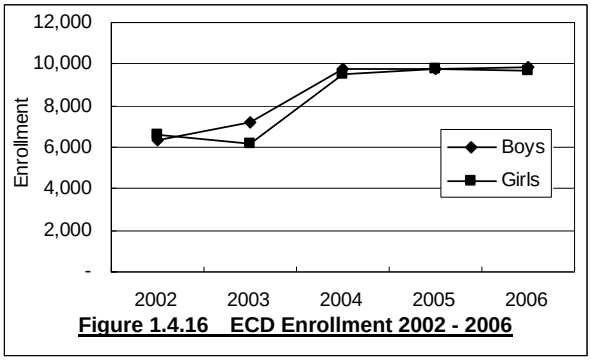
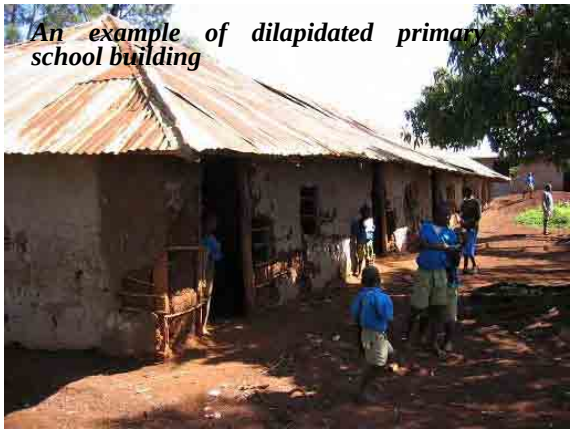


Figure 1.4.16 ECD Enrollment 2002 - 2006

[5] Trained teacher-people who have undergone a teacher-training course in a recognized teacher training college
[6] Untrained teacher-people who are employed as teachers but have not undergone any teacher-training course regardless of any other qualifications they may hold.

2) Primary and Secondary School Settings

Two types of schools are identified; private and public schools. There are 295 primary schools composed of 286 public and 9 private, and 79 secondary schools composed of 73 public and 6 private in Nyando District. Many of the private schools are commercial ventures, high cost and thus inaccessible to low-income parents. The public primary schools are characterized by poor school infrastructure. Due to the free universal primary education and the misconception that the government is supposed to provide all facilities in primary schools, community members in some cases do not participate effectively in the development of school infrastructure that includes fund raising for the construction of classrooms, toilets and provision of water for drinking and washing hands. Thus most of the public primary schools in the district are poorly equipped, though CDF is now contributing to renovating the classroom facilities in many places (CDF has been providing the top share to the education sector).



An example of dilapidated primary school building

Most of the public secondary schools in the district are day schools and many of them are clan based while some are established on political grounds. Clannism and bringing politics into education have resulted in many secondary schools being established but with inadequate facilities and structures. These cause regional imbalances e.g. in 2007, Nyakach Constituency has 51 public secondary schools as opposed to 12 and 15in Nyando and Muhoroni constituencies. During 2005, Muhoroni initiated 8 new secondary schools. The high number of schools has negative repercussions on allocation of government resources to the schools and staffing levels. Resources are allocated equally and teachers posted to registered schools regardless of the enrolment levels. This contributes to under staffing in schools with high enrolment rates.

Table 1.4.17 Number and Location of Primary and Secondary Schools as at February 2007

Area	Zone	Primary Schools		Total	Secondary Schools		Total
		Public	Private		Public	Private	
Nyando	Ahero	29	2	31	9	2	11
	Awasi	23	-	23	3	-	3
Muhoroni	Chemilil	20	2	22	3	2	5
	Menara	21	3	24	5	-	5
Lower Nyakach	Katito	22	1	23	7	-	7
	Lisana	18	-	18	6	-	6
	Pap Onditi	19	-	19	3	1	4
Upper Nyakach	Nyabondo	18	-	18	7	-	7
	Oboch	22	-	22	7	-	7
	Sigoti	12	-	12	6	-	6
West Nyakach	Bolo	13	-	13	4	1	5
	Kondigo	15	-	15	6	-	6
Miwani	Nyasogo	17	-	17	3	-	3
	Nyan'goma	18	1	19	2	-	2
	Ombeyi	19	-	19	2	-	2
Total	**15**	**286**	**9**	**295**	**73**	**6**	**79**

Source: Education office, Nyando District.

3) Primary Schools – Current Situation and Trends

The Government of Kenya is committed to providing free universal primary education and parents in Nyando District in turn make a deliberate effort to ensure that both girls and boys are enrolled in school. Since the inception of Free Primary Education (FPE), the enrolment of pupils in primary school has increased by about 20% (see Figure 1.4.17). The difference in enrolment between boys and girls is not big. However, the trend shows a slightly higher enrolment for boys throughout the six-year period shown in Figure 1.4.17.

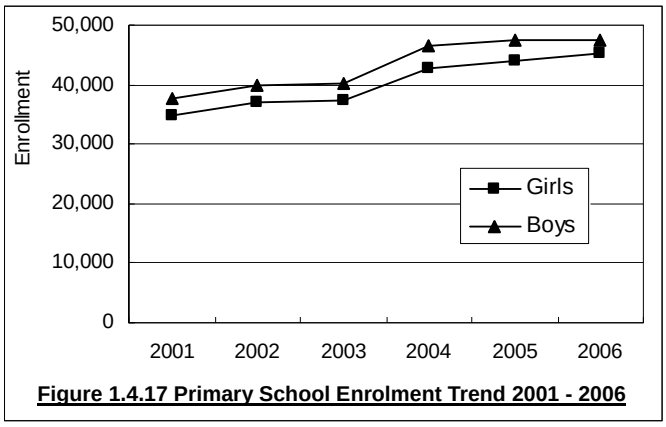


Figure 1.4.17 Primary School Enrolment Trend 2001 - 2006

However, as the years progress, both girls and boys start to drop out of the school system (see Figure 1.4.18). This is attributed to the high poverty levels prevailing in the district. Pupils drop out of school to join the casual labour market. This is mostly in cases where the children are orphaned and the older children drop out of school to take care of their younger siblings. The care of younger siblings is a chore that keeps girls away from attending school. School enrolment of girls is adversely affected by the presence of children under 3 years of age in the household. Another reason for the early school drop out rate for girls is early marriage and pregnancies.

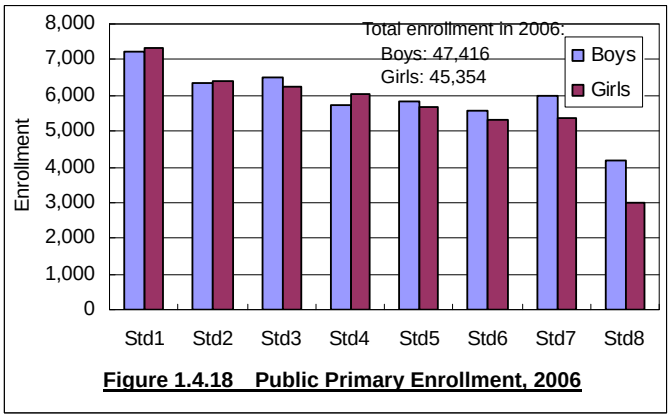


Figure 1.4.18 Public Primary Enrollment, 2006

Most primary schools are under staffed as a result of high mortality rates among the teaching staff, not enough recruitment against the increasing enrollment due to the free primary education, etc. The Government started recruiting teachers as stated in the Session Paper No.1 of 2005 and KESEP, however teacher to pupil ratio is about 1:60 as of February 2005 in primary schools. There is a short fall in staffing of about 800 teachers in the primary schools of the Nyando District as of 2005. This forces some classes especially the lower primary to be conducted in shifts.

Table 1.4.18 and 1.4.19 below are used to work out the gross and net enrolment rates for the year 2004. Gross enrolment ratio for the year 2004 for boys is 130% and for girls it was 111%. This indicates that there are overage pupils in primary schools; this in turn is attributed to increased enrolment due to free primary education. Net enrolment ratios as of the year 2004 are Boys-117% and Girls-104%, for which the figures indicate an increased enrolment in schools above the district projected school age child population. This may be: 1) a slight difference in the ratios because the primary school age cohorts in the census report is between 5-14 years while the one for the Ministry of Education is between 6-13 years, 2) migration into the district, and 3) increased number of boarding schools.

Table 1.4.18 Population Projections by Age Cohorts (2004)

Age	Boys	Girls	Total
5-9	22,506	24,899	47,405
10-14	13,344	13,513	26,857
Total	**35,850**	**38,412**	**74,262**

Source: Population census 1999

Table 1.4.19 Primary School Gross Enrolment for the Year 2004

Type	Boys		Girls		Total
	6-13 years	Above 13 years	6-13 years	Above 13 years	
Public	40,929	4,554	38,989	2,735	87,207
Private	1,079	88	982	78	2,227
Total	42,008	4,642	39,971	2,813	**89,434**[7]
Net enrollment	117%		104%		**110%**
Gross enrollment	130%		111%		

Source: Provincial Education Office, Kisumu

As per Kenyan Certificate for Primary Education (KCPE), the district has been improving in terms of mean score since 2001 though the latest socre in 2006 went down a bit as can be seen in Figure 1.4.19, and was ranked 1st in the province for the years 2003 - 2005. Table 1.4.20 shows the candidates for the KCPE. There were fewer girl candidates than boys and although both boys and girls experienced an increase in percentage pass in the three years, the girls performed more poorly than the boys. The wastage is also higher for girls than for boys. Although there was a reduction in percentage wastage for both boys and girls the wastage of girls is still on the higher side. This means that girls have a lower rate of moving from primary to secondary school

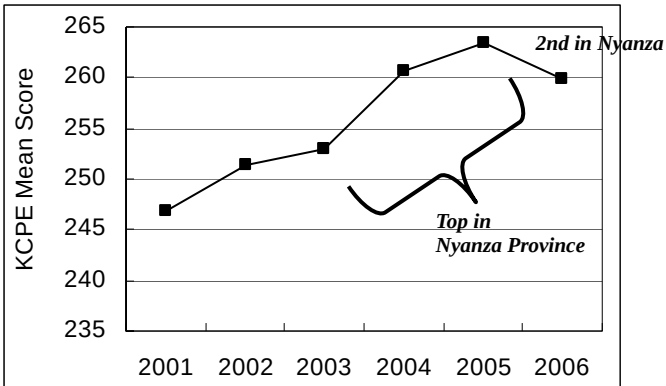


Figure 1.4.19 Trend in District KCPE Mean Result

Table 1.4.20 The Percentage Passes for KCPE

Sex	Boys			Girls			Total		
Year	2003	2004	2005	2003	2004	2005	2003	2004	2005
Candidates for exams range	3,539	3,966	3,887	2,672	2,690	2,689	6,211	6,656	6,576
450 and above	00	01	00	00	00	00	00	01	00
400-449	51	43	34	09	09	08	60	52	42
350-399	265	311	289	65	57	78	330	368	367
300-349	753	906	1,024	291	385	414	1,044	1,291	1,438
250-299	1,132	1,325	1,294	778	883	958	1,910	2,208	2,252
Total Passes	2,201	2,586	2,641	1,143	1,334	1,458	3,344	3,920	4,079
%Pass	62.19	65.20	67.94	42.78	49.59	54.22	53.84	58.89	62.33
Wastage									
249 and below	1,338	1,380	1,246	1,529	1,356	1,231	2,867	2,736	2,477
% Wastage	37.81	34.80	32.06	57.22	50.41	45.78	46.16	41.11	37.67

Source: Education Office, Nyando District

4) Secondary Schools – Current Situation and Trends

Secondary schools are managed by Board of Governors (BOG) appointed by the Minister of Education Science and Technology. Some of the members who sit on the school Boards have low educational standards and integrity and are selected to sit on the Board because of clannism. This is especially so in community initiated schools. Such Board members do not fully understand their roles and some are easily manipulated by the head teachers, politicians and stronger members of the same BOG. The 'clan/son/daughter of the soil' culture, whereby only relatives are employed to run

[7] The gross enrolment of 89,434 pupils given by the Provincial office differ from the gross enrolment of 87,773 pupils given from the District Education Office because the data in this table is recorded in February and sent to the province while the one given by the District Education Office is recorded in November after many children have dropped out of school during the year.

the schools, is rampant and is a real stumbling block to the smooth running of the school and contributes to the under development of these schools and their poor performance in the national exanimations.

Since the inception of the free primary education, the secondary school enrolment has also increased by 3,590, which translate to 40% increase (see Figure 1.4.20). The increase can also be attributed to the bursary fund that has been set up for needy students who are not able to pay their own school fees. Contributing to this is also the Constituency Development Fund (CDF) allocated by the government to each constituency. In Nyando District where the politicians are much concerned about the educational standards of the area, a percentage of the fund goes towards paying school fees for needy students.

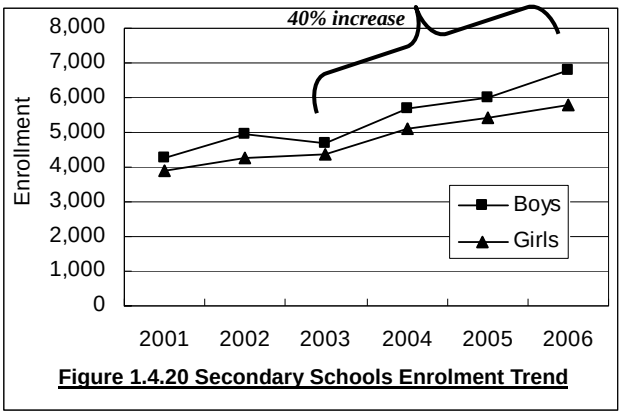


Figure 1.4.20 Secondary Schools Enrolment Trend

Tables 1.4.21 and 1.4.22 are ued to work out the secondary school gross and net enrolment ratios for the year 2004. Gross enrolment ratio for the year 2004 for boys was 48% and for girls it was 43%. Net enrolment ratio was as follows: Boys-30% and Girls- 31%. The gross as well as net enrolment ratios indicate that there is low transition rate from primary school to secondary school. Noted is that there could be a difference in the ratios because the secondary school age cohorts in the census report is between 15-19 years while the one for the Ministry of Education is between 14-17 years.

Table 1.4.21 Population Projections by Age Cohorts (2004)

Age	Boys	Girls	Total
15-19	11,370	11,865	**23,235**

Source: Population census 1999

Table 1.4.22 Secondary School Gross Enrolment for the Year 2004

Type	Boys		Girls		Total
	14-17 years	Above 17 years	14-17 years	Above 17 years	
Public	3,250	2,164	3,500	1,307	10,221
Private	190	88	172	120	570
Total	3,440	2,252	3,672	1,427	10,791[8]
Net enrollment	30%	-	31%	-	31%
Gross enrollment	48%		43%		46%

Source: Provincial Education Office, Kisumu

[8] The gross enrolment of 10,791 pupils in this table given by the Provincial office differ from the gross enrolment of 11,413 pupils from the District education office because the data in the table is recorded in February and sent to the province while the one given by the District is recorded in November after some children have enrolled in the schools during the year.

CHAPTER 2 DEVELOPMENT CHALLENGES AND OPPORTUNITIES

This chapter summarizes constraints and opportunities identified through the participatory workshops as well as the field survey of the Team. Development programmes are formulated based on them. The chapter describes the issues in order of 1) participatory situation analysis, 2) major development challenges, 3) major development opportunities, 4) trend of fund & disbursement mechanism, and 5) major donor funded programs and projects.

The major challenges in Nyando District include: flood occurrence, sugarcane monoculture, high prevalence of HIA / AIDS, orphans and vulnerable children, high children's mortality rate, proposal method and CBOs organized by supply-driven, and scarce domestic water. Whereas, the major opportunities are identified as: technical officers' deployment at divisional level, rice farming adaptable under inundation, active CBOs and lead local persons, proximity to Kisumu city, tree planting practices, and locally available resource persons.

2.1 Participatory Situation Analysis

2.1.1 Situation Analysis at District Level

1) Major Issues and Indices of Nyando District

In the two-day workshop at district level on 21-22 July 2005, the situation of Nyando District was analyzed by division. Major issues and indicators identified by the participants, who are representatives of all the departments, divisions, NGOs and CBOs, are (1) food security, (2) environmental degradation, (3) prevalence of HIV/AIDS, (4) floods, (5) access to safe water, (6) rainfall pattern, (7) livestock productivity, (8) sanitation, (9) road network, (10) orphans & other vulnerable groups, (11) literacy level, and (12) human disease prevalence as shown in Table 2.1.1. Then all the five divisions in the district were scored in a scale of 1 to 5 according to the indicators. Miwani and then Lower Nyakach Division have more problems, but on the other hand Muhoroni Division has much less problems as you can see from the pattern of the Table.2.1.1.

(1) Food security

Food security is lowest in Lower Nyakach Division (***1***) and highest in Muhoroni Division (***4***) and then Upper Nyakach Division (***3***). Mixed farming is the major characteristics of the district except Miwani Division, where sugarcane farming is dominant. Sugarcane farming is an important source of income in Nyando, Muhoroni Divisions too. Irrigated rice farming is active in Lower Nyakach, Miwani and Nyando Divisions, daily farming in Muhoroni and Upper Nyakach Divisions, indigenous livestock production in Lower Nyakach Division, and cotton in Upper Nyakach Division. Horticulture

Table 2.1.1 Scoring of Nyando District by Division

Areas	Nyando Division	Lower Nyakach Division	Miwani Division	Muhoroni Division	Upper Nyakach Division
(1) Food security	2	1	2	**4**	3
(2) Environmental degradation	3	1	3	3	3
(3) Prevalence of HIV/AIDS	3	1	1	3	2
(4) Floods	1	1	1	**5**	3
(5) Access to safe water	2	2	1	1	3
(6) Rainfall patterns	2	1	2	**4**	3
(7) Livestock productivity	3	2	3	**4**	3
(8) Sanitation	2	2	1	2	3
(9) Road network	3	2	1	3	2
(10) Orphans and other vulnerable	2	2	1	3	3
(11) Literacy level	3	3	2	3	**4**
(12) Human disease prevalence	3	3	1	3	3

is also important in all the divisions.

(2) Environmental degradation

Environmental degradation is also worst in Lower Nyakach Division (***1***) and the score is ***3*** for all the other divisions. Gully erosion is a serious issue all over the district except Muhoroni Division and it is very serious especially in Lower Nyakach Division. Charcoal burning is also a crosscutting issue except in Miwani Division. It is especially serious in Upper Nyakach and Muhoroni Divisions. Waste management and pollution are major environmental issues in Nyando Division, and river pollution is an issue in Miwani Division.

(3) Prevalence of HIV/AIDS

Prevalence of HIV/AIDS is most serious in Lower Nyakach and Miwani Divisions (***1***), then Upper Nyakachi Division (***2***). Major causes are urbanization, culture and beach influence in Lower Nyakach, poverty, culture and migrant labor in Miwani, and beach life style, culture and urbanization in Upper Nyalach.

(4) Floods

Nyando, Lower Nyakach and Miwani Divisions are the flood prone areas (***1***) because of land terrain, siltation, poor drainage, and poor vegetation cover / low tree cover.

(5) Access to safe water

Access to safe water is a serious problem in Miwani Division (***1***), and then in Nyando and Lower Nyakach Divisions (***2***). Poor maintenance of well, pollution, inadequate water harvesting facilities and unprotected water sources are mentioned as the causes.

(6) Rainfall patterns

Rainfall patterns are worst in Lower Nyakach Division (***1***) and then Nyando and Miwani Divisions (***2***). Intensity during April and unreliable second rainfall are the major reasons.

(7) Livestock productivity

Livestock productivity is good in Muhoroni Division (***4***), but not so good in Lower Nyakach Division (***2***). Improved dairy livestock is in Muhoroni and Upper Nyakach Divisions, large number of local poultry are in Nyando and Lower Nyakach Divisions. Miwani Division has better grazing land.

(8) Sanitation

Sanitation is worst in Miwani Division (***1***) because of lack of drainage system, poor waste management and poor soil type.

(9) Road network

Road network is also worst in Miwani Division (***1***) because of poor road network itself, poor soil type and poor maintenance due to collapse of sugar industry.

(10) Orphans & other vulnerable groups

The situation of orphans & other vulnerable groups is worst in Miwani Division (***1***) and then Lower Nyakach and Upper Nyakach Divisions (***2***). There are more total orphans (means do not have both parent), closed houses, more widows, unemployed youths in the area. Child labor and

child abuse are also issues in these divisions.

(11) Literacy level

Literacy level is lower in Miwani Division (***2***) due to fewer schools, collapse of sugar mill industry and child labor / abuse, and is highest in Upper Nyakach Division (***4***) due to church influence, more schools and people's attitude.

(12) Human disease prevalence

Human disease prevalence is highest in Miwani Division (***1***) and all the other divisions score ***3***. The causes are school dropouts and poor accessibility to medical facilities.

2) Opportunities and Development Directions of the Divisions in Nyando District

Opportunities and development directions of each and every division were also discussed in the district level workshop. Following are the summary of the discussions:

(1) Nyando Division

Proximity to large market (Kisumu), irrigated agriculture, cottage industries, human resource etc. are the opportunities of Nyando Division. Development direction could be improvement of irrigation, flood control, road network, water and sanitations, electrification etc.

(2) Lower Nyakach Division

Land, agriculture, sand harvesting, mat making, fishing etc. are the opportunities of Lower Nyakach Division. Development direction could be institutionalization and partnership for minimal use of resources, marketing, reafforestation etc.

(3) Miwani Division

Land, agriculture, livestock, brick making, pottery, forestry, wetland resources etc. are the opportunities of Miwani Division. Development direction could be development of health facilities, schools and roads, afforestation, capacity development, industrialization, irrigation development and flood control,

(4) Muhoroni Division

Opportunities of Muhoroni Division are industrial base, horticulture, livestock, quarry, forestry, cottage industry promotion, etc. Development direction could be improvement of efficiency and production, social amenity provision, afforestation, promotion of clean industrial technology and improved livestock production.

(5) Upper Nyakach Division

Opportunities of Upper Nyakach Division are eco-tourism, human resources, land, fishing, agriculture, quarries and cottage industry. Development direction could be promotion of tertiary education since their education is already somewhat high as compared to other divisions.

3) Problem Analysis of Nyando District

Table 2.1.1 shows the results of problem analysis of district level workshop at Nyando District. "Livelihood of people in Nyando District is not secure" was chosen as the core problem so that it can cover all the major problems identified during the workshop. Compared with other problem analyses at divisional and community levels, "1. People cannot get fuel easily" is distinctive.

Table 2.1.2 Results of Problem analysis at Nyando District

Core Problem	Direct Causes	Other Major Causes
Livelihood of people in Nyando District is not secure.	1. People cannot get **fuel** easily.	(1) People do not have enough trees for firewood. (2) People have no alternative sources for fuel.
	2. People cannot get enough **food** to eat.	(1) Post-harvest management is poor. (2) Food production is low.
	3. **Income** of people is low.	(1) Quality of the produce of cottage industry is low. (2) Agricultural activity is low. (3) Massive unemployment. (4) Lack of saving culture of resources e.g. money. (5) Exploitation by middlemen e.g. fishing industry. (6) High dependence rate at family / community level.
	4. High prevalence of **HIV/AIDS** in the area.	(1) People are practicing unprotected sex.
	5. Frequent / annual **floods** in the area.	(1) Run-off water from neighboring escarpment is large. (2) Land is flat. (3) Clay soils drains poorly. (4) Canals are blocked.
	6. People cannot get access to safe drinking **water**.	(1) Water management / maintenance is poor. (2) Income of people is low. (3) Igneous rocks are not good for water resources. (4) Extended drought. (5) Protected water is destroyed. (6) Natural water resources are polluted.
	7. Frequent **disease** outbreaks in the area.	(1) Poor response to disease prevention campaign. (2) People cannot get access to safe drinking water. (3) Favorable environment for breeding of vectors. (4) Poor sanitation especially pit latrines. (5) Frequent / annual floods in the area.

2.1.2 Situation Analysis at Divisional Level

The summary of the results of problem analysis at the divisional level workshop done by divisional officers, representatives of NGOs and CBOs active in the divisions is shown in Table 2.1.3. The core problem was set as “life is difficult in XX division” so that it can cover all the problems and issues necessary for planning comprehensive development programmes.

Out of five divisions, **food security** is ranked number one in Nyando, Lower Nyakach and Upper Nyakach Divisions, **health** in Miwani Division, and **income** in Muhoroni Division. Other than those three priority issues, **infrastructure** comes number three in Nyando Division, **environment** is number two in Lower Nyakach Division, and **education** is number two in Miwani Division.

Table 2.1.3 Results of Problem analysis at the Divisional Level Workshop

Core Problem	Major Causes
Life is difficult in **Nyando** Division.	**1. (40%) Food security.**
	2. (25%) Diseases.
	3. (15%) Infrastructure.
	4. (10%) Education.
	5. (10%) Environment.
	6. High unemployment rate.
	7. Low Price of agricultural produce.
	8. Poor fishing industry.
Life is difficult in **Lower Nyakach** Division.	**1.** Low **crop** and **livestock** yields / Low livestock produce.
	2. Inadequate fuel for lightning and cooking / **Deforestation** / Under / over utilization of existing **natural resources**.
	3. Low access to clean and safe **water** / High prevalence of human **diseases**.
	4. Inadequate access to formal **education**.
	5. Limited access to **market** / Limited access to **market information**.
	6. Poor **road** networks.
Life is difficult in **Miwani** Division.	**1. Poor health.**
	2. High illiteracy level.
	3. Food security.
	4. Unemployment.
	5. Environment is degraded.
	6. Poor infrastructure.
Life is difficult in **Muhoroni** Division.	**1. (50%) Low income.**
	2. (30%) Insufficient food.
	3. (20%) Poor human health.
Life is difficult in **Upper Nyakach** Division.	**1. Food security.**
	2. High incidence of human diseases.
	3. Low income.
	4. Environmental degradation.
	5. Annual flooding in the lower zones.

Note: Number at major cause shows the priority, and percentage shows the weight of the cause.

2.1.3 Situation Analysis at Community Level

Community level workshops in Nyando District were held from 10 to 26 August 2005 at the five villages which represent all the five divisions in Nyando District. The Study Team spent two days for interviews prior to the participatory workshop. The summary of the results of problem analyses at the community level workshops done by the villagers is shown in Table 2.1.4. The core problem was set as "life of the farmers in XX village is difficult" so that it can cover all the problems and issues necessary for planning comprehensive development programmes.

As the priority direct causes, **income** was chosen number one in all the five villages in Nyando District. The decision was overwhelming in many cases. The second choice was **food** in three villages in the flat area namely Siany CC1 and Giko Schemes (Nyando Division), Kamgwa Village (Lower Nyakach Division) and Komolo Village (Miwani Division), while **diseases** in two villages in the hilly area namely Ruke Village (Muhoroni Division) and Bwanga Village (Upper Nyakach Division). Number one secondary cause was **rice** in Siany CC1 and Giko Schemes (Nyando), **job opportunities** in Kamgwa (Lower Nyakach), **sugarcane** in Komolo (Miwani) and Ruke (Muhoroni), and **yield** in Bwanga (Upper Nyakach).

Table 2.1.4 Results of Problem analysis at the Community Level Workshops

Core Problem	Direct Causes	Secondary Causes
Life of the farmers in Siany CC1 and Giko Schimes is difficult. (**Nyando** Division) 12 August 2005	**1. Income** of the farmers in Siany CC1 and Giko Schemes is low.	1-1 Harvest of **rice** is not proper. 1-2 Farmers have no **market** to sell. 1-4 **Middlemen** take advantage in rice contracts.
	2. Farmers of Siany CC1 and Giko Schemes don't have enough **food** to eat.	1-3 Crops (maize, sorghum, beans) **production** is low. 1-5 Farmers plant no or only a little **subsistence food**.
Life of the farmers in Kamgwa Village is difficult. (**Lower Nyakach** Division) 16 August 2006	**1. Income** of the villagers is low.	◎ Villagers cannot find **job opportunities**. ○ **Livestock** die. *(Men only vote.)* ○ Villagers cannot sell **sisal** baskets and ropes. *(Mostly women vote.)* ○ Villagers cannot sell **stones**. ○ Villagers cannot sell **cotton**. Villagers cannot sell honey.
	2. Villagers do not have enough **food.**	◎ Villagers cannot get good **yield**. Villagers cannot get any **vegetables**.
	3. Children and adults get **sick.**	◎ Villagers cannot drink safe **water**. Villagers are practicing unprotected sex. Villagers are in malnutrition.
Life of the farmers in Komolo Village is difficult. (Human death is rampant.) (**Miwani** Division) 23 August 2005	**1. (60%)** Our **income** is low**.**	1-1 Income from **sugarcane** is low. 1-2 Educated youth can't get **jobs**. 1-3 We can't plant **vegetables**. (1-4) Our animals die. (1-5) There are many livestock theft. (1-6) Widows are the only income sources.
	2. (25%) We have little **food**. (Disabled don't have food.)	2-1 **Floods** damage farms. 2-2 Not enough water in **dry season**. (2-3) Many weeds spoil farms. (2-4) We only plant sugarcane.
	3. (15%) There are many human **diseases**.	3-1 We don't have clean **water**. 3-2 Dirty **living environment**. (3-3) Malaria is everywhere. (3-4) HIV/AIDS infections.
Life of the farmers in Ruke Village. (**Muhoroni** Division) 19 August 2005	**1. Income** of Ruke villagers is low.	1-1 We cannot cultivate **sugarcane**. 1-2 It is difficult to **carry sugarcane** to factory. (1-3) Villagers cannot grow vegetables. (1-4) We cannot have white-collar jobs.
	2. There are many **diseases**.	2-1 Health **facility** is far. (2-2) We have no clean drinking water.
	3. We cannot have enough **harvest.**	3-1 The price of **farming tools** is high. 3-2 We don't use correct **inputs**. (3-3) We cannot cultivate food crops. (3-4) We don't have proper farming skills.
	4. We are **overcrowded**.	(4-1) We cannot build houses.
Life of the farmers in Bwanga Village is difficult. (**Upper Nyakach** Division) 26 August 2005	**1. (80%)** Our **income** is low.	1-1 We get low and poor quality **yield**. 1-2 We **can't work**. 1-3 We can't **sell products** at good price. 1-4 We don't get good quality **livestock**. (1-5) Brick production is low.
	2. (15%) We have many **diseases**. (HIV/AIDS, malaria, typhoid etc.)	2-1 We are drinking unclean **water**. 2-2 We don't know how to **protect** ourselves from diseases. 2-3 We can't get proper **treatment.** (2-4) We are not having balanced diet.
	3. (5%) We don't have enough **food** to eat.	3-1 Production of **subsistence food** is low. (3-2) There are many dependents in the family.

Note: Number at direct cause shows the priority, and percentage and also symbols of ◎ & ○show the weight of the cause.

2.2 Major Development Challenges

In addition to the constrains identified during the series of workshops aforementioned in the earlier sections, this sub-chapter discusses development challenges that have been identified by the Team from literature review, field observations, and interviews to concerned government officers and farmers. The challenges discussed below are: 1) Flood occurrence, 2) Sugarcane monoculture, 3) High prevalence of HIV/AIDS, 4) Orphans and Vulnerable Children (OVCs), 5) High children's mortality rate, 6) Proposal method and CBOs organized by supply-driven, and 7) Scarce domestic water. Though low level of recurrent and development budgets available at the district level are one of the challenges, this will be elaborated in the "2.4 Trends of Available Fund and Disbursement Mechanism".

2.2.1 Flood Occurrence

Flood has taken place in the Nyando River over the years. Ministry of Water and Irrigation reported major floods in 1961, 1964, 1985, 1988, 1997 and 1998, 2002, 2003, 2004 and 2006. The flood in 1961 was caused by exceptionally heavy rainfall which fell in October and November, which are in the short rainy season. The floods in 1997 and 1998 were due to the effect of El Nino. During October and November of the years 1997 and 1998, rainfall reaching over more than double amount as compared to the normal year fell and caused floods. Recent floods took place in the long rainy seasons of 2002, 2003 and 2004, and in the short rainy season of 2006 (December). The floods in the long rainy season occurred in April and May, which usually are the months showing the peak monthly rainfall over a year. These floods were due to heavy rainfall in the upper catchment of the Nyando River, and aggravated due to the breakage of the dykes during the 1997 and 1998 floods.

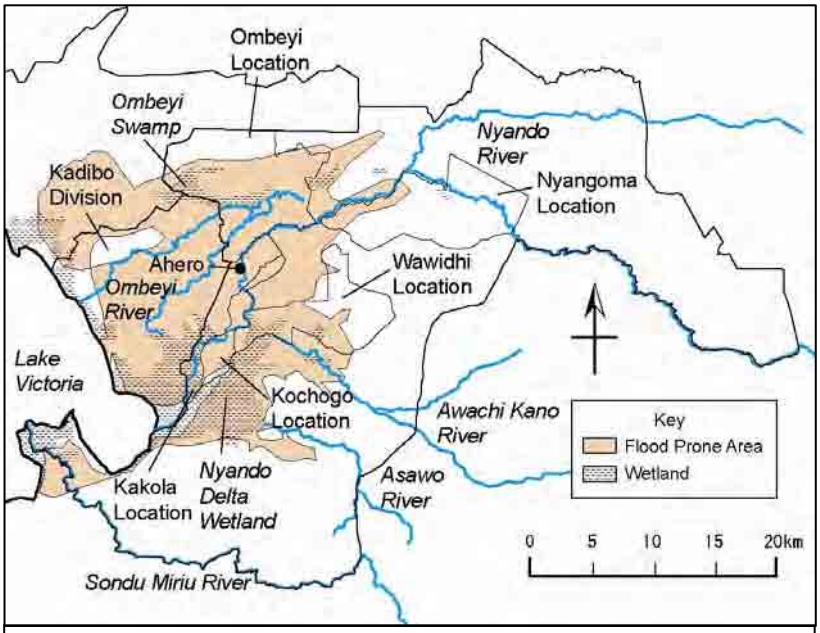
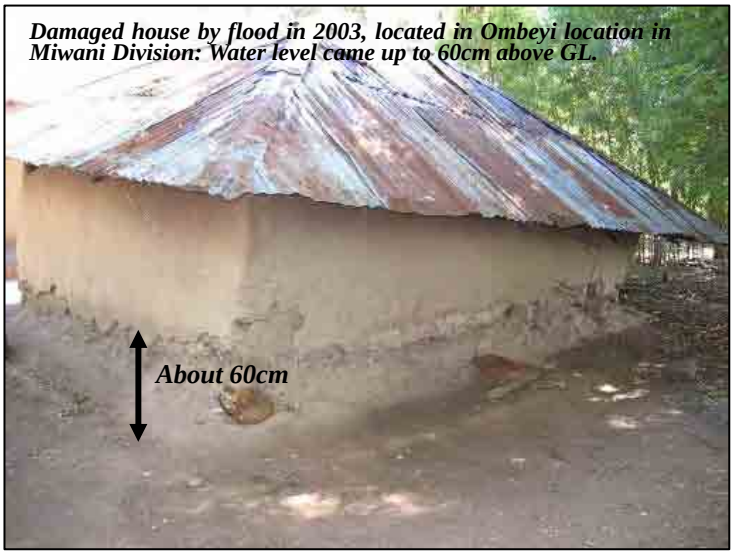


Figure 2.2.1 Flood Prone Areas in Nyando District



Damaged house by flood in 2003, located in Ombeyi location in Miwani Division: Water level came up to 60cm above GL.

Flooding in the lower reaches of the Nyando River is almost a yearly occurrence. The last 30 Km with an estimated area of about 30 Km^2 before Nyando River enters Lake Victoria is very flood prone area, which falls in both Nyando and Kisumu Districts. Another flood prone area is in Miwani Division. The worst flood hit areas in Nyando District are: Kakola, Kochogo and Wawidhi Locations in

Nyando Division, and Ombeyi and Nyangoma Locations in Miwani Division (see photo). Towards west areas which fall in Kisumu District, Kadibo Division is worst hit by floods. The floods in Kadibo Division are mainly caused by Ombeyi River. Aside from Nyando and Ombeyi rivers, Sondu-Miriu, Asawo and Awach-Kano rivers have also caused flood occasionally, but to a lesser extent than Nyando River.

Annual report of 2004 by the Ministry of Water and Irrigation summarized the damages for the recent years 2002, 2003 and 2004 as follows. In 2002 floods it is reported 88 shallow wells were submerged and 1,915 homes were badly damaged. No record exists on the wells damaged by the 2003 floods. However, a lot of wells had been polluted, causing an increase of water borne diseases and malaria. In the latest flood of 2004, a total of 4,000 ha farmlands were damaged, of which 2,300 ha were under cereals.

Table 2.2.1 Damages in Nyando District caused by Recent Floods

Year	People Killed	Persons Displaced	Education Institutions Affected		Farmland submerged, ha	Remarks
			Primary	Secondary		
2002	-	10,000	27	3	3,090	
2003	6	5,000	40	5	3,000	
2004	6	400	34	6	4,000	

Source: 2004 Annual report, the Ministry of Water and Irrigation

After each flood shown above, relief supplies came to the district from the government, NGOs, international donors such as Red Cross, UNICEF, WHO, etc., to maintain the affected people. The relief was in form of provision of tents, food, mosquito nets and blankets. The cost at 2004 constant price is estimated at around Ksh 37 million each for the 2002 and 2003 on average, and Ksh 9 million in 2004. Apart from the relief support, people's economic activities were disrupted because the road networks were cut off. The soils in this area are black cotton clay soils, which become very sticky and plastic when wet. Though the flood does not stay long, say not over several days, it causes damage to infrastructure which requires re-investment in rehabilitation, disrupts peoples life, causes water-borne diseases, etc. Also during long rainy seasons, no agriculture activities can take place in the flood prone areas because most of the areas are almost always submerged. The areas can only be planted during short rainy seasons. Thus, the flood has been an economic burden to the Nyando people.

2.2.2 Sugarcane Monoculture

The Kenyan sugar industry started production in the 1920s by the private sector. The oldest factories are Miwani Sugar Company (1922) and Ramisi Sugar Company (1927)[1]. Since 1963, the Government has adopted an industrial policy to foster the sugar industry under its initiative aiming to increase employment and promote import substitution. In the period of 1966 to 1979 five more sugar factories were established one after another with the greater ownership and management by the Government. They are Muhoroni (1966), Chemelil (1968), Mumias (1973), Nzoia (1978), and Sony (South Nyanza, 1979). In 1996, West Kenya Sugar Company was established under a private ownership. These sugar factories are located in Nyanza and Western Provinces. In particular, Nyando District has a wide sugar cane belt ranging from Miwani Division to Muhoroni Division where the three sugar companies of Miwani (1922), Muhoroni (1966) and Chemelil (1968) are located.

To expedite the development and efficient management of the sugar industry, the Kenya government established the Kenya Sugar Authority (KSA) in 1973. In April 2002, the Government enacted the

[1] Ramisi Sugar Company was in Kwale District, Coast Province, but it was closed.

Sugar Act 2002 to define the roles of the major players and stakeholders in the sugar industry, including millers, sugarcane farmers, out-grower organizations, and the Kenya Sugar Research Foundation (KESREF). The Sugar Act 2002 also created the Kenya Sugar Board (KSB) from the former KSA, as the apex body responsible for regulating, developing, and promoting the Kenyan sugar industry.

According to the Economic Survey of 2005, Kenya produced 4.66 million tons of sugarcane in 2004, yielding 516,800 tons of processed sugar with an estimated local market value of about Ksh 20.8 billion. The sugar industry has created direct and indirect employment of some 500,000 people in sugarcane farming. Sugar is an essential raw material for processing food, beverages, and pharmaceuticals. If milling, retailing and transportation industries are included, the sugar industry is estimated to have supported some 6 million Kenyans (Economic Survey of 2005). Thus sugar is one of the most important industries in Kenya in terms of employment.

Total production of sugar amounted to 516,800 tons in 2004 (see Table 2.2.2), the highest in the past, mainly due to adequate rainfall. In the same year, however, the domestic consumption of sugar amounted to 669,910 tons far exceeding the domestic production. As a result, Kenya imported some 164,020 tons of sugar including industrial sugar mainly from the COMESA countries. Since the imported sugar is priced much lower than the domestic sugar, it tends to increase in the past 5 years (big volume of import in 2001 was due to shortfall of the production in the same year which was caused by mismanagement of the factories such as a maximum two-year delayed payment to the farmers). By contrast, sugar export from Kenya has not grown since 2002 to stand at 11,580 tons in 2004. The statistics in the past 5 years indicate that the sugar industry has contributed neither to import substitution nor to acquisition of foreign exchange in the Kenyan economy.

Table 2.2.2 Domestic Production, Consumption, Import and Export of Sugar, '000tons

Year	Production	Consumption	Imports	Exports
2000	401.98	619.27	118.01	2.09
2001	377.44	630.07	249.34	3.60
2002	494.24	652.13	129.97	12.05
2003	448.49	663.78	182.23	11.30
2004	516.80	669.91	164.02	11.58

Source: Kenya Sugar Board

The sugar factories now in operation have procured sugarcane from their nucleus estates and out-growers. The share of out-growers has been increasing to exceed 80% in 2004. Most of these out-growers are small-scale farmers with 0.8 ha on the average nation-wide. The Nyando sugar cane belt area has comparatively larger farmers numbering 3,000, while Western Province and the southern Nyanza region have comparatively smaller farmers numbering 45,000 and 20,000, respectively. In Nyando District, first settlers to the sugar cane belt area were given 10 acres each for small scale, and 20 to 60 acres each for large scale farmers. Even now there are many farmers who have more than 10 acres land in Muhoroni Division.

The sugar industry in Kenya has faced a multitude of constraints and problems, both at the farm (sugarcane production) and the factory (sugar producing) levels. These various kinds of constraints and problems at both the farm level and the factory level (described below) have interacted closely to make the sugar industry in Kenya inefficient and uncompetitive. Furthermore, in February 2008, liberalization of sugar trade among COMESA countries will be implemented. At the moment, Kenya government imposes 100% of import duty for sugar, with which the Kenyan sugar can compete with the imported ones. This means cheaper sugar produced outside the country could flow into Kenyan market after the liberalization in 2008, e.g. the market price of sugar in Sudan is considered 1/2 to 1/3 of Kenya. The atmosphere for Kenyan sugar industry is getting severe upon the liberalization, but right now there are many farmers making livelihood on sugar cane.

1) Constraints and Problems at the Farm Level

High production cost of sugarcane due to unfavorable geographical and climate conditions comes first as constraint. Sugarcane farms in Kenya are located on the highlands of more than 1,300 m above sea level, and in Nyando farms are on the land of around 1,200 m. It is rather cool and does not have much rain. For example, annual rainfall in Nyando District is often lower than 1,500 mm, which is the minimum required for sugarcane production. In Kenya, it takes 16 to 24 months for sugarcane to ripen due to the climate. In contrast, it takes only 12 months to ripen sugarcanes in the areas where it is hotter and more humid like Sudan. Irrigation systems to make good the shortage of rainfall have not been developed well in Kenya. These geographical and climate conditions have resulted in higher cost of sugarcane production.

Poor crop management practices are also a constraint. It is pointed out that a large number of sugarcane farmers in Kenya have not used suitable cane varieties nor practiced appropriate management for weed control, use of fertilizers, and harvesting. Furthermore since they have been long engaged in sugarcane monoculture, they have not acquired enough knowledge and skills to diversify their farming. They have no choice but to continue sugarcane production which has been easily affected by climate conditions and has been increasingly unprofitable. This has also been worsened by lowering of motivation and morale for sugarcane production due to delayed payment. Though in recent years the payment has been improved, the sugarcane farmers had frequent complains against delayed payment to the millers. This experience has discouraged sugarcane farmers to increase production or improve productivity.

2) Constraints and problems at the factory level

The milling factories in Kenya currently use 9 to 13 tons of sugarcane to produce sugar of one Kg on the average. Brazilian millers, however, currently use 6 to 8 tons of sugarcane to produce the same volume of sugar. This difference comes mainly from that of the quality of sugarcane supplied by farmers. Kenyan sugarcane have comparatively lower content of sugar because they are sometimes harvested immature or some varieties of them are not grown in suitable areas. Low milling capacity of the factories is also a constraint. The total installed capacity of the six operational millers in Kenya is currently 21,300 tons per day. This scale is not large enough to compete in the international market. Kenyan millers have found much difficulty in expanding their milling capacities due to lack of investment funds.

Low operating rates for the factories also prevail. Kenyan millers have caused recurrent shutdowns by poor corporate management or poor maintenance of their facilities. As a result, their operating rates have dropped to 50% - 85% of the installed capacities. Miwani Sugar Factory closed down in 2000 and since then it has remained non operational. Muhoroni Sugar Factory went down to receivership, with which it is now operational. Kenyan millers are highly indebted to various creditors including sugarcane farmers. The repeated delays in payment for sugarcane have discouraged farmers to supply quality sugarcane with more fluctuations. Though the payment has improved, up until recently as long as more than two years of delayed payment prevailed. This in turn has led to financial losses and shutdowns of operations in the millers.

As for by-product, the Kenyan millers have so far not given much attention to this, although they have various kinds of potential usages, namely, bagasse for use in cogeneration, molasses as raw materials of industrial alcohol and livestock feed, briquettes (filter mud, or sugar charcoal) as a substitute for charcoal, and filter mud as a fertilizer. As a result, a large quantity of these by-products has been dumped. By-products have been wasted but at the present financial situation the millers do not have enough capacity to install equipment which utilizes the by-products.

2.2.3 High Prevalence of HIV/AIDS

HIV/AIDS was declared as a national disaster in November 1999. Since then the GOK has been putting much effort on combating the disease. The nationwide prevalence of Kenya reached the peak of the epidemic in 2000. The nation wide trend shows that there has been a decline in prevalence in this decade. The current national prevalence in pregnant women as of year 2006 stands at 5.9 %.

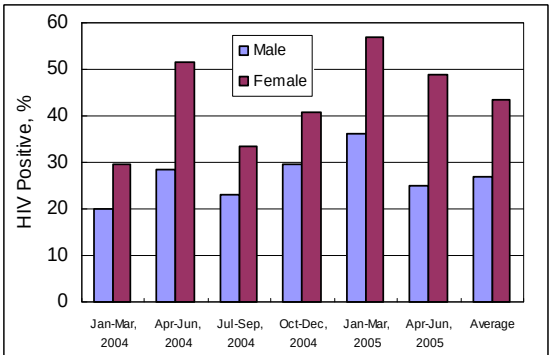


Figure 2.2.2 HIV Positive in VCT Clients

Turning to the HIV prevalence in Nyando District, it is a well-known fact that this Nyanza area's prevalence is higher than other parts of Kenya. Figure 2.2.2 shows HIV positive ratios for those who have visited VCTs in Nyando District from the 1st quarter of 2004 to 3rd quarter of 2005[2]. The figure shows higher prevalence in women than men, ranging from 30 to nearly about 60 percent for women and 20 to 36 percent for men. This does not mean the actual prevalence in women is higher than men. Those women who visited the VCTs are in fact widows in many cases. They have suspected they might be positive after seeing the partner having died of AIDS related diseases, and unfortunately it turns so in many cases.

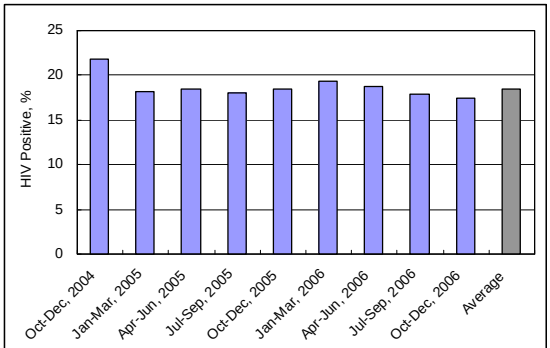


Figure 2.2.3 HIV Positive in Pregnant Women

Figure 2.2.3 shows the HIV prevalence in pregnant women of Nyando from 4th quarter of 2004 to end of year 2006, which can imply the prevalence ratio among economically active generation. The prevalence ranges from 17 to 22 percent, with a sign of slightly declining. Overall average prevalence for the period now stands at 18 percent. Since long-term trend is not available in Nyando District, it may be difficult to say the trend. However, according to interviews of community members by the Team, nowadays most of them are well aware of what HIV is and what it causes to what extent. Most of the interviewees have addressed the prevalence, which has already passed the peak some time ago. Figure 2.2.4 shows the prevalence in pregnant women in Kisumu urban, for which long-term data is available. The trend started declining already in 2000. With this trend in neighboring area, the prevalence in Nyando can be said to have started already declining.

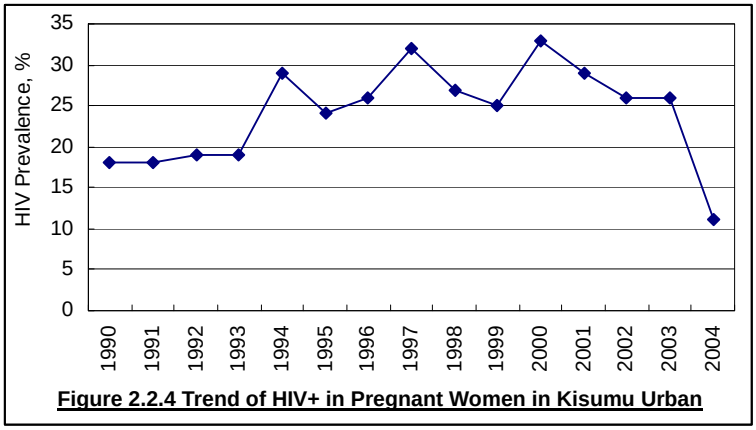


Figure 2.2.4 Trend of HIV+ in Pregnant Women in Kisumu Urban

However, the decline in prevalence does not necessarily mean a decline in the rates of new infections. The decline could mean increased deaths (more deaths than new infection) or it may mean new

[2] Nyando district was curved out from Kisumu in 1999, and even after that many HIV clients had been referred to hospital in Kisumu City until very recently. Therefore the HIV related data for Nyando is available only after 1st quarter of 2004.

infections have actually reduced. HIV/AIDS affects economically active population, stagnating economic activities. Also left are orphans who need support to continue his/her education, but in many cases the orphans start dropping out of school because they need to take care of siblings, and in case of secondary schools it becomes very difficult to continue without bursary arrangement. HIV/AIDS is well known to cause opportunistic infections such as TB, pneumonia, URTIs and skin infections, which also create burden on the family as well as on the society by and large. Though there is already a sign of declining for the prevalence rate, the HIV/AIDS is a big challenge in dealing with development of this area.

2.2.4 Orphans and Vulnerable Children (Orphans in Public Primary Schools)

HIV/AIDS has left a lot of orphans. Though exactly how many children have been left out as orphans due to the death of the parents by HIV/AIDS is not known, an alarming number of orphans is appearing. The Ministry of Education carried out a nation wide survey of how many orphans they have in their public schools in July 2005. Table 2.2.3 summarizes the orphans by zone and category, which tells us that:

- Partial orphans who do not have a father is 17 percent while it is 8 percent for those who lost a mother. The ratio of orphans not having father is about two-fold of those who lost the mother. This may indicate that HIV firstly comes to male and then it is transmitted to the partner who is the mother to the orphan. If this is true, the ratio of orphans who lost mother will go up, depriving the orphans of the mother after the father and leaving him/her with neither father nor mother.

- Percentage of total orphans, meaning no father nor mother, stands at 12 percent as district average. This means one out of every 8 pupils is now a total orphan. Partial and total orphans in the district is now 37 percent, composed of 12 % for the total orphans, 17 % for those who lost father and 8 % for those who lost mother.

- The numbers of the orphan in Lower Nyakach is remarkably high, standing at 20 % for total orphans and 51% for those who lost either or both. The high rate mainly comes from Katito zone where there is a junction branching to Kendu Bay from the main road between Kisumu to Kisii. Overnight shopping centers are known to show high prevalence of HIV/AIDS. Also, poverty in Lower Nyakach is very high, forcing many male to work outside their home area. They may be affected HIV/AIDS in the area where they work and may come back with the deadly infection.

Table 2.2.3 Number of Orphans in Primary Schools in Nyando District as of July 2005

Division	Zone	Enrollment	Partial Orphans				Total Orphans		Total	
			Lost Father		Lost Mother					
			number	%	number	%	number	%	number	%
Muhoroni	Menara	8,168	932	11	454	6	576	7	1,962	24
	Chemilil	8,522	1,259	15	526	6	735	9	2,520	30
	Total	16,690	2,191	13	980	6	1,311	8	4,482	27
Miwani	Ombeyi	6,737	947	14	492	7	565	8	2,004	30
	Myagoma	5,015	986	20	397	8	496	10	1,879	37
	Masogo	5,279	800	15	404	8	497	9	1,701	32
	Total	17,031	2,733	16	1,293	8	1,558	9	5,584	33
Nyando	Ahero	12,117	2,137	18	1,082	9	1,563	13	4,782	39
	Awasi	7,730	1,437	19	666	9	931	12	3,034	39
	Total	19,847	3,574	18	1,748	9	2,494	13	7,816	39
L/Nyakach	Katito	6,380	1,707	27	668	10	2,373	37	4,748	74
	Lisana	4,625	884	19	279	6	401	9	1,564	34
	Pap Onditi	4,701	888	19	413	9	433	9	1,734	37
	Total	15,706	3,479	22	1,360	9	3,207	20	8,046	51
U/Nyakach	Bolo	3,356	565	17	213	6	308	9	1,086	32
	Kandingo	4,182	668	16	419	10	630	15	1,717	41
	Nyabondo	6,878	1,096	16	499	7	629	9	2,224	32
	Sigoti	3,122	465	15	217	7	442	14	1,124	36
	Oboch	5,320	1,146	22	433	8	513	10	2,092	39
	Total	22,858	3,940	17	1,781	8	2,522	11	8,243	36
District Total		92,132	15,917	17	7,162	8	11,092	12	34,171	37

Source: Education Office, Nyando District

Orphan left out is a very big challenge in undertaking development in Nyando District. The number of orphans will probably increase over some time. Orphans have difficulty to continue their education, and in fact it is reported by many public schools most of those who drop out of the schools are in fact orphans because they may have to take care of their younger brother and sister, and in case of secondary education that free education is not applied, they easily drop out unless there is bursary. Though community initiatives are coming up in many places to take care of the orphans, the issue easily goes beyond what the community members can manage due to the fact that the number of orphans is increasing. In this area, social safety net left out only to the community may not be enough to work out the issue but public assistance by the government and donors must come in. The assistance should be based on development concept but not just on relief concept, which is a big challenge to development in this district.

2.2.5 High Children's Mortality Rate

As described in Part I section 3.3, the infant and under-five mortality rates in Nyando District are much higher than the national average. Infant mortality and under-five mortality rates in Nyando District in 1999 are 116.1 and 212, which are 50% and 83% higher than the national average respectively (see Figure 2.2.5). The data means that about one in every 5 children cannot see their five-year birthday.

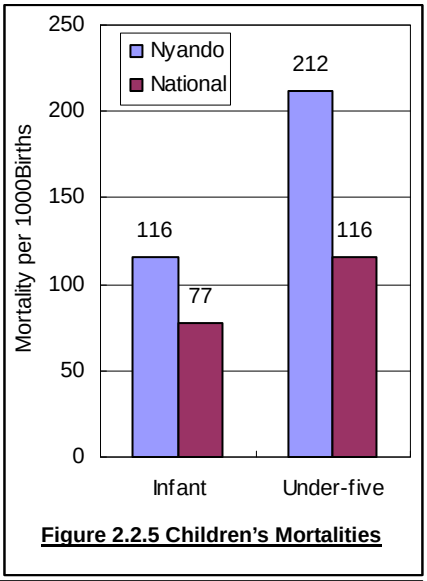


Figure 2.2.5 Children's Mortalities

The "Millennium Development Goals Status Report for Kenya 2005" identifies the result of the deaths of infants in recent years as mainly from five diseases: acute respiratory infections, diarrhea, measles, malaria, and malnutrition or combination of these conditions. Among these diseases, high occurrence of malaria and also its trend of sharply increasing in recent years as shown in Figure 2.2.6 might be further increasing the rate of the children's mortality. Also as one of the challenges, the report mentions that child health has been adversely affected by HIV/AIDS pandemic. This case could be more meaningful in the Study District as the HIV/AIDS prevalence in Nyando District is very high.

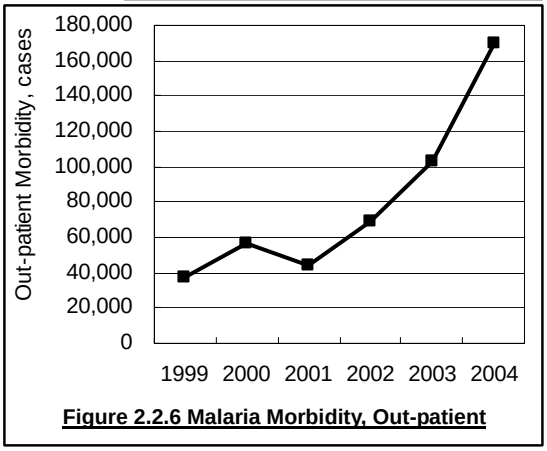


Figure 2.2.6 Malaria Morbidity, Out-patient

High mortality rate of children would not, however, be solely the cause of prevalent diseases. An issue could be the situation of how parents can cope with the disease prone to the environment of the Study Area. As a simple logic, poverty incidence would be the backbone of the situation. High mortality rate of children may have influenced the intention of parents to have many children as a cheap measure to it if cold-heartedly said, though there could be more reasons to have many children for the parents. However, to have many children gives heavy burden to mothers in terms of health and time loss from economic activities. These conditions might be the case for the poor to prolong their poverty status.

High children's mortality rate cannot be attributed to only lack of health intervention in the prevalent disease, but it is also related to high poverty incidence. It has often been said that because parents are too poor to access medical care for their children and then take a measure to have more children over high incidence of their children's early deaths. But it is a kind of vicious circle, so that we should

have in mind the fact that the high mortality rate of children would also be a cause of poverty. In this situation, parents could not stop having more children, that is, if cold-heartedly said, not stop pursuing quantity rather than pursuing quality of life. The more quantity (more number of children) the parents have, the less they can invest per child, and thus the poverty is inherited from the parent to the less invested children. This situation makes them very difficult from getting out of the trap of the poverty vicious circle[3].

2.2.6 Proposal Method and CBOs organized by Supply-driven

In nowadays context, there are many donors who adopt proposal method to implement community based projects. Under this arrangement, target communities are supposed to prepare project proposals and submit them to the respective donors. Upon appraisal of the proposals, funds are disbursed to their accounts. In Nyando District, there are NGOs and also a National AIDS Control Council (NACC) supported programme which employ the proposal method, with the latter being the majority. NACC has a community initiative programme targeting vulnerables affected by HIV/AIDS, which is administered through Constituency AIDS Control Council (CACC). The programme during the phase one stage from 2000 to 2005 disbursed some funds to CBOs and NGOs with the maximum of Ksh 350,000 and Ksh 1.2 million per proposal respectively.

During the phase one stage of the NACC programme, about 1,170 projects in Nyanza Province, constituting 21 per cent of the total 5,635 projects nationally were supported. From a monetary perspective this was 16.3 percent of the US$ 30M disbursed. The CBOs and NGOs in Nyando District during the first phase of 2000 – 2005 have received funding from NACC to the tune of Ksh 35.6M as shown below. The grant was meant to assist projects supporting orphans and vulnerable children (OVC) and also promoting income-generating activities for those CBOs affected by HIV/AIDS and NGOs dealing with the vulnerables.

Table 2.2.4 Funds allocated to CBOs and NGOs in Nyando District by NACC as at First Phase 2000-2005

Constituency	Organization	Number of Projects	Projected Ksh millions	Total Financing First Phase 2000-2005, Ksh millions
Muhoroni	CBOs	42	14.7	29.0
Nyakach		41	14.35	
Nyando		35	12.25	
Nyando District	NGOs	7	8.4	6.6
Total		125 (118)	49.7	35.6

Source: National AIDS Control Council Offices, as of July 2005

The disbursement mechanism for CBO project is; upon appraisal of the proposal 1st disbursement with a maximum of Ksh 200,000 is remitted to their bank account, which shall be spent within a quarter period with the accounting report being submitted to the NACC. After the accounting report has been accepted, the 2nd disbursement of Ksh150,000 is remitted. Problem lies with the accounting of the 1st disbursement. As shown below; out of 118 CBO's projects only 46 projects, which consist of about 39 percent, have been disbursed the 2nd payment. Others which are the majority were not able to receive the 2nd disbursement due to accounting problems.

Muhoroni Constituency:	Of 42 projects, 16 (38%) received, 26 (62%) not received
Nyakach Constituency:	Of 41 projects, 20 (49%) received, 21 (51%) not received
Nyando Constituency:	Of 35 projects, 10 (29%) received, 25 (71%) not received
In sum	Of 118 projects, 46 (39%) received, 72 (61%) not received

The accounting problem may date back to the proposal preparation, because the fact is that many

[3] The Elusive Quest for Growth, William Easterly

proposals were written by someone else who is not the member of the CBOs. Though it is difficult to estimate, it is allegedly said by those the Team has talked to that at least more than two thirds of the proposals have been written by others upon remuneration. It cannot be criticized taking into account the context of the communities whose vulnerables have a difficulty to write up an attractive proposal. Also, accounting may have been failed not intentionally but because of mere difficulty of getting all the receipts ready for the accounting. For example, when a CBO orders uniforms for orphaned children they usually make the order to the members who are not necessarily in the business ready for issuing official receipt. What should be pointed out here is not the slack accounting but the proposal mechanism which can hardly meet the present context of the communities.

Another aspect is that proposal method is usually called demand driven, but is it really so? It may be said that because of the fund available, communities are motivated to move onto demand-driven which is in essence supply-driven. As of December 2006, there are as many as 8,344 CBOs registered in Nyando District, and the Figure 2.2.7 shows the trend of the registration of CBOs by year. In 2003 the number increased dramatically as the proposal method became familiar to most of the rural communities. From the administration side of the fund, proposal method may be one of the most effective ways of disbursing the huge fund. However, one may have in mind that proposal method does not entail technical expertise points of view which must be available from the supply side. Also there is a possibility that funds availed through proposal method may be reaching relatively elite class only in the rural communities because the poorest and vulnerable groups which are in need of such assistances in deed may not have enough capacity to prepare attractive proposal because even those who have so far accessed the fund have asked someone else to prepare the proposal in many cases.

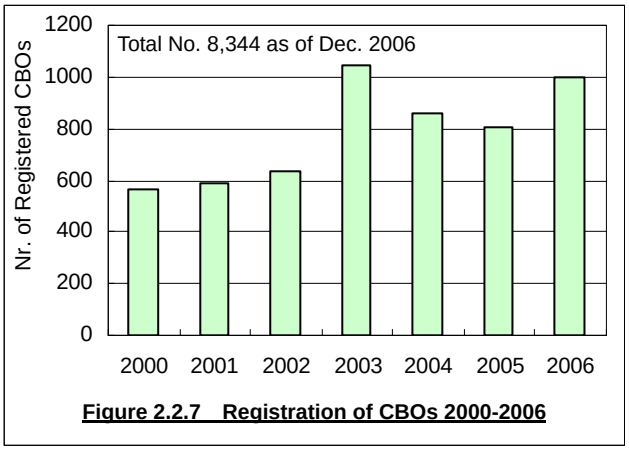


Figure 2.2.7 Registration of CBOs 2000-2006

2.2.7 Scarce Safe Water

At the community workshops, the participants of four divisions except Nyando Division identified the problem of 'to access safe water'. Even for Nyando Division, field interviews revealed that people living in downstream reaches of Nyando River complain about safe water, as mainly water quality of shallow well is not good. The water from shallow well contains high sodium chloride, giving salty taste to the rural population. Many people of all the divisions in Nyando District are concerned with the difficulty of access to safe water.

Available records indicate that there are 24 water supply schemes under the management of various agencies. The Lake Victoria Water Service Board (LVWSB) runs five gazetted water schemes with a monthly water production capacity of 26,000 m^3. Private institutions operate 11 water supply schemes and communities also operate eight water schemes. These schemes provide water by pipeline system, but accessible population is so limited[4]. Major water sources for domestic use for rural community are shallow wells, springs, boreholes, pans, roof catchments, and river / lake. There are over 600 shallow wells, 32 protected springs, 263 boreholes, 126 small earth dams (pan) and over 1,000 roof catchments that are managed by the individual communities (Table 2.2.5).

[4] The gazetted water schemes by LVWSB could serve around 18,000 people or 5% of the target population at a per capita water use of 50 lts/day.

Table 2.2.5 Summary of Small-scale Community Water Points

Division	Pans	Boreholes	Protected shallow wells	Unprotected shallow wells	Protected springs
Nyando	71		200		
Lower Nyakach	50		115		17
Upper Nyakach			29		4
Miwani	5		75		4
Muhoroni					7
Total	126	263	419	Over 200	32

Source: District Water Office, Nyando District

Results of the water quality analyses carried out in the area by the Ministry of Water and Irrigation in 1997 indicated heavy contamination of the ground water wells. Results of tests carried out in 1997 established that nearly 95% of the water points sampled were contaminated and required regular chlorination to eliminate the fecal contamination. It can be noted that these wells have not contributed to safe water supply and subsequently the reduction of the prevalence of water borne diseases in the district. Salinity in ground water increases as one moves downstream towards the lake. People around Ahero market prefer using water from Nyando River for cooking and drinking as opposed to well water.

Under such circumstances, the most effective measures to provide safer water could be developing pipeline water system abstracting river water or drilling deep well. However, these measures require enormous investment and operation and maintenance costs, e.g. to drill a deep well costs from Ksh1 million to Ksh1.5 million. There could be cheaper alternatives of water resource development such as roof catchments and construction of pans. Of these alternatives roof catchments would be applicable to public building like schools and to those who have iron-roofed houses. The issue of roof catchments is the capacity of the stock. According to field interviews, rainwater by roof catchments is supplemental in most of the houses.

Pans could also be another alternative. Pans to collect run-off are very often found in the rural areas of the Study district. Though water retention in a pan does not last the whole year, pans can be constructed much cheaper than deep wells. However, according to the field interviews, people do not drink water from pans. People in the Study district consider water in the pans is not safe since they are normally shared with animals. Water of the pans is, therefore, used mainly for washing and watering animals (People in the ASAL areas drink water in the pans due to extremely limited water sources in the area).

A questionnaire survey for 20 households in the hilly side of Lower Nyakach Division was conducted to learn people's consideration on water quality. The area is considered that the option of drilling shallow wells is limited due to the topographic disadvantage. Options of water sources for people living in the area are tap (pipeline system), which they have to go up to the main road running the north edge of the division, seasonal river, protected spring at the top of the hill, and pans which have been dug a lot and closest water source for the people living in the area. Figure 2.2.8 shows the water sources by use. It was confirmed that no one drinks water in the pans and 65% of the people interviewed get drinking water from tap. For cooking use, 20% of the people interviewed use water in the

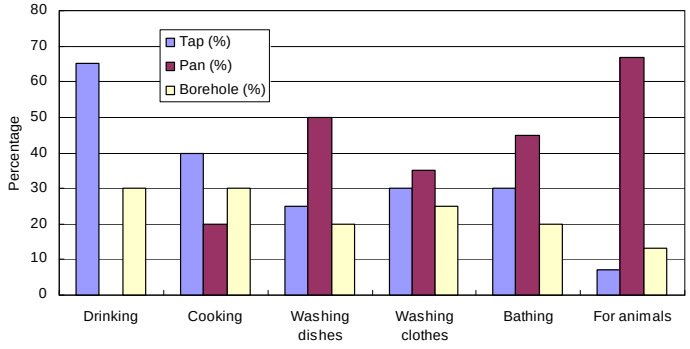


Figure 2.2.8 Water Source by Use: Tap and Pan (L/Nyakach)

pans and people use water in the pans more for domestic purposes. 75% of the people interviewed are also treating drinking water at home by boiling or putting chlorine, etc. (Figure 2.2.9).

Average distance to the tap from the homestead of the sample households is about 45 minutes on foot, while the average distance to the pans is about 25 minutes. The results of the questionnaire show that people do spend more time and money to secure safe water. Tapped water costs 2Ksh/20 litter and people living far from the tap even pay for transportation cost like using bodaboda (bicycle taxi), or donkeys. To transport a 20-liter-jerrycan, bodaboda and donkey cost Ksh10 and Ksh5 respectively. The actual cost of tapped water per 20 liter will, therefore, be from Ksh7 to Ksh12.

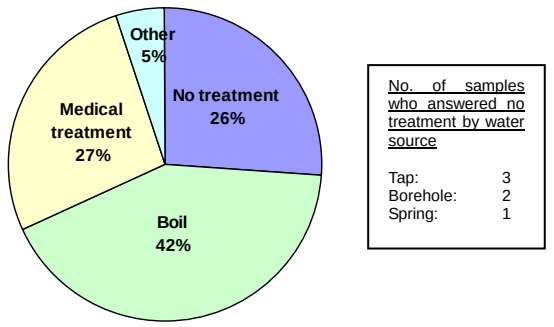


Figure 2.2.9 Treatment of Drinking Water (L/Nyakach)

From the survey results, it is considered that the standard of water quality people in Nyando demand is relatively high, and to supply such quality water to the population in a sustainable manner, a large magnitude of investment and O&M costs will be required. Large-scale investment is a challenge to the service provider, namely public administration and also for the community, who would be subject to take some part of the responsibility for O&M.

2.3 Major Development Opportunities

In addition to the opportunities identified during the series of workshops aforementioned in the earlier sections, this sub-chapter discusses development opportunities that have been identified by the Team from literature review, field observations, and interviews to the concerned government officers and the farmers. The opportunities discussed below are: 1) Technical Officers' Deployment at Divisional Level, 2) Rice Farming adaptable under Inundation, 3) Active CBOs and Lead Local Persons, 4) Proximity to Kisumu City, 5) Locally Available Resource Persons, and 6) Tree Planting Practices.

2.3.1 Technical Officers' Deployment at Divisional Level

The government had been increasing the number of civil servants until 1993, and thereafter started reducing the number though the onset differs by ministry and by government organization. This was in line with restructuring process which started back in 1980s. The Government has discharged many staff especially in such sectors as agriculture and public health, where many field officers especially frontline staff have been greatly curtailed. In fact, almost all the officers the Team contacted have raised shortage of staff as one of critical development constraints as well as shortfall of the budget. As compared to early 1990s, it is a fact that the number of government staff has been curtailed but at the same time still one may see better staff allotment at the frontline in the district. In the district, as already mentioned there is very high population density, so that population coverage per government staff may be quite overburdened but in turn there may be a possibility to have accessible coverage in terms of area.

Government departments which have field staff are; 1) Agriculture including Livestock and veterinary, 2) Public health, 3) Fishery, 4) Water, 5) Forest and 6) Education, of which Ministry of Agriculture has allocated the biggest number of field staff at divisional level and field level. The staff allocation of the Ministry of Agriculture is indicated in Table 2.3.1 below;

Table 2.3.1 Staff Allocation in Agriculture in Nyando District, Divisional Level

Division	Divisional HQs	Frt Ext. Worker	Total	Area Km^2	Area/staff, ha	HHs	HHs/staff	Remarks
Nyando	4	5	9	249.3	2,800	16,717	1,860	
L/ Nyakach	5	4	9	182.6	2,030	13,285	1,480	
Miwani	5	6	11	225.7	2,050	16,661	1,510	
Muhoroni	6	4	10	334.8	3,350	18,016	1,800	
U/ Nyakach	5	4	9	176.0	1,960	16,792	1,870	One study leave
Total at Division	25	23	48	1,168.4	2,430	81,470	1,700	
Livestock	9	-	9					
Veterinary	11	-	11					

Source: District Agriculture Office, as of August 2004, HHs are projection as of 2005 according to 1999 Census

In Nyando, there are 48 agriculture staff at the divisional level including the front line extension workers. Dividing the division area by the respective staff number gives us the average coverage per extension staff, ranging from 1,960 to 3,350 ha with the average of 2,430. The table above also shows the average number of households covered by one extension staff, ranging from 1,480 to 1,860 with a mean of 1,700 HHs (the households numbers are inclusive of non-farm families, namely whole the household numbers projected as of 2005).

Considering the number of households per extension worker, it is in fact impossible to extend their outreach down to all the households. However, in terms of area coverage it is about 2,000 to 3,000 ha on average per extension worker, equivalent to an area of say 5 x 4 km or 5 x 6 km. This area coverage can be managed even by bicycle, which does not need petrol that is nowadays provided under development budget in many cases. Development budget is not however stable without donor support. One may point out 25 staff are stationed at the divisional headquarters, so that they are far away from the frontline reach.

What the Team understands is whether there is such a need for so many staff at the divisional headquarters rather than at the location level. Subject matter specialists are stationed at the district level, so that divisional level staff should be more at the frontline level. Given the area per staff which is coverable by even bicycle, the agriculture extension staff can be said, even after many have been retrenched, that they still have great opportunity to reach out to the frontline, though staff reallocation from divisional headquarters to location level may need to be considered.

2.3.2 Rice Farming adaptable under Inundation

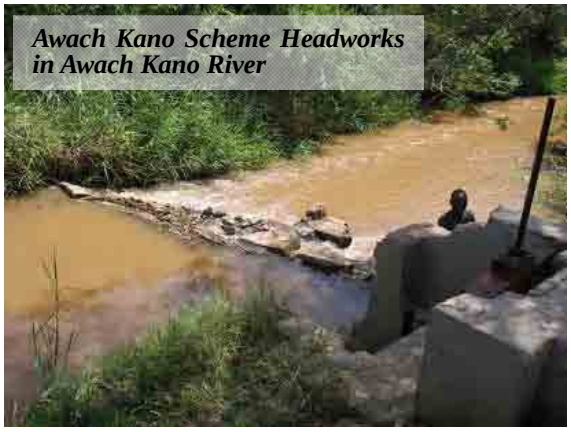
Kano Plain is a well known flood prone area. Especially, flooding in the lower reaches of Nyando River takes place almost every year. The flooding causes inundation over large area, and has left marsh and wetland. On the other hand, the Ahero Pilot Irrigation being the onset of rice cultivation in this area, farmers have well adopted the culture. With some foreign assistances from EEC, they have also scaled up the rice cultivation. Though the magnitude of flooding during the long rainy season does not allow the farmers to cultivate rice, the rice cultivation is well adopted during the short rainy season.

Most of the farmers whose land falls under flood prone areas are now practicing rice cultivation during the short rainy season. If the area is located somewhat upstream, they can start rice cultivation in July. As one moves to downstream areas which are more affected by inundation, the onset of cultivation is delayed but in most cases they can start in October. Rice cultivation has already well taken root as is evident along the Awach Kano River. There are three smallholder irrigation schemes along the river; Awach-Kano, Gem Rae, and Gem Nam. Those irrigation facilities were constructed under Smallscale Irrigation Development Programme (SSIDP) and the Smallholder Rice Rehabilitation assisted by Dutch government and the EEC, but most of the headworks have been

already swept away. In many cases the farmers who have lost the irrigation facility discontinue the irrigation cultivation.

Photos show the present diversion headworks, made out of locally available materials such as stones, grass, tree logs, clay soil, etc. With the simple structures which are well improvised, the farmers still continue rice cultivation though the irrigable area is not as big as they used to be with the concrete diversion structure. The practices are a proof that the farmers have well adopted the rice cultivation which has already become rice 'culture'. The rice culture is a development strength which has been adapted under inundation condition of the Kano Plain, and also a development opportunity which should be further exploited.

Gem Rae headworks in Awach Kano River



Awach Kano Scheme Headworks in Awach Kano River

Though rice has taken root in this area as above-mentioned, there are still areas to improve. One could be improvement or re-establishment of the facilities which have been swept away, and another is improvement of rice cultivation. With respect to the latter, there are 13 key farmers trained in Kilimanjaro Agriculture Training Center under a JICA programme. Most of the farmers in the Kano Plain still depend on traditional cultivation, but those trained farmers do transplanting in line, advanced nursery establishment, weeding with handy tools, and also have got knowledge in rice cultivation in terms of fertilization, the amount and the timing, rice husbandry, harvesting, etc. If those farmers who are already practicing the advanced techniques are put in the main stream of improving rice cultivation, Kano Plain can further bear the benefit accrued from the rice cultivation which is adaptable and in fact has been well adopted in inundation condition of the Plain.

2.3.3 Active CBOs and Lead Local Persons

There is a group established in 2002 and registered by Social Services in Upper Nyakach Division. They are now growing tea. The founder of the group was working for Mumias Sugar Company in Western Province. After his retirement in 1997, he came back to his home in Upper Nyakach and started thinking what he can do in this area. Because coffee was getting low profit then, he thought of other alternatives. He started consulting and had meetings with villagers. Then they (10 people) agreed to sell their assets to raise fund. They collected Ksh 145,000 upon selling even their assets. With this money they rented a vehicle to get seedlings and bought seedlings (Ksh7-8/seedling) from private farmers in Kericho District. They started with seedlings, so that the other members can now buy them cheaper. Now they are selling tea leaves to Chabella (on the way to Kisii), 10km from the village and the nearest collection point of tea. Whenever they harvest tealeaves, they have to take them to the collection point as fresh. Otherwise the factory will not take it. So every 9 days, they have to go to collection point by bicycle, telling us "We have to sweat to earn."

In Muhoroni, there is an association of people living with HIV/AIDS. When two of the initiator's brothers and three of the sisters died of HIV/AIDS and by year 2000 the initiator had also tested HIV positive, the initiator started encouraging friends to save the people dying from HIV/AIDS. But by

bad luck eight of the initial 10 members died and only two of them remained. The other person was told by her husband to leave the group since they were dying. After realizing that the initiator was remaining alone, she once again started considering what she could do to save her neighbors. She has never given up for the first breakup. She started the current group to create awareness on HIV/AIDS. By 2002 she was staying in Kisumu. She commuted to Muhoroni on Saturdays and Sundays, targeting Sunday Services for awareness creation in Muhoroni. In the course of the awareness creation she met eight people with whom they shared what they had to do. The number of members has increased to 56 (18 years and above) and 13 children, and are now actively involved in HIV/AIDS related activities, including fighting against stigma, and income generating activities inclusive of revolving fund, etc.

Most impressive thing is the interviewee's policy; the way of taking care of orphans is different from the one recommended by the Government. The present prevailing policy about orphans is to discharge them from the orphanage to their original locality (in case of an orphanage in Homa-Bay, over 4 years old cannot stay there and are discharged to the home rural areas), since they believe orphanage is a special place different from the rural. Once they grow up in an orphanage, they may find difficulty to fit them in the rural context, back to the orphanage but eventually end up in street due to not enough capacity of most orphanages. But the interviewee wants to put up even their university to give them brighter future. For him, just giving a shelter as orphanage is not enough, rather depriving them of their future. Free primary education is good but still not enough if not given higher education. The institution to which he belongs has expanded quickly, starting with orphanage, establishing nursery, primary unit and then secondary unit. The institute is now expanding the secondary unit. Though there are supporters in a foreign country, the institute is well linked up with the communities supporting each other.

The above three stories are just a tip of huge iceberg to know if one goes in quest of human resources in this District. Human capital is the only unlimited and undried resource, which cannot be deprived of if committed. The presence of active CBOs and lead local persons including above examples is really strength in pursuing development of this District. If those stories, which may be defined as success stories, could well be shared among the people of Nyando, the fellow people in Nyando District could be encouraged to embark on the quest of development.

2.3.4 Proximity to Kisumu City

Kisumu is the 3rd largest city in Kenya with the population of 322,734[5] after Nairobi (2.1 million) and Mombasa (665,000). As not much investment has been done in Nyanza Province for decades, Kisumu itself has not well grown in terms of economy, rather elevated to the 3rd position with the mere population growth prevalent in most of the Nyanza area. However, since 2003 with onset of the current government, some investments started to come such as re-starting of the construction of provincial building, which had once stalled, flood protection in Kano Plain, etc. If Kisumu gets on the development, consequently the

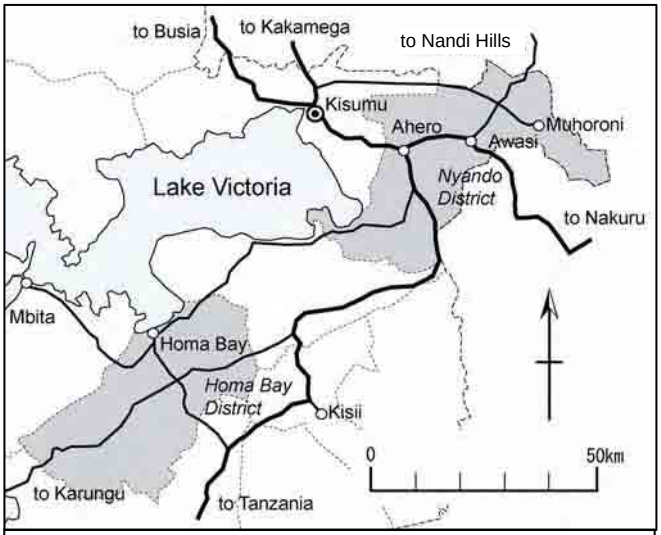


Figure 2.3.1 Kisumu City and Nyando District

[5] 1999 Population Census, Volume I

surrounding areas including Nyando District will also benefit from the opportunity that will be created by Kisumu.

At present, rice is marketed from Nyando to Kisumu town. Rice is milled within Ahero town and in NIB Ahero Pilot Scheme, and then most of the white rice is brought to Kisumu. Apart from rice, little commodities are at present traded to Kisumu. However, given the proximity, which is only 30 minutes driving between Kisumu and Ahero town, there exists the marketing opportunity for Nyando. As Nyando increases agriculture and livestock production, which are now consumed within the district, they can trade to the 3rd largest city of Kenya; Kisumu. The proximity to Kisumu City is a development opportunity for Nyando in terms of marketing.

2.3.5 Tree Planting Practices

The District belongs to the Victoria Basin forest-savanna mosaic eco-region, which is noted for its high species diversity and endemism resulting from the mixture of habitat types. These include more than 310 tree species etc. However, the forest habitats in the eco-region have been mostly replaced by savanna, farmland and pasture; the percentage of forest cover in the district has been on serious decline due to unsustainable utilization of the forest. On the other hand, small-scale forestation by farmers has been becoming common. In 2004, the total area of forestation was 60 hectares in the District, while it was only 0.25 hectares in 1990 (NEMA, 2005).

In the District, the major tree uses are fuelwood, construction and amenity, each of which, as it happened to be, accounts for 27% of the total use. Together with charcoal, firewood is the major sources of energy for households. According to a case study conducted in Nyando Division (Ministry of Environment and Natural Resources, 2005), all of sampled farmers answered that they used firewood or/and charcoal as the sources of energy. In the rural areas, therefore, most people plant trees in their own lands for home consumption or/and income generation. They plant most of the trees along the borders of and within their homesteads, standing at 53% and 39% of the total number planed respectively. On the other hand, they grow few trees in other places such as cropland, grazing area, etc. Although they are small scale, 87% of the farmers produce tree seedlings by themselves. The study also mentions there are some sub-locations where tree planting is less active than other sub-locations.

Eucalyptus plantation in homestead, Upper Nyakach Division

In Muhoroni and Upper Nyakach Divisions, forestation is more popular than in other Divisions because they have advantages of abundant rainfall and moderate temperature. In general, people usually use Eucalyptus for construction, Siala (Markhamia lutea) for firewood, and Euphorbia for live fence. According to a report of ICRAF (2005), farmers in Katuk Odeyo and Pap Onditi Locations in Lower Nyakach Division averagely plant 13 and 10 species of trees per household respectively. In addition to individual farmers, private companies plant trees. For example, Homa Lime Co Ltd in Muhoroni has its own nursery and tree plantation for firewood production. Forestry Department also plant trees in degraded areas for land rehabilitation.

In the District, there are 47 tree nurseries, which are owned by Forestry Department, CBOs, companies and individuals. The CBOs produce the largest number of seedlings, which account for 30% of total production, followed by Forestry Department with 26%, the companies with 25%, and

the individuals with 18%. In general, the CBOs produce tree seedlings mainly for income generation through sales, but some of them intend environmental conservation as well. Forestry Department has three nurseries in the District, which are located in Muhoroni, Miwani and Upper Nyakach Divisions. Although the one in Miwani is comparatively small, the other two are large and have capacity of more than 100,000 seedlings production per year. These nurseries sell tree seedlings to individuals at 5Ksh per seedling or more, while they distribute them to schools free. They also distribute seedlings free to individuals on the National Tree Planting Days, the first week of May. Among the companies, KenGen (Kenya Electricity Generating Co Ltd) has a large nursery in Upper Nyakach Division. It mainly produces indigenous tree seedlings and distributes to the people free to encourage forestation in the catchment area of Sondu Miriu River.

As mentioned above, most of the people in the District have been practicing small-scale forestation, and some organizations and individuals have been producing tree seedlings. This fact can be considered as one of the development opportunities, because it is rather easy to promote forestation when people are already familiar with practicing it. The existence of the practice indicates that people know somewhat about importance of the forest and the benefit from it. Therefore, people in the District will be able to accelerate tree planting activities if supports are given.

2.4 Trend of Available Fund and Disbursement Mechanism

Within the district, major funds available for development are categorized as: 1) government recurrent budget, 2) government development budget, 3) development funds assisted by donors, 4) Constituency Development Fund (CDF), 5) Local Authority Transfer Fund (LATF), among others. This sub-chapter refers to the past available funds, based on which future available budget is foreseen.

2.4.1 Government Recurrent Budget

Figure 2.4.1 shows the trend of recurrent budgets[1] for the FYs 2002/03 - 2005/06. The department which has got the highest budget is Education, for which after the introduction of free primary education the department received Ksh 5.6 million to 6.8 million for the last three fiscal years. Following the Education department is the Agriculture which budget of FY 2005/06 is Ksh 4.6 million. The budget of FY 2005/06 of the Agriculture is in fact increased very much, about two fold as compared to the previous 2 years. Ahero Multipurpose Training Institute has been receiving about Ksh 2 million or more per year. Out of the recurrent budget, the institute provides food to the users and the ensuing income is all remitted to the central government. Consequently, the recurrent budget is not enough for good maintenance of the facilities but just budget for catering for the services to the users.

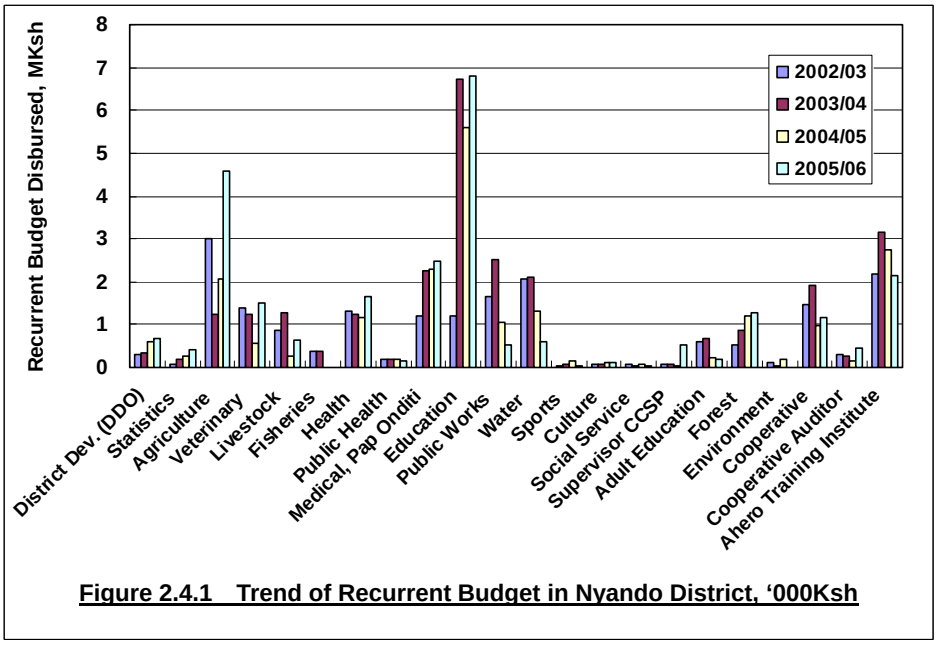


Figure 2.4.1 Trend of Recurrent Budget in Nyando District, '000Ksh

Apart from the Education, Agriculture and Ahero Multipurpose Training Centre, departments which have been receiving over Ksh 1.0 million per year are; Health, Medical Superintendent of Pap Onditi (District Hospital), Public Works, Water, Forestry and Cooperative, though the budgets of Public Works and Water were curtailed in FY 2005/06. Very little recurrent has been allocated to the departments under the Ministry of Gender, Sports, Culture and Social Services. Except for Adult Education Department, other departments such as Sports, Culture, Social Services, Supervisor CCSP (DANIDA funded project) under the ministry have been allocated less than Ksh 100,000 each in most of the years.

To roughly assess the effectiveness or shortage of the available recurrent budget, the recurrent budget per technical officer in FY 2005/06 is calculated (see Table 2.4.1). The table shows about Ksh 85,000 available per officer in the Department of Agriculture (however, it was Ksh 38,000 only in FY 2004/05), Ksh 115,000 in Veterinary, and about Ksh 48,000 in Livestock Production Department. Recurrent budget available per technical officer, including government nurses, in the Health sector is about Ksh 12,000. Education, which is allocated the biggest recurrent as a sector, has also high

[1] The recurrent budget referred to here does not include personnel emoluments (salaries and house allowance). It refers to AIES issued for service delivery and maintenance.

per-technical staff allocation, which is about Ksh 212,000. Public Works and Water were allocated about Ksh 28,000 and Ksh 24,000 respectively. Forest Department is given relatively high allocation per technical staff, reaching over 110,000. Though the departments under the Ministry of Gender, Sports, Culture and Social Services are given very small allocation per department, the available budget per technical person is not so low, reaching Ksh 180,000 per officer including the CCSP supervision budget.

Table 2.4.1 Recurrent Budget Available in FY 2005/06 per Technical Officer in Nyando, Ksh

Department	Budget in FY05/06	Nr. of Tech. Staff	Budget/ Officer	Remarks
Agriculture	4,599,994	54	85,185	
Veterinary	1,489,454	13	114,573	
Livestock	628,081	13	48,314	
Fisheries	0	7	0	No recurrent in FY05/06
Health & Public Health	1,822,028	148	12,311	
Education	6,791,918	32	212,247	
Public Works	523,770	19	27,567	
Water	616,000	26	23,692	
Forest	1,290,090	11	117,281	
Environment	0	1	0	Including NEMA activity
Sports & others	901,466	5	180,293	Including Adult Ed'n.

Source: Concerned District Departments and JICA Study Team

The recurrent budget has to cover office operation and maintenance, including telephone charges and all utilities. How much is spent in running office varies by department and the number of staff the department has. Usually, the more staff the department has, the less percentage it spends on running of the office. In case of Agriculture, it is estimated by the DAO that about half of the recurrent should go to running of the office, and the rest can be spent on general extension including expenditures on official travels. Taking this ratio into account, departments such as Agriculture, Veterinary and Livestock can only allocate Ksh 20,000 to 60,000 per technical officer per annum, which is not enough to discharge their duty. Other departments except Education, Forest and Sports also suffer from shortage of recurrent budget, making most of the officers remain in the office.

2.4.2 Development Budget for both Donor and GOK

Table 2.4.2 shows the development budgets actually disbursed to technical departments of Nyando District, which include donor funded budgets. Donors provided funds to National Agriculture and Livestock Extension Programme (NALEP), Rural Integrated Health Service, and Global Funds for health sector. GOK has also availed some development funds specially after the present Government came into power in December 2002. The Government has disbursed Ksh 54.6 million, Ksh 72.2 million, and Ksh 12.1 million for the last three years for the purpose of improving drainage in Nyando River basin. Public Works, as part of fuel levy, has been receiving some allocations which are spent on road maintenance (in this sense, it may be categorized under recurrent). The amount received has been Ksh 14 million to Ksh 28 million. However, as one can see the road situation especially in rural areas, the amount availed for the road maintenance is not enough for good maintenance of the roads.

Table 2.4.2 Development Budget Available from FY 2002/03 – 05/06, Ksh

DEPARTMENT	2002/03	2003/04	2004/05	2005/06	Remarks
Donor					
Agriculture, NALEP	1,465,000	1,722,000	2,774,000	4,543,000	SIDA
Health, SIDA RIHS	-	-	2,700,000	2,917,418	Rural Integrated Health Services
Health, Global Funds	-	-	3,235,967		
GOK					
Veterinary	-	-	1,000,000	-	Crush Pen Programme
Health	-	-	2,750,000	5,360,000	Wards construction, etc.
Public Health	-	140,000	60,000	280,000	Vector control screening of houses
Public Works	-	-	300,000	1,000,000	Office renovation
Public Works, Fuel Levy	*14,000,000*	*24,500,000*	*28,010,155*	*23,771,153*	*For road maintenance*
Water	-	54,600,000	72,220,000	12,068,350	Improving drainage, Flood control
Ahero Training Institute	-	3,300,000	-	-	Building renovation
Forest	-	1,000,000	1,300,000	1,070,000	Nursery establishment, etc.
Cooperative	-	325,000	1,500,000	800,000	Office renovation

Source: Concerned District Departments and JICA Study Team

2.4.3 Constituency Development Fund (CDF)

Each constituency receives an allocation every year based on 2.5% of ordinary revenues of Kenya raised. The CDF, which was established in 2003, is coordinated by the National Management Committee of the National Assembly as provided for in the CDF Act 2003. Each Constituency has a Constituency Development Committee (CDC), which is constituted and convened by the elected Member of Parliament (MP) and with a maximum of fifteen members. According to the Act the elected MP for every constituency shall be the Chairperson of the CDC unless he/she opts out in which case the Committee shall elect one amongst themselves to be the Chairperson. The CDC is supposed to identify and prioritize projects for funding under CDF. These CDCs report to the District Projects Committee, which is coordinated by the District Development Officer (DDO).

The current CDF Act 2003 does not allow for funding of women groups or self help groups as individual groups since CDF projects must be community owned and have a wider community benefit. The Act also does not allow for funding of religious or political activities. With this as pre-condition for administering CDF, each and every constituency is supposed to receive minimum of Ksh 20 million in principal, and according to the level of poverty an additional allocation can be made upon efficiently spending of the previously disbursed amount. As shown in Table 2.4.3, the disbursement has been increasing by year, and the three constituencies in Nyando District have received a total of Ksh 320 million including the allocation of FY 2006/07 for the last 4 financial years (a part of Nyando constituency falls under Kisumu District).

Table 2.4.3 Disbursement of Constituency Development Funds (CDF) in Nyando District, Ksh

Constituency	FY 2003/2004	FY 2004/2005	FY 2005/06	FY 2006/07*	Total
Nyakach	6,000,000	26,627,384	27,723,749	47,547,385	107,898,518
Muhoroni	6,000,000	26,583,709	34,322, 789	47,706,798	114,613,296
Nyando	6,000,000	26,538,416	17,161,205**	47,547,910	97,247,532
Total	18,000,000	79,749,509	79,207,743	142,802,093	319,759,345
Nyanza Province	192,000,000	883,110,135	1,142,356,878	1,533,947,924	3,751,414,937
% of Nyanza P. Allocation	9.4	9.0	6.9	9.3	8.5

Source: District Development Office, Nyando District; Ministry of Planning and National Development, 2006.

Note: * Allocation, ** For the year 2005/2006 Ksh 7,000,000 for Muhoroni Constituency was left at CDF National Headquarters for purchase of a grader.

The CDF funds in Nyando District have been largely allocated by CDCs to six main sectors with Education sector getting the biggest share and followed by Health sector. The number of projects by sector as at end of FY 2004/05 is shown in the table below with the total spending per sector. As per

project cost, the average ranges from about Ksh 417,000 to Ksh 1,415,000. It should be however noted that the actual number of projects funded could be more than 135 (23+34+78), if one considers the various schools receiving materials separately.

Table 2.4.4 Distribution of CDF Funds by Sector and Constituency in Nyando District, up to 2004/05

Sector	Nyando Constituency		Muhoroni Constituency		Nyakach Constituency	
	No. of Projects	Funding (Ksh)	No. of Projects	Funding (Ksh)	No. of Projects	Funding (Ksh)
Agriculture	1	3,799,215	0	0	1	700,000
Education	8	8,600,000	12	18,780,000	64	9,705,000
Health	7	13,150,000	10	3,970,000	2	3,565,000
Water	2	920,000	1	2,550,000	1	2,400,000
Roads & Bridges	0	0	1	950,000	1	330,000
Logistics	1	936,161	1	858,821	1	756,152
Bursary	2	3,200,000	1	2,462,738	1	350,000
Emergency	1	1,333,333	1	1,333,333	1	1,393,333
Others	1	500,000	7	1,722,488	6	3,990,000
Total	23	32,538,709	34	32,627,384	78	32,538,416
Budget per project		1,414,726		959,629		417,159

Source: District Development Office, Nyando District, 2005

2.4.4 Local Authority Transfer Fund (LATF)

The Local Authorities Transfer Fund (LATF) was enacted in 1999. Since enactment of the Fund to the end of FY 2004/05, a total of Ksh 17.1 billion has been disbursed to various Local Authorities countrywide. The Local Authorities are required to use at least 50% of the allocation for capital development. They are also required to prepare the Local Authority Service Delivery Action Plan (LASDP) in consultation with local communities/stakeholders. In this respect, LATF resources are available to communities as far as they can determine their use.

Nyando District has two town councils and one county council; Ahero and Muhoroni Town Councils and Nyando County Council. They get their finances through LATF, Cess and General Rate Fund (GRF), out of which they can spend some amounts in capital investment. Tables 2.4.5, 2.4.6 and 2.4.7 show the expenditures for the last four years by category. Among the items, Capital means investment projects which are for drainage improvement, road improvement, market facility improvement (including toilet construction), construction of dispensary, etc. As summarized in Figure 2.4.2, Ahero Town Council has spent about Ksh 640,000 to as high as over Ksh 2 million per year for the capital investment. Muhoroni Town Council has spent Ksh 2.2 million to over Ksh 4 million per year, and Nyando County Council has spent Ksh 6 million to over Ksh 8 million per year.

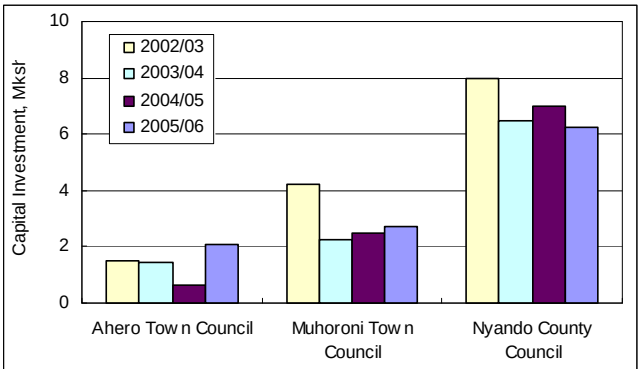


Figure 2.4.2 Capital Investment by Council

Table 2.4.5 Expenditures (in Ksh) for the Ahero Town Council for the FY 2002/03 to 2005/06

Item	FY2002/2003	FY2003/2004	FY2004/2005	FY2005/2006	Remarks
Capital	1,501,369	1,424,867	640,000	2,078,210	
Personnel	9,324,813	8,989,221	10,464,148	11,770,372	
Operations	5,162,701	5,141,882	9,380,380	6,433,525	
Maintenance	1,621,533	1,457,209	924,821	1,085,000	
Debt resolution	398,801	1,613,752	1,998,412	2,136,825	
Total	18,009,217	18,626,931	23,407,761	23,503,932	

Source: Ahero Town Council Offices; Republic of Kenya, Ministry of Local Government

Table 2.4.6 Expenditures (in Ksh) for the Muhoroni Town Council for the FY 2002/03 to 2005/06

Item	FY2002/2003	FY2003/2004	FY2004/2005	FY2005/2006	Remarks
Capital	4,194,922	2,245,016	2,500,000	2,744,977	
Personnel	3,702,559	7,053,793	7,492,652	7,162,825	
Operations[2]	2,271,992	3,775,057	2,225,000	3,705,000	
Maintenance[3]	1,128,423	282,696	1,007,000	843,000	
Debt Resolution	330,000	543,696	550,000	852,000	
Total	11,627,896	13,900,258	13,774,652	15,307,802	

Source: Muhoroni Town Council Offices; Republic of Kenya, Ministry of Local Government

Table 2.4.7 Expenditures (in Ksh) for the Nyando County Council for the FY 2002/03 to 2005/06

Item	FY2002/2003	FY2003/2004	FY2004/2005	FY2005/2006	Remarks
Capital	7,960,000	6,460,000	7,000,000	6,230,000	
Personnel	23,481,880	23,478,880	21,216,000	20,878,002	
Operations	14,633,223	13,892,667	5,114,000	9,370,,260	
Maintenance	4,656,200	6,354,788	343,000	1,328,960	
Debt Resolution	3,133,000	4,400,617	7,279,162	8,963,527	
Total	53,864,303	54,586,952	40,952,162	37,400,489	

Source: Nyando County Council Offices, 2005; Republic of Kenya, Ministry of Local Government

2.5 Major Development Actors in the District

Within Nyando District there are projects and programmes that are supported by development partners/ donors which make available funds for development. SIDA supports three development projects; Road 2000, Rural Integrated Health Services (RIHS), and National Agriculture and Livestock Extension Programme (NALEP). Aside from bilateral donor, there are number of NGOs both international and local. Following are the brief description of some of the development activities supported by donors.

2.5.1 Road 2000; SIDA supported Programme

In early 1990s GoK with assistance of development partners developed a road improvement and maintenance strategy under the generic name "Roads 2000" as part of the vision that all districts in Kenya would be covered by the new strategy by the year 2000. Unfortunately due to the prevailing political and economic difficulties in the 1990s, the strategy was only implemented in six districts under the support of DANIDA and SIDA. Under the new NARC government the strategy has been re-launched as part of the implementation of the Economic Recovery Strategy for Wealth and Employment Creation. The current plan is to have the Roads 2000 strategy implemented in all districts by the end of 2009.

SIDA has been supporting the strategy in 11 districts[4] in Nyanza since 2002. The districts have a total of 7,227 km of classified road network (11.3% of the national network) of which 556 km is surface dressed, 185 km is premix, 3,982 km is gravel, and 2,503 km is earth[5]. Most of the roads are in a poor condition. The Roads 2000 aims to bring 75% of the road network back to maintainable standard and under routine maintenance by the end of the programme in 2009. For the 11 districts in

[2] Operations costs include the following: traveling and subsistence allowance; postage; electricity bills; subscriptions to affiliated bodies such as Association of Local Government Authorities of Kenya (ALGAK), Lake Victoria Regional Local Authority Cooperation (LVRLAC), Association of Local Government Employers (ALGE); fuel; Insurance of vehicles; entertainment; printing and stationery; uniforms and clothing; sewage expenses; advertisements; hire of security and legal expenses.

[3] Maintenance costs include repair of markets; construction of public toilets; repair of tools and equipment; purchase of small tools (pangas, slashers etc.); maintenance of motor vehicles, furniture and repair of buildings.

[4] The 11 districts include Kisii Central, Gucha, Nyando, Kisumu, Siaya, Suba, Homa Bay, Rachuonyo, Nyamira, Migori, Kuria and Bondo.

[5] Ministry of Roads and Public Works, 2005. Inception Report of the Consultant Providing Technical Assistance to R2000 Nyanza Implementation. September 2005.

Nyanza, donor contribution will be Ksh 1,128 million while GoK contribution through the Fuel Levy will be Ksh 596 million during the four-year period July 2005 to June 2009.

Technical Assistance Consultants were appointed in July 2005 and have carried out a detailed review of reports and studies provided by the recipient organisations and by SIDA. They have come up with recommendations on the resources (human, physical and financial) required for implementation of the programme and a plan of action for the financial year 2005/2006 and 2006/2007. Training of engineers, and inspectors already started as of mid 2005 while training of contractors also commenced in 2006.

2.5.2 Rural Integrated Health Services

The Rural Integrated Health Services (RIHS) Programme is part of the on-going Health Sector Reforms in the country. The project is being implemented in seven districts in the country, namely Busia, Kajiado, Koibatek, Kuria, North and South Nandi and Nyando. In Nyanza Province it is being implemented in Nyando and Kuria Districts. For each District there is a budget for the various items. Initially it was supposed to be implemented up to 30th June 2003 with a total support of 75 million SEK (Ksh 600 million). The Programme has since then been extended from December 2003 to December 2004 at no cost extension; from November 2004 to June 2005 with additional resources amounting to SEK15 million (Ksh 120 million) and also another six months extension with additional resources amounting to SEK 15 million (Ksh 120 million). For Nyando District, Ksh 8,000,000 per year is allocated for priorities in the health sector identified by the District.

2.5.3 NALEP; SIDA Supported Program

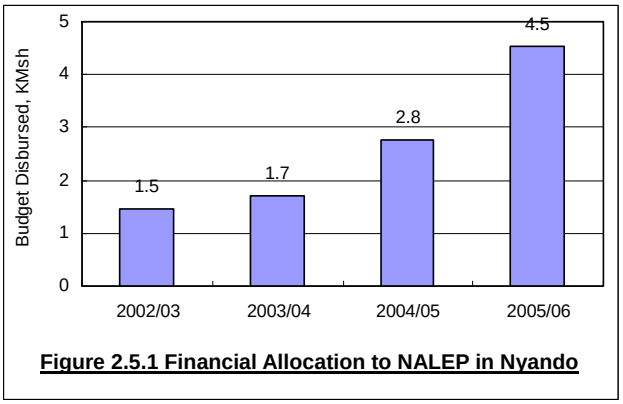


Figure 2.5.1 Financial Allocation to NALEP in Nyando

Phase one of SIDA supported NALEP started in 2000 and ended in June 2005. For the phase one years, the annual financial allocation to SIDA – NALEP in Nyando District was Ksh 1.47 million to Ksh 2.77 million (see Figure 2.5.1). The Phase two started in July 2005. The SIDA support for this phase 2 is Ksh 2.15 billion in total, and the allocation for FY 2005/06 is Ksh 431 million. Out of this, Ksh 171 million is used for purchase of vehicles, motorcycles, computers, etc. The GOK contribution in FY 2005/06 is Ksh 50 million which is in recurrent expenditure. NALEP allocation to Nyando District for FY 2005/06, is Ksh 1,647,609 for district headquarters and Ksh 2,995,391 for all the five divisions, totaling to Ksh 4.5 million.

NALEP is meant to support the implementation of the National Agricultural Extension Policy (NAEP). The programme was in response to the realization that much broader and more carefully differentiated strategies are required if extension is to reach its potential to reduce poverty among the rural poor in the country. It is based on the principle that all extension service providers must work together to empower farmers in their production as well as post-production and marketing endeavours. The NALEP framework provides for the improvement of collaboration and the formation of partnerships and the flow of resources into the agricultural sector. Main features of the programme may be summarized as: 1) extension pluralism through stakeholder fora, 2) promotion of local resource mobilization, and 3) focus on production for market and value adding among others.

The NALEP extension framework uses the Focal Area Approach (FAA). At this Focal Area level, Focal Area Development Committees (FADCs) are organized, under which Common Interest Groups

around crop or livestock enterprises or natural resource management are established. It also calls upon linking mechanisms promoting the establishment of Stakeholder Fora and Consultative Committees at the Focal Area level in line with the extension pluralism. Follow-up by the front-line extension worker is done mainly on progress by Common Interest Groups (but not on implementation of actions specified in the Farm Specific Action Plans nor on impact of implemented activities on farm income or household food security).

2.5.4 International and Local NGOs

There are 8 international and 20 local NGOs registered as operating in Nyando District. Some of the active NGOs include CARE Kenya, World Vision, AMREF, Osienala, Sustainable AID in Africa International (SANA), VI Agroforestry, MILD MAY, Omega Foundation, CREPP (Community Rehabilitation and Environment Protection Programme) and Christian Children Fund (CCF) among others. Some of the NGO and CBO programmes are involved in HIV prevention, AIDS mitigation, water supply and sanitation, environmental conservation, agriculture and fisheries. Some of the major activities are briefed as follows:

1) VI Agroforestry

VI Agroforestry is an International NGO, which was established in Kisumu in 2002. It is supported by individual Swedish people/Volunteers and SIDA. The Lake Victoria Initiatives Programme, which is a component of the organization, is funded by SIDA. The policy is that the organization should work with farmer organizations, which 1) should be developed into strong working independent organizations; 2) gender involvement in all programme activities and staffing and 3) focus on poverty alleviation/improved livelihoods. The target group is farming community-small scale farmers around the Lake basin with acreage of 2 to 5 acres of farmland. VI Agroforestry supports the following activities in Nyando District:

- Dissemination of agroforestry knowledge through extension approaches and other participatory approaches;
- Tree establishment (individual nurseries, direct sowing);
- Soil fertility improvement (agroforestry species and organic farming);
- Soil conservation and rehabilitation (gully control, protection of river banks, use of enclosures) in collaboration with other stakeholders; and
- Income generation activities.

2) CARE Kenya

Care Kenya started operating in Nyando District in a project involving community savings in 2001. From July 2004 care Kenya embarked on a five-year project in Nyando District (Nyando and Lower Nyakach Divisions under the framework of its “Improved Agriculture for Smallholders in Western Kenya (TASK) Component”). This component is meant to make farmers appreciate farming as an economic activity. Food for work is used to open up land for farm based economic activities. They are also focusing on revival of rice production in West Kano; introduction of horticultural crops through contract farming and improving production of tree products. In Nyando Division the project activities are being implemented in Kakola , East Kano, Onjiko, Kochogo and Wawidhi Locations while in Lower Nyakach Division they are operating in North Nyakach Location. The main activities are:

- Promotion of commercially oriented agriculture including rice cultivation;
- Food security (cassava, early maturity maize varieties);
- Training of farmers on leadership skills, agronomic practices and marketing;

- Promotion of mango farming for domestic consumption and for sale;
- Promotion of eucalyptus (clonal variety from South Africa, as of October 2005 11 woodlots of 300 trees have been established by farmers); and
- Vegetable production, including water melons as a cash crop.

For rice production, CARE Kenya has assisted farmers to access seeds of improved varieties such as basmati. They have bought basmati seeds worth Ksh 110,000 for Gem Rae Scheme and another one for Arombo Scheme. The condition of giving the seeds is that the farmers will return double of the seed given to CARE Kenya. CARE Kenya has also initiated and supported organization of a Rice Stakeholders Forum, formation of a Rice Stakeholders Committee comprising 12 members (representatives from Arombo, Gemrae, Giko and Awach rice schemes, MoA-Chair, MWI, NIB and Care Kenya).

3) MILD MAY

MILD MAY is a UK based international NGO, specialized in improving the quality of life of adults and children living with or affected by HIV/AIDS, primarily in resource-limited countries and communities. The organization works with in-country partners to empower healthcare providers to respond more effectively to the challenges of HIV/AIDS. The operation is becoming increasingly strong in sub-Saharan Africa. In Kenya, the MILD MAY works in Nyanza Province to sensitize the wider community and address the need for regular psychosocial activities to support those infected and affected by HIV/AIDS. MILD MAY utilizes existing relationships with selected health professionals in all the 11 districts in Nyanza Province to scale up community-based initiatives in partnership with the Kenya Ministry of Health. Currently, the organization is leading home-based care (HBC) programme targeting people living with HIV/AIDS (PLWHA).

The HBC programme in Nyando started with a Needs Assessment, a baseline survey, in December 2003, followed by planning for all the 12 districts in Nyanza province. The implementation was commenced in June 2004 with sensitization of health workers who are government officers working in different health facilities under MOH. Number of officers sensitized in HBC is around 60 (not necessary they were trained in HBC), and they started identifying CBOs with a mapping. The trained government health workers started administering a net 11-day training course to community health workers (CHW) in March 2005, and as of end 2005 about 210 CHWs have been trained in the 5 divisions of Nyando district. MILD MAY is the funding sponsor for the HBC programme, which gives Ksh 250,000 per month as the ceiling to the Nyando District.

4) World Vision

World Vision started working in Lower Nyakach in 2003 in a 15-year development project involving 1) Water and Sanitation: drilling of boreholes, training of pump attendants and pump attendant committee, 2) Food security; training of CBOs dealing with food security and livestock in collaboration with MoA, 3) Support to Schools: provision of building materials and desks, 4) Health in general and 5) HIV/AIDS; awareness and support to PLWHAs.

CHAPTER 3 DEVELOPMENT PLANNING

This chapter exerts the develop planning based on the previously discussed issues and also the outcome from a series of participatory workshops. The participatory workshops started at the district level as the kick-off of this Study. It was followed by divisional level analytical workshop, and went into a series of community level workshops. From there, it started going back once again to divisional level and then district level which were now planning stage. The planning here follows the outcome from the workshops in terms of priority settings for the development approaches and strategies, and combines the priority settings with what the Study Team recommends in terms of socio-economic and spatial development frameworks, development timeframe, development programmes and projects, etc.

3.1 Development Vision, Guiding Principles and MDGs Relevance

3.1.1 Development Vision

In Nyando District, we can see diversified economic activities depending on the location from lowland to highland. Some of the lowlands, for example Miwani, Nyando, and Lower Nyakach Divisions, are prone to flood but in turn the areas are given the opportunity of growing rice which is a very good cash crop. In the northern parts of the District there is another cash crop that is sugarcane. In higher areas such as north-eastern part of Muhoroni and Upper Nyakach Division, climate tends to be cool and more rainfall can be expected. Therefore these areas are enjoying fruit trees, horticulture crops, and graded cattle have been introduced and doing well.

Given the diversified natural conditions and different economic activities already taking place, the Study Team suggested the district stakeholders, who participated in district planning workshop and through discussions, a preliminary development vision[1] that is "A District Enjoying Diversified Economic Activities through Effective Utilization of Available Resources". With reference to the vision, the stakeholders extensively discussed and finally reached the development vision of **"A District Enjoying Diversified and Sustainable Socio-economic Development"**.

3.1.2 Guiding Principles

Taking into account all the issues raised during the participatory workshops and based on what the Team identified as development challenges and opportunities, the Study points out the following as guiding principles which can lead the people of Nyando to the district development vision "A District Enjoying Diversified and Sustainable Socio-economic Development". The guiding principles elaborated below are the issues that are to be undertaken throughout the planning process.

1) Promotion of Diversified Economic Activities applicable to Each Circumstance

The lowest elevation in Nyando is 1,134 m while the highest is 1,801m, showing big elevation difference of 667 m. Higher parts show up in Muhoroni and Upper Nyakach Divisions where they are blessed with rich rainfall, reaching sometimes over 1,500 mm. Parts of Nyando and Miwani Divisions are often hit by flood while Lower Nyakach and eastern part of Nyando Divisions suffer from drought. Thus, natural conditions vary very widely within this small District which is in the shape of rectangle, say 40 km along the longer side and 30 km along the shorter side.

Present economic activities also vary from division to division. Sugarcane prevails in the northern parts of the district, rice in low lands, horticulture in higher areas, upgraded milking cattle also in

[1] At first, the Study Team asked stakeholders during district analytical workshop what the vision as district should be. The suggestions were not beyond where they came from; namely, a health officer suggested 'a district free from HIV/AIDS'. Therefore, the JICA Team gave an idea for the vision which can overarch different sectors.

higher areas, and Lower Nyakach and Miwani Divisions are very much suffering from low economic activities, the reason for which in Miwani Division is the closure of Miwani Sugar Factory. Lower Nyakach is less blessed with natural resources; soils are poor and rainfall is little. This resulted in migrant works of the people. Rate of orphans in Lower Nyakach Division is remarkably high, for which one out of every five primary pupils is now total orphan and both total and partial orphans consist half of all the public primary pupils. HIV/AIDS prevalence must be very high in Lower Nyakach. Taking into account all these wide range of different conditions, this Study recommends the promotion of diversified economic activities which should be programmed based upon the diversified natural and socio-economic conditions.

2) Cash Crop Enhancement

Food production in Nyando District is not enough to be self-sufficient. According to the data given by District Agriculture Office, the average production of the cereals per family per annum is less than 400 Kg and the production of food crop inclusive of sweet potatoes and cassava, which can supplement the cereal shortage, is at most 500 Kg per family. Provided that a typical family needs about 750 Kg of food crop per annum, many people in Nyando District must be in food shortage. However, this does not mean that the people cannot produce self-sufficient food but indicates there are good cash income sources. They produce sugarcane and rice[2] among others and sell them, and buy cereals still leaving some margins in their hand.

Until early 1990s, many people used to grow cotton which once occupied as much as 4,000 ha. Though the cotton production is now very dormant, one may say many people in Nyando have been producing cash crops since long time ago. Proximity to Kisumu, the third largest city in Kenya, must have also been directing the people to produce cash crops at least to some extent. In higher divisions, some farmers started growing traditional cash crops. For example, coffee can be found in Muhoroni Division, and tea and coffee in Upper Nyakach Division. Taking all these into consideration, cash crop enhancement should be viewed as one of the strategies toward realizing the development vision.

3) Improvement of and Diversification from Sugarcane Industry

Sugarcane occupies as much as 24,000 ha as of 2005, which is much bigger than maize planted area of about 10,000 ha. Though sugarcane takes 18 months until the first harvest, it fetches high cash, say over Ksh 100,000 per hector in gross. Sugarcane requires less labor to grow and also has an advantage from the viewpoint of soil conservation. As it covers soils throughout a year, soil erosion can be minimized. However, an issue is now in sight, which is the sugar trade liberalization among COMESA countries to come in February 2008. Upon this liberalization, sugar from Sudan, which is said to be as low as one-third in the production cost, might start flowing into Kenyan market. The future for the sugarcane is somewhat grim. Short maturity, which needs only about a year to mature, should be researched and made available to cope with the cheaper sugar coming from the neighbor.

Also, diversification from the sugarcane monoculture should be explored. Cotton production may have a possibility to establish once again. Cotton price is in principle decided with reference to the international market price of lint at Liverpool. Therefore, deciding the farm-gate price is mostly out of the farmers' hands and even out of the ginnery factory. Given the rain-fed potential yield of 2 t/ha with the present prevailing lint price of Ksh 22 per Kg, one hectarage cotton field can yield about Ksh 44,000 in gross. This value may not look attractive. Also, competition at the level of textile and garment cannot do well against China, India, Bangladesh, etc. which produce textile and garment at much lower price than Kenya. However, one of the advantages of the cotton is to generate

[2] Rice in this area has been a cash crop since it was introduced. Elder generation does not consume rice even nowadays but sell it and buy maize flower instead, though young generation started eating rice as staple food.

by-products such as oil, oil cake, and soap. Therefore, if the cotton is processed in the locality rather than just sold to a ginnery factory, farmers could fetch attractive profit through the by-products.

Beef production may also be one of the diversified economic activities from sugarcane. Given the high temperature and humid climate, graded cattle for milking can hardly survive but beef cattle could do well to some extents. Large grasslands lie in some parts of the sugar belt, for example in Miwani Division. As Miwani Sugar Factory is not operational as of 2005, there are dormant farmlands which had been growing sugarcane. The dormant farmlands have turned rangelands in some cases where almost free grazing can be seen. Given the rich rainfall, enough fodder can be grown with which promotion of beef cattle could also be one of the alternatives substituting the sugar industry.

4) From Extensive Livelihood under Flood to Intensive Livelihood Free from Flood

Kano Plain, a part of which falls in Nyando District, is very prone to flood. Nyando River running from the east to the west of the district and then draining down to Lake Victoria has given floods to proximate areas along the river course. Most of the flood-affected areas are located in the western parts of Miwani and Nyando Divisions. The flood over Nyando River has taken place once every 3 to 5 years. Flood damages people's livelihood, sometimes sweeps away even planted crops, and also worsens sanitary condition. It damages shallow wells, and sometimes collapses toilet facilities constructed on black cotton soil which is very susceptible to sinking down by saturation.

On the other hand, there are some people benefiting from the flood. Some farmers have been co-existing with flood in agriculture production. Flood carries fertile silt which supplements the fertility to the flood prone farmlands. There are dikes starting at Ahero Town and running both side of the river down the reach of about 1.5 Km. Farmers residing behind the dike are now free from the flood, but they claim they need to supplement fertility by means of cow manure and sometimes chemical fertilizer, which were not the case before the construction of the dikes, because the river no longer carries fertile soils to their farmlands.

Flood control and protection by means of infrastructure requires river training, dike construction, surcharge storage dam construction, drainage construction, etc. These investments require large capital, for which at least for sometime the development programme may not be able to foresee. Likewise, given the currently practiced extensive agriculture, one should not underestimate the benefit in agriculture accrued from the flood. Therefore, flood protection in a shot-term development should be considered only for public institutions such as schools, clinic, orphanages, etc. Remaining areas which are mostly farmlands should remain as they are, which can also benefit from the flood.

In the mid to long-run, however, flood control and protection by means of infrastructure should be programmed. The flood protection and control should be programmed in line with the transformation from extensive agriculture to intensive agriculture. Under intensive agriculture, farmers use chemical fertilizers, producing higher yield in a smaller plot. As generation passes on, the farmlands are further divided into smaller pieces amongst the heirs. Smaller pieces of lands need intensive agriculture, which in turn should be free from flood. Drainage in small to medium scale can be programmed even from the onset of the development programme but dykes and dams should come sometime later, by following the arrival of the intensive agriculture.

5) Promotion of Safety Net Strengthening

High rate of orphans is a critical issue in the District; total orphan who has neither father nor mother consists of 12 percent of all the primary pupils, and partial orphan who lost either farther or mother consists of 25 percent as of December 2004. Most of the orphans are taken care of by relatives, clan members in the community and orphanages in cases. Most of the orphans are believed caused by AIDS related death. HIV prevalence in pregnant women is now about 18% as of 2006. Though the

prevalent is already in a declining trend, still there have to be a lot of cares given to PLWHA.

To cope up the issues of orphans and HIV/AIDS, needless to say public intervention should be put in place; for example, establishment of VCTs and patient support centers addressed as one of the strategies under HIV/AIDS approach during the district planning workshop. Faced with the limited resources, however, we may have to understand that the ones who lastly take care of orphans and vulnerables and PLWHAs are the community members. Therefore, aside from the public intervention, safety net for the community should also be strengthened. This safety net strengthening should accompany livelihood improvement wherever it is possible. Without livelihood improvement, community itself may become unable to support the vulnerables. Income generating activities where possible should be promoted in line with the safety net strengthening.

3.1.3 MDGs Relevance

In September 2000, 189 countries including Kenya adopted the Millennium Declaration. Since then, Kenya has initiated the implementation process for the MDGs, and undertook an assessment of Kenya's performance in relation to each of the eight MDGs and issued a report in July 2003. The report indicates that there is high potential to meet some of the goals such as goal 2 (Achieve Universal Primary Education) and Goal 6 (Combat HIV/AIDS, Malaria and Other Diseases). However, for the rest of the goals, the report said that the GOK needs to stop the usual business and embark on a well thought-out planning process aimed at putting the country on track towards realizing the goals. Accordingly, the MDG based planning process in Kenya was officially launched on 12th May 2004 to demonstrate the government's commitment to reach the MDGs. In line with this, the district planning should refer to the status of the MDGs to clarify which areas to be emphasized more.

MDGs are composed of eight goals which are summarized in the following table with the prospects to achieve, in a five scale ranging from very high to very low with fair being the center, if the current situation continues up until 2015. Taking into account the present situation already discussed in the earlier chapters, statements indicated in the Assessment Report of 2003 may be once again repeated with specific situations to the district as follows:

- With regard to Goal 1 "Eradicate extreme poverty and hunger", the prospect to achieve the target, which is to halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day, may be very low. Though the base data of Nyando in 1990 is not available, the poverty of the national average has increased from 45% in 1992 to 56% in 2002, and is now projected to increase to 66% in 2015[3]. With reference to the community workshops arranged under this Study, all the 11 communities have addressed life has been becoming difficult, implying poverty has continuously worsened.

- On the other hand, another target under the Goal 1 "Halve, between 1990 and 2015, the proportion of who suffer form extreme hunger" can be achieved or already negative statements from communities or from health officers have hardly been reported. However, one thing which is arising now is HIV/AIDS related orphans and vulnerable children. Unless those OVCs are well taken care of, they may start suffering from extreme hunger indicated by under-weight or stunting condition, which may adversely affect the achievement.

- Goal 2 "Achieve universal primary education" can be most probably achieved by 2015 with the free primary education being strongly supported by the Government. The target says "Ensure that by 2015, children everywhere, boys and girls, will be able to complete a full course of primary schooling." The present gross and net enrollments are already 100%, but this does not

[3] Millennium Development Goals, Status Report for Kenya, 2005

necessary entail the "completion of the full course of primary schooling" since there are still dropouts as indicated by the fewer number of standard 8 pupils in the Figure 3.1.1. Though exact drop out ratio is not available, most of them are orphans, so that without supports to those OVCs, the achievement of the goal may be jeopardized.

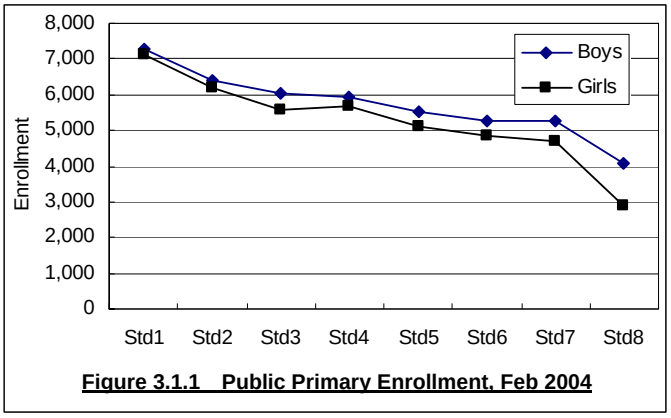


Figure 3.1.1 Public Primary Enrollment, Feb 2004

- Goal 3 "Promote gender equality and empower women" can also be achieved by 2015 in terms of primary education and may be achieved in terms of secondary education. Though the gender disparity becomes more as they progress the class, the difference is less than 10 percent in terms of numbers. With the government policy being put and supports to girl OVCs who have to take care of siblings, younger brother and sisters, the goal could be achieved.

- Goal 4 "Reduce child mortality" looks very difficult to achieve. The target is "Reduce by two-thirds, between 1990 and 2015, the under five mortality rate", while the district wide under-five mortalities[4] over periods are: 305 in 1969, 268 in 1979, 233 in 1989, and 212 in 1999 according to census results. Declining trend can be seen but the progress may not be enough. The base data for the MDG can be the mortality rate in 1989 which was 233, and therefore the mortality rate should be reduced to 78 by 2015. Taking into the current upheaval of malaria, which affects children's morbidity and mortality, it seems very difficult to achieve the goal unless otherwise strong support to vector control is put in place.

- Goal 5 "Improve maternal health" may also be difficult to achieve. Though precise data is not available in Nyando District, the nation wide average of maternal mortality per 100,000 has changed from 670 in 1990, 590 in 1998 and 414 in 2003 (reduced by 38% from 1990). Though it has continuously reduced at the national level, the target addresses "Reduce by three-quarters (75%), between 1990 and 2015, the maternal mortality ratio", which is still far from the past achievement.

- Goal 6 "Combat HIV/AIDS and other diseases" has been already achieved in terms of prevention and control of HIV/AIDS expansion while as per other diseases especially for malaria it seems very difficult to achieve. The target of the latter part is "Have halted by 2015, and begun to reverse the incidence of malaria and other major diseases". Malaria out-patient morbidly is now increasing from 43,963 cases in 2000 to 169,337 cases in 2004.

- Goal 7 is "Ensure environmental sustainability". With regard to Target 1 "Integrate the principles of sustainable development into country policies and reverse the loss of environmental resources", there are many community tree nurseries and lots of communities have been engaged in tree planting. They are already accustomed to tree plantation to greater extent. Given the relatively rich rainfall, the loss of environmental resources could be reversed, and thereby the target may be achieved. Target 2 addresses drinking water in that "Halve, by 2015, the proportion of people without sustainable access to safe drinking water". The ratio of poor household without access to safe water was projected at 62.5 percent[5] in 1997 for Kisumu (at this time, Nyando was a part of Kisumu). As of 2004, the ratio is reported by District Water Office at

[4] The mortality rates in 1969, 1979, 1989 are for Kisumu district which then included Nyando, and the rate in 1999 is solely for Nyando district. Nyando district was curved out from Kisumu in 1999.
[5] The First Poverty Report Vol. I, 1997

55 – 60 percent, which has not been reduced much for the last 7 years. Since water facility establishment requires substantial investment, the target would not be achieved should great deal of investments do not come.

- Goal 8 addresses "Develop global partnership for development" for which the target is "In cooperation with developing countries, develop and implement strategies for decent and productive work for youth." Though this target does not specify any numerical achievement, with the sign of present economic recovery one may see the possibility of the target to be achieved. Target 2 says "In cooperation with the private sector, make available the benefits of the new technologies, especially information and communication." This can be talked by number of phone subscribers. Since cellular phone is becoming familiar, this target will be achieved.

In sum, specific efforts addressed below will be required to get the MDGs close to the achievement:

Goal 1 (poverty); Present dominant industry which is agriculture be strengthened, and value addition also be undertaken. As well income generation be promoted.

Goal 4 (child mortality); Diseases affecting child mortality such as acute respiratory infections, diarrhea, measles, malnutrition and malaria be well addressed in the health sector. Specially, malaria combat be strengthened.

Goal 5 (maternal health); Reproductive health entailing family planning, antenatal care, clean and safe delivery, essential obstetric care, postpartum care, new born care, and post abortion care be strengthened.

Goal 6 (malaria); In response to the child mortality, measures to put malaria under control be put in place such as ITN, sensitization, vector control.

Goal 7 (environment); To increase the number of people able to access safe water, bore holes and shallow wells be constructed in their vicinity, which will need financial assistance from the Government, donors, NGOs, etc.

Table 3.1.1 Millennium Development Goals with Achievement Prospect in Nyando

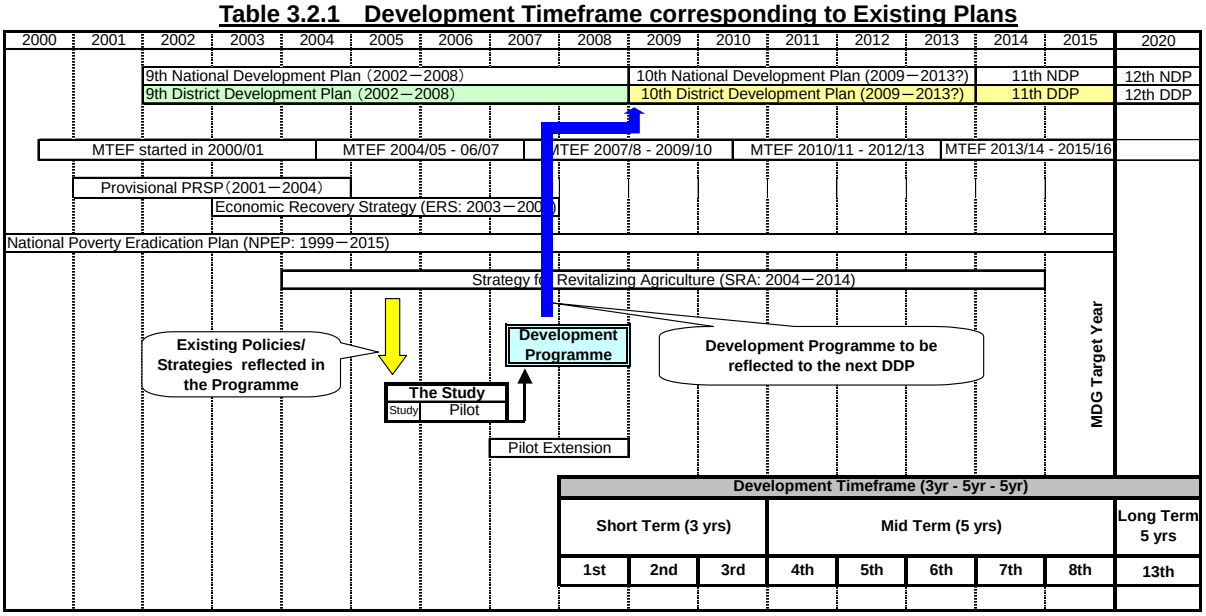
Goal	Target	Prospect
1. Eradicate extreme poverty and hunger	Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.	**Very low**
	Halve, b/t 1990 and 2015, the proportion of who suffer form extreme hunger.	**Very high**
2. Achieve universal primary education	Ensure that by 2015, children everywhere, boys and girls, will be able to complete a full course of primary schooling.	**High**
3. Promote gender equality and empower women	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015.	**High**
4. Reduce child mortality	Reduce by two-thirds between 1990 and 2015, the under five mortality rate.	**Very low**
5. Improve maternal health	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio.	**Low?**
6. Combat HIV/AIDS and other diseases	Have halted by 2015, and begun to reverse the spread of HIV/AIDS.	**Done**
	Have halted by 2015, and begun to reverse the incidence of malaria and other major diseases.	**Very low**
7. Ensure environmental sustainability	Integrate the principles of sustainable development into country policies and reverse the loss of environmental resources.	**Fair**
	Halve, by 2015, the proportion of people without sustainable access to safe drinking water.	**Low**
	Have achieved, by 2020, significant improvement in the lives of at least 100 million slum dwellers.	**Not Applicable**
8. Develop global partnership for development	In cooperation with developing countries, develop and implement strategies for decent and productive work for youth.	**Fair**
	In cooperation with the private sector, make available the benefits of the new technologies, especially information and communication.	**Fair**

Source: Millennium Development Goals, Status Report for Kenya, 2005, and JICA Study Team

3.2 Development Timeframe and Phasing

Time Framework should be defined, composed as it is of short, medium and long terms, when preparing any development plan. To define short, mid and long term frame, the Development Programme prepared under this Study should refer to the existing development plans and broader development commitment such as MDGs. Those that the Study should refer to are schematically shown in the following figure with the timeframe on which this Study operates.

Table 3.2.1 Development Timeframe corresponding to Existing Plans



This Study presents the final development programme in mid of year 2007 after feeding back all the lessons from the pilot programme implementation. Therefore, year-one of the Development Programme should start in 2008 which corresponds to the last year of the current national and district development plans. Short-term development is programmed to cover 3 years from year 2008 to 2010, during which urgent and focal programmes should be undertaken. Then followed is the mid-term timeframe covering the next 5 years period from 2011 to 2015, the last year of which corresponds to the target year of MDGs. The long term is set to cover the next 5 years, covering year 2016 to 2020.

- Short-term: from 2008 to 2010, 3 years
- Mid-term: from 2011 to 2015, 5 years, corresponding to the target year of MDGs
- Long-term: from 2016 to 2020, 5 years; namely, totaling the terms to 13 years

How long the next development plan covers is yet known[6] as of 2005. However, provided that the next plan follows standard development term, which is 5-year, it would run from year 2009 to year 2013, and therefore the completion is correspondent to the 6th year of the District Development Programme prepared under this Study.

Year 2007, one year before the year-one of the shot-term development, should serve for extension of pilot programmes/ projects which were carried out in 2006. The extension of the pilot should also be foreseen in year 2008 which rolls over on the year-one of the short-term development. In the short-term development, focal or urgent programmes/ projects are also put in place. In this sense, most of the pro-poor targeting programmes that can be started by utilizing locally available resources or easy to have donor supports are of course placed in the short development term.

[6] The current national and district development plan covers 7 years, which is composed of 2 MTEF budgeting cycles with one-year roll over, because it was meant to address the medium term poverty reduction challenges over the first half of the NPEP. Otherwise, the national and district development plans could have followed usual 5-year development.

Towards mid and long term developments, value addition to the primary products such as crops, fruits, livestock, and fishes should be considered. Given already high population density, one may say without value addition the economy cannot keep growing in terms of per-capita economic development. Infrastructure components that cannot be handled by community members are programmed from mid term to long term since it may take some time to arrange the necessary fund.

3.3 Socio-economic Framework

This Study builds up a socio-economic framework to give basis for clarifying the priority development alternatives. Socio-economic framework is defined as to describe the socio-economic situation of the target area in the target year by using several indicators[7]. Population projection consists of the basis of the socio-economic framework. Based on the projected population and available data, gross regional income per capita is projected from 2004[8] to the target year of 2020 (16 years). To achieve positive growth per capita, the production increment in economic term should not be less than the population growth. Some development scenarios are examined in the course of building the framework.

3.3.1 Population Projection

Based on the latest census of 1999, Analytical Report Volume VII made population projections taking into account past trends of mortality and fertility plus the effect of HIV/AIDS. The Report estimated the population up to year 2010. At the time of year 2010, the population growth ratio was estimated at 2.001 percent per year. With this population growth ratio, following table projects the population of Nyando District and by division. The projected population is to increase to 482,498 in year 2020 which is the end year of the Programme. This means the population is to increase by 26 percent from the onset year of the Programme which is 2008 (or 38% from the year 2004 for which most of the production data are available, and hence forms the base year of the projection of the future production discussed below). As per population density, it is estimated at 325 persons per km^2 as at year 2008, and this is to increase to 413 persons per km^2 as at the end year of 2020.

Table 3.3.1 Population Projection in Nyando District over the Plan Period

Year			2004	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Distirct		Population	349,419	357,393	380,279	388,002	395,767	403,687	411,766	420,007	428,412	436,986	445,731	454,652	463,751	473,032	482,498
		Density	299	306	325	332	339	346	352	359	367	374	381	389	397	405	413
		Increment ag/2004	1.00	1.02	1.09	1.11	1.13	1.16	1.18	1.20	1.23	1.25	1.28	1.30	1.33	1.35	1.38
Division	Population	Nyando	75,155	76,871	81,793	83,454	85,124	86,828	88,566	90,338	92,146	93,990	95,871	97,790	99,747	101,743	103,779
		L/ Nyakach	57,373	58,682	62,440	63,708	64,983	66,283	67,610	68,963	70,343	71,751	73,187	74,652	76,146	77,669	79,224
		Miwani	67,604	69,147	73,575	75,069	76,571	78,103	79,667	81,261	82,887	84,546	86,238	87,964	89,724	91,520	93,351
		Muhoroni	73,919	75,606	80,448	82,082	83,724	85,400	87,109	88,852	90,630	92,444	94,294	96,181	98,106	100,070	102,072
		U/ Nyakach	75,367	77,087	82,024	83,690	85,364	87,073	88,815	90,593	92,406	94,255	96,141	98,066	100,028	102,030	104,072
	Density	Nyando	301	308	328	335	341	348	355	362	370	377	385	392	400	408	416
		L/ Nyakach	314	321	342	349	356	363	370	378	385	393	401	409	417	425	434
		Miwani	300	306	326	333	339	346	353	360	367	375	382	390	398	405	414
		Muhoroni	221	226	240	245	250	255	260	265	271	276	282	287	293	299	305
		U/ Nyakach	428	438	466	476	485	495	505	515	525	536	546	557	568	580	591

Source: JICA Study Team based on Analytical Report Volume VII of Census 1999

3.3.2 Estimation of Gross Regional Income per Capita

Estimation of gross regional income per capita (or household income per capita) is based on available data that are the annual reports of the District Agriculture, Livestock, Fishery, among others, and the fact sheet of Nyando District Development Plan (2002-2008). As the starting point of the framework, the gross regional income per capita in 2004 is estimated. Using the above data, firstly the gross production values of agriculture and others are estimated. The products include cereals, legume, root

[7] T. Hashimoto (2004), "Competitive Edge for Development Consultants", Engineering and Consulting Firms Association, Japan (ECFA)

[8] Though the development programme starts in 2008, the year for which most data is available during the Phase 1 study is 2004. Therefore, the base year of building socio-framework is 2004.

crops, vegetables, fruits, cash crops such as rice, sugarcane, groundnuts, cotton, livestock products such as meat, eggs, honey, hide and skin, and fish.

Then the net income of the agriculture production is estimated multiplying the gross value of each product by net income ratio. The net income ratio of each product is estimated based on the field survey of the Study Team. Then the data on contribution to household income shown on the District Development Plan is used to estimate the incomes of other categories or sectors defined as agriculture, rural self-employment, wage employment, urban self-employment and other, whose contributions to household income in 2004 are 52%, 10%, 25%, 10%, and 3% respectively (In Homa Bay District, these percentages are 52%, 15%, 3%, 23%, and 7% respectively).

Lastly, the gross income per capita is estimated by dividing the total household income by the rural and urban population. The monthly gross incomes per capita of district total, rural and urban populations are estimated at Ksh 1,105, Ksh 913, and Ksh 1,680 respectively (In Homa Bay, Ksh1,083, Ksh907, and Ksh1,787 respectively). These incomes per capita are lower than the poverty lines of Ksh 1,562 and Ksh 2,913 for rural and urban areas respectively defined in KIHBS-2005/06. Since the poverty incidence in Nyando District is estimated at 48% by KIHBS-2005/6 (or 61% in 1997 WMS-III, and 69% and 60% in rural and urban areas of the district by the District Development Plan, 2002), the level of the income per capita estimated here is within the possible range.

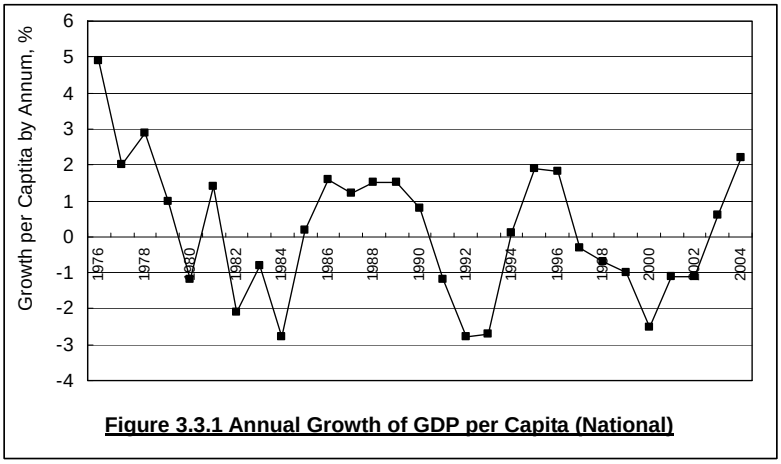


Figure 3.3.1 Annual Growth of GDP per Capita (National)

The increase of gross regional income is projected and targeted to improve the living standard of the district population as well as to keep up with the population growth. Here we define two primary cases: 1) the Target Case and 2) the double growth of the Target Case; called 2 x Target Case. The Target Case sets the growth per capita almost equal to the highest experiences of national level per capita growth ratio. As the Figure 3.3.1 indicates, the optimal annual growth of GDP per capita in Kenya for the last two and half decades is around 2 %. Therefore our target for the Target Case sets the annual growth per capita at 2 percent. This translates into about 4 percent growth per annum of gross regional product as the population growth rate is now projected at about 2 percent per annum.

2 x Target Case is actually a reference towards challenging the achievement of the MDGs. As the Table 3.3.2 indicates, the average incomes for the Target Case at the target year 2015 and 2020 are Ksh1,382 (Ksh1,142 for rural and Ksh2,100 for urban) and Ksh1,526 (Ksh1,261 for rural and Ksh2,319 for urban) respectively. It means that both target incomes for rural and urban are below the poverty line, which would mean that even in year 2020 after Nyando has grown up at a pace of 2 percent per annum per capita, still more than half of the Nyando people would remain below the poverty line.

The 2 percent of the growth per capita applied under the Target Case is far from the achievement of the MDGs, though even this 2 percent is referring to the optimal growth attained for the last two and half decades in Kenya. Therefore, the double growth case, which is 4 percent growth per capita per annum, is also included in the simulation. This translates to about 6 percent growth ratio for the district upon considering the population growth. In sum, the target / projected incomes per capita in

2015 and 2020 for the 2 x Target Case are estimated at Ksh1,644 (Ksh1,359 for rural and Ksh2,499 for urban) and Ksh2,001 (Ksh1,654 for rural and Ksh3,041 for urban) respectively.

Table 3.3.2 Monthly Gross Incomes per Capita at Base Year 2004, and at the Target Year 2019

Case	District, Ksh	Rural, Ksh	Urban, Ksh	Remarks
In 2004	1,105	913	1,680	Base year
Target Case (2015)	1,382	1,142	2,100	
Target Case (2020)	1,526	1,261	2,319	
2x Target Case (2015)	1,644	1,359	2,499	
2x Target Case (2020)	2,001	1,654	3,041	
Poverty Line, Ksh	-	1,562	2,913	By KIHBS-2005/06

Source: JICA Study Team

3.3.3 Development Scenarios

1) Assumptions

There could be various development scenarios to achieve the level of the target income per capita by the target year 2020. Considering the fact that in the district majority of the population live in rural area, and agriculture with the related sectors are still considered potential area of the development, following three scenarios for each primary case are examined upon the conditions; 1) Growth of cropping area for basic crops is equivalent to population growth (increase of area is limited to the arable land of the district), 2) Some strategic crops like cotton increases the area over the population growth rate, 3) Unit prices of the products are consistent with the prices in 2004, 4) Growth of livestock production is equivalent to population growth, and 5) Fish production maintains current level of 2004:

Table 3.3.3 Development Scenarios in Nyando District

Primary Case	Scenarios	
Target Case	Case 1	Productivity development of agriculture sector (unit yield increase of crops)
	Case 2	Productivity development + increase of rural self-employment (value adding of the products)
	Case 3	Urban sector development without agricultural productivity development
2x Target Case	Case 1	Productivity development of agriculture sector (unit yield increase of crops)
	Case 2	Productivity development + increase of rural self-employment (value adding of the products)
	Case 3	Urban sector development without agricultural productivity development

2) Examination of Alternative Scenarios

Above six scenarios are simulated and Tables 3.3.4 and 3.3.5 below show the results of the simulation. Scenario 1 of Target Case and 2 x Target Case need the regional annual growth rate of 4.1% and 4.9% respectively to reach the target in 2020 (4.2% and 5.3% in 2015). To achieve the target, 1.5 to 2 times of yield increase in 16 years are required for the Target Case and 1.5 to 2.5 times of yield increase for the 2 x Target Case. Such increase under the Target Case might be attainable since the current yield level is very low, but still seems very difficult without strong supports to the agriculture sector. For the 2 x Target Case, it shows difficulty to achieve the target income even though assuming the very ambitious yield increase of 1.5 to 2 times more than the 2004 level. As Table 3.3.5 shows, the 2 x Target Case can only achieve 87% of the target income in 2020 (95% in 2015) with the scenario.

Scenario 2 focuses on intensive development of value adding activities in the rural area (on the sheet categorized as rural self-employment). With less ambitious yield increase such as 1.3 to 1.5 times for the Target Case, the target income in 2020 could be achieved though the annual growth rate of rural self-employment requires an increase of 8.3% (8.4% for the target in 2015). For the 2 x Target Case,

the target income in 2020 could be achieved with 1.5 to 2 times increase of the crop yield which looks ambitious, and also the annual growth rate of rural self-employment should reach 11.6% (12.0% in 2015) which also looks very difficult to achieve without strong supports to the sector. Since the initial share of rural self-employment is low, these high growth rates have been obtained in the course of the simulation.

Scenario 3 defines an extreme case that the improvement of neither agriculture productivity nor quality (value adding) takes place but the intensive development in urban sector is assumed. Contribution of urban sector to income increases from 38% to 59% or annual growth rate of 7.2% for the Target Case in 2020 (the income share of 52% and annual growth rate of 7.0% in 2015) and from 38% to 69% or annual growth rate of 10.1% for the 2 x Target Case in 2020 (the income share of 59% and annual growth rate of 9.5%). Annual growth of agriculture sector is 1.5% (both for the targets in 2015 and 2020), which is less than the population growth rate. That means regional food self-sufficiency gets lowered. In this scenario, it is assumed that 24% and 37% of the rural populations for the Target Case and 2 x Target Case respectively need to migrate to urban areas to make rural and urban income achievement equal level to the target in 2020[9].

Table 3.3.4 Development Scenarios: Change of Socio-economic Structure

Case	Target	Scenario 1				Scenario 2				Scenario 3			
Target Case	2% Increase of Annual Gross Regional Income per Capita	Crop productivity increase: Yield Increase: 1.5 - 2.0 times in 2019				Crop productivity increase: Yield Increase: 1.3 - 1.5 times in 2019 Significant growth of rural self-employment: (213% of agri. sector)				Without crop productivity increase: Significant growth of urban sector: (227% of the growth of agri. sector) 24% of rural population migrate to urban area			
		Share of Income (ave. annual growth rate (%))				Share of Income (ave. annual growth rate (%))				Share of Income (ave. annual growth rate (%))			
			Agriulture	Rural SE	Urban		Agriulture	Rural SE	Urban		Agriulture	Rural SE	Urban
		2004	52	10	38	2004	52	10	38	2004	52	10	38
		2015	52 (4.2)	10 (4.2)	38 (4.2)	2015	46 (3.0)	16 (8.4)	38 (4.1)	2015	40 (1.5)	8 (1.7)	52 (7.0)
		2020	52 (4.1)	10 (4.1)	38 (4.1)	2020	43 (3.0)	19 (8.3)	38 (4.1)	2020	34 (1.5)	7 (1.8)	59 (7.2)
2 ×Target Case	4% Increase of Annual Gross Regional Income per Capita	Crop productivity increase: Yield increase: 1.5 - 2.5 times in 2019 (maximum increase)				Crop productivity increase: Yield increase: 1.5 - 2.0 times in 2019 Significant growth of rural self-employment: (286% of agr sector)				Without crop productivity increase: Significant growth of urban sector: (333% of the growth of agri. sector) 37% of rural population migrate to urban area			
		Share of Income (ave. annual growth rate (%))				Share of Income (ave. annual growth rate (%))				Share of Income (ave. annual growth rate (%))			
			Agriulture	Rural SE	Urban		Agriulture	Rural SE	Urban		Agriulture	Rural SE	Urban
		2004	52	10	38	2004	52	10	38	2004	52	10	38
		2015	52 (5.3)	10 (5.3)	38 (5.3)	2015	43 (4.2)	19 (12.0)	38 (5.9)	2015	35 (1.5)	7 (1.7)	59 (9.5)
		2020	52 (4.9)	10 (4.9)	38 (4.9)	2020	39 (4.1)	23 (11.6)	38 (6.0)	2020	26 (1.5)	5 (1.8)	69 (10.1)

Table 3.3.5 Projected Monthly Gross Income per Capita

Case		Target (2015)	Projection (Ksh/month/capita)			Achievement Rate		
			S 1	S 2	S 3	S 1	S 2	S 3
Target Case	Total	1,382	1,386	1,368	1,349	100%	99%	98%
	Rural	1,142	1,146	1,131	1,054	100%	99%	92%
	Urban	2,100	2,107	2,080	1,814	100%	99%	86%
2 ×Target Case	Total	1,644	1,557	1,657	1,560	95%	101%	95%
	Rural	1,359	1,287	1,370	1,127	95%	101%	83%
	Urban	2,499	2,367	2,518	2,111	95%	101%	84%

Case		Target (2020)	Projection (Ksh/month/capita)			Achievement Rate		
			S 1	S 2	S 3	S 1	S 2	S 3
Target Case	Total	1,526	1,511	1,530	1,560	99%	100%	102%
	Rural	1,261	1,249	1,265	1,127	99%	100%	89%
	Urban	2,319	2,297	2,326	2,111	99%	100%	91%
2 ×Target Case	Total	2,001	1,731	2,011	2,051	87%	100%	102%
	Rural	1,654	1,431	1,663	1,389	87%	101%	84%
	Urban	3,041	2,631	3,057	2,603	87%	101%	86%

Urban areas in the district are not the cities but just small centers, where small-scale retailers and jua-kali artisans are earning their living. It would be impractical to prioritize the urban development in the district development programme. The resources of the district mainly lie in the rural area. Therefore, emphasis should

[9] Table 3.3.5 indicates that if making balance in achievement for rural and urban income, both sectors cannot reach the target (around 90% of achievement for rural and urban incomes in 2020, while district total achieves 102% of the target). It indicates movement of population would narrow the income gap between rural and urban areas. This could be due to the gap between labor supply and job opportunity. Migration from rural area increases labor productivity i.e. rural income per capita, but over migration results in unemployment in urban area leading to low urban income per capita. It should also be remarked that the result is subject to the constraint of the simulation: correlation between rural population and agriculture productivity is not considered.

be put on agriculture and rural self-employment sector development. As the scenario 1 of Target Case shows, solely targeting increase of productivity would face the limit to development. Therefore, quality development (value adding activities) together with productivity increase would have to be prioritized as in the scenario 2, especially under the situation that the agriculture sector in Nyando District is oriented more on crop for cash. As a result of the examination, socio-economic framework for formulating development programme is set based on the scenario 2 under the Target Case.

Table 3.3.6 Socio-economic Framework of Nyando District (Target Case: Scenario 2)

	Year	2004	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Distirct	Population	349,419	357,393	380,279	388,002	395,767	403,687	411,766	420,007	428,412	436,986	445,731	454,652	463,751	473,032	482,498
	Density	299	306	325	332	339	346	352	359	367	374	381	389	397	405	413
	Annual growth rate	1.00	2.28	6.40	2.03	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Increment ag/2004	1.00	1.02	1.09	1.11	1.13	1.16	1.18	1.20	1.23	1.25	1.28	1.30	1.33	1.35	1.38
Household Income (Ksh000)																
	Crop	*1,813,514*	*1,890,711*	*2,019,001*	*2,097,873*	*2,177,544*	*2,258,454*	*2,340,488*	*2,423,816*	*2,508,326*	*2,594,177*	*2,681,456*	*2,769,960*	*2,859,930*	*2,951,394*	*3,044,187*
	Livestock	*537,255*	*549,519*	*584,704*	*596,579*	*608,518*	*620,696*	*633,119*	*645,790*	*658,712*	*671,896*	*685,341*	*699,057*	*713,047*	*727,318*	*741,875*
	Fishery	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*	*58,478*
	Agriculture Total	2,409,247	2,498,708	2,662,183	2,752,930	2,844,540	2,937,628	3,032,085	3,128,084	3,225,516	3,324,551	3,425,275	3,527,495	3,631,455	3,737,190	3,844,540
	Rural-self employment	463,317	510,384	638,740	694,977	754,642	818,632	887,217	960,771	1,039,613	1,124,180	1,214,922	1,312,228	1,416,683	1,528,850	1,649,264
	Wage	1,158,292	1,213,344	1,331,017	1,390,285	1,451,283	1,514,621	1,580,364	1,648,732	1,719,810	1,793,843	1,871,047	1,951,501	2,035,539	2,123,403	2,215,243
	Urban self employment	463,317	485,337	532,407	556,114	580,513	605,848	632,146	659,493	687,924	717,537	748,419	780,600	814,216	849,361	886,097
	Other	138,995	145,601	159,722	166,834	174,154	181,755	189,644	197,848	206,377	215,261	224,526	234,180	244,265	254,808	265,829
	Total	4,633,168	4,853,374	5,324,069	5,561,140	5,805,132	6,058,484	6,321,456	6,594,928	6,879,240	7,175,372	7,484,189	7,806,004	8,142,158	8,493,612	8,860,973
	% of Food expenditure	65%	63%	61%	60%	58%	57%	55%	54%	53%	52%	50%	49%	48%	47%	46%
Annual income/capita (Ksh)		13,260	13,580	14,000	14,333	14,668	15,008	15,352	15,702	16,058	16,420	16,791	17,169	17,557	17,956	18,365
Monthly income/capita (Ksh)		1,105	1,132	1,167	1,194	**1,222**	1,251	1,279	1,308	1,338	**1,368**	1,399	1,431	1,463	1,496	**1,530**
Rural Population (75%)		262,064	268,045	285,209	291,002	296,825	302,766	308,825	315,005	321,309	327,740	334,299	340,989	347,813	354,774	361,874
Urban Population (25%)		87,355	89,348	95,070	97,000	98,942	100,921	102,941	105,002	107,103	109,246	111,432	113,663	115,938	118,258	120,624
% of food expenditure (Rural		78%	77%	74%	72%	70%	69%	67%	65%	64%	62%	61%	60%	58%	57%	55%
% of food expenditure (Urba		43%	42%	40%	39%	38%	37%	36%	36%	35%	34%	33%	32%	32%	31%	30%
Annual rural Income/capita(Ksh)		10,961	11,226	11,574	11,848	12,126	12,406	12,691	12,980	13,274	13,574	13,880	14,193	14,514	14,843	15,182
Annual urban Income/capita(Ksh		20,155	20,642	21,281	21,786	22,295	22,812	23,335	23,867	24,407	24,959	25,522	26,097	26,687	27,293	27,915
Monthly rural Income/capita(Ksh		913	936	964	987	**1,010**	1,034	1,058	1,082	1,106	**1,131**	1,157	1,183	1,209	1,237	**1,265**
Monthly urban Income/capita(Ks		1,680	1,720	1,773	1,815	**1,858**	1,901	1,945	1,989	2,034	**2,080**	2,127	2,175	2,224	2,274	**2,326**
Household Income Share (%) (2002-2008 District Development Plan)																
	Agriculture	52	51	50	50	49	48	48	47	47	46	46	45	45	44	43
	Rural-self employment	10	11	12	12	13	14	14	15	15	16	16	17	17	18	19
	Wage	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	Urban self employment	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Other	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Annual Growth Rate (%)																
	Agriculture		3.7	*6.5*	3.4	3.3	3.3	3.2	3.2	3.1	3.1	3.0	3.0	2.9	2.9	2.9
	Rural-self employment		10.2	*25.1*	8.8	8.6	8.5	8.4	8.3	8.2	8.1	8.1	8.0	8.0	7.9	7.9
	Wage		4.8	*9.7*	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	Urban self employment		4.8	*9.7*	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	Other		4.8	*9.7*	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	Total		4.8	*9.7*	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3

3.4 Land Use and Spatial Framework

Following the socio-economic framework presented above, land use is examined. As the economic framework has been based on agriculture production as the major contributor to the economic growth, the land uses accommodating the strategic crops shall be planned in line with the natural condition, present cropping patterns, etc. Another contributor to the growth is increase of rural employment, which mainly means value addition to the primary products. Therefore, this contributor is very closely associated with the strategic crops. Land use for the strategic crops is given of the following:

- Area of sugarcane remains as it is; namely, no expansion is planned since the trade liberalization amongst COMESA countries to come in 2008 may affect the sugar industry. To cope up the liberalization, short maturity variety, which is now on the research stage, shall be introduced as early as possible. With the short maturity, the yield per annum is expected to grow from 22 ton to 33 ton, which could cope with the sugar from other countries like Sudan.
- Cotton shall be considered as one of cash crops as well as of value added crops, which could also be alternative to sugarcane. Cotton bears by-products, so it contributes to increasing the rural employment. The economic frame established above recommends the area expansion to 5 times more than the level of year 2004; namely 324 ha to 1,620 ha. Cotton is planned to be introduced/ extended to such divisions of Miwani, Nyando (eastern parts), and Lower Nyakach.
- Plantation of fruits, as one of strategic products, shall be increased. The focusing areas for the

fruits are Upper Nyakach and Muhoroni taking into the climatic condition favorable to fruit production. Expansion by 50% is planned from the present 1,590 ha to 2,385 ha in year 2019, and the yield is also expected to increase by 50%.

- Rice cultivation is strengthened in terms of both area and yield. Since most of the wet land may not be opened for rice cultivation, the area expansion is set by only 20%, which must be attainable by rehabilitation of existing irrigation schemes. The expansion is therefore not to new areas but within the existing systems or just to the peripheral areas. The yield is expected to increase by 30% from the present 3.1 ton/ha to 4.03 ton/ha.

- Livestock production increase is followed by population increase as district average. However, by division meat production is strengthened in Miwani area where the sugarcane production may be more affected after the 2008 COMESA liberalization. As for graded cattle, Upper Nyakach has the potential to be strengthened. Muhoroni Division has also the potential. However due to security problem, that is cattle rustling, unless there is security the potential cannot be exploited. Therefore the economic frame did not give any significant increase to the graded cattle, but gradually it can be expanded in those two areas.

As for increase of rural employment being one of the contributors to economic growth, rural centers located in those areas where strategic crops especially having potential of processing should be strengthened. Markets located in those centers should be improved, for example putting up of concrete floor, roofing, toilet facilities, information center, etc. For transportation, the road network in the district is already better established as compared to other areas. However, roads from Ahero Town to northern direction via Ombeyi and going to south should be well gravel paved. This contributes to transporting paddy with less loss. Also, road connecting Awash with Katito should be well maintained all the time, otherwise eastern part of Nyando Division will be left out from the growth. These roads should be well maintained as gravel paved for the time being, but as the growth takes off, the road would be bitumen paved. All these discussions are summarized in Figure 3.4.1 as land use and spatial framework.

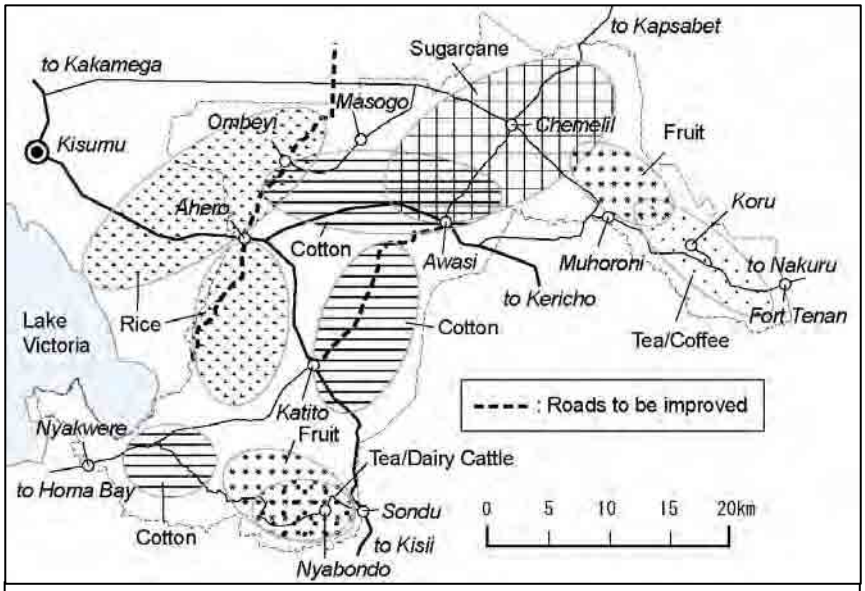


Figure 3.4.1 Land Use and Spatial Framework for Nyando District

3.5 Priority Approaches and Strategies by Participatory Workshops

In Nyando District, planning workshop at the divisional level was held on September 1& 2, 2005, and the district level on September 12 & 13, 2005. Both of the workshops involved representatives from the community workshops carried out prior to the divisional planning workshop; two representatives composed of the leader of the community and the area chief from each community to the divisional workshop, and one representative from each community to the district level planning workshop. Participants to these planning workshops are summarized below:

Table 3.5.1 Participants to the Divisional and District Planning Workshops

Category	Divisional Workshop	District Workshop	Remarks
District Officer	5	22	
Divisional Officer	25	16	
NGOs	4	6	
CBOs	4	5	
Community	10	6	
Total	48	55	

Source: Workshop supported by JICA Study Team

The plenary session of the divisional workshop started with the presentation of the results of the community workshops: Kakola Village of Nyando Division, Kamgwa Village of Lower Nyakach Division, Komolo Village of Miwani Division, Ruke Village of Muhoroni Division, Bwanga Village of Upper Nyakach Division which were selected as typical villages representing the divisions in terms of nature, economic activities, etc. Following the presentation, the Study Team presented an overall objective tree, as shown in Figure 3.5.1.

To establish the objective tree, the Team at first put together all the problems raised by the communities, at the divisional level analytical workshop, and at the district level analytical workshops. Then, the problem statements in the comprehensive problem tree were converted into positive statements which now can be approaches and strategies which can contribute to realizing the simplified development objective of 'Living Standard of the People of Nyando District is High'. Here 'Approach' is the statement placed right under the development objective, and 'Strategy' is the statements appearing under each approach. The overall objective tree presented by the Team also included some sectors like environment, provided that the sector had not been identified during the previous workshops.

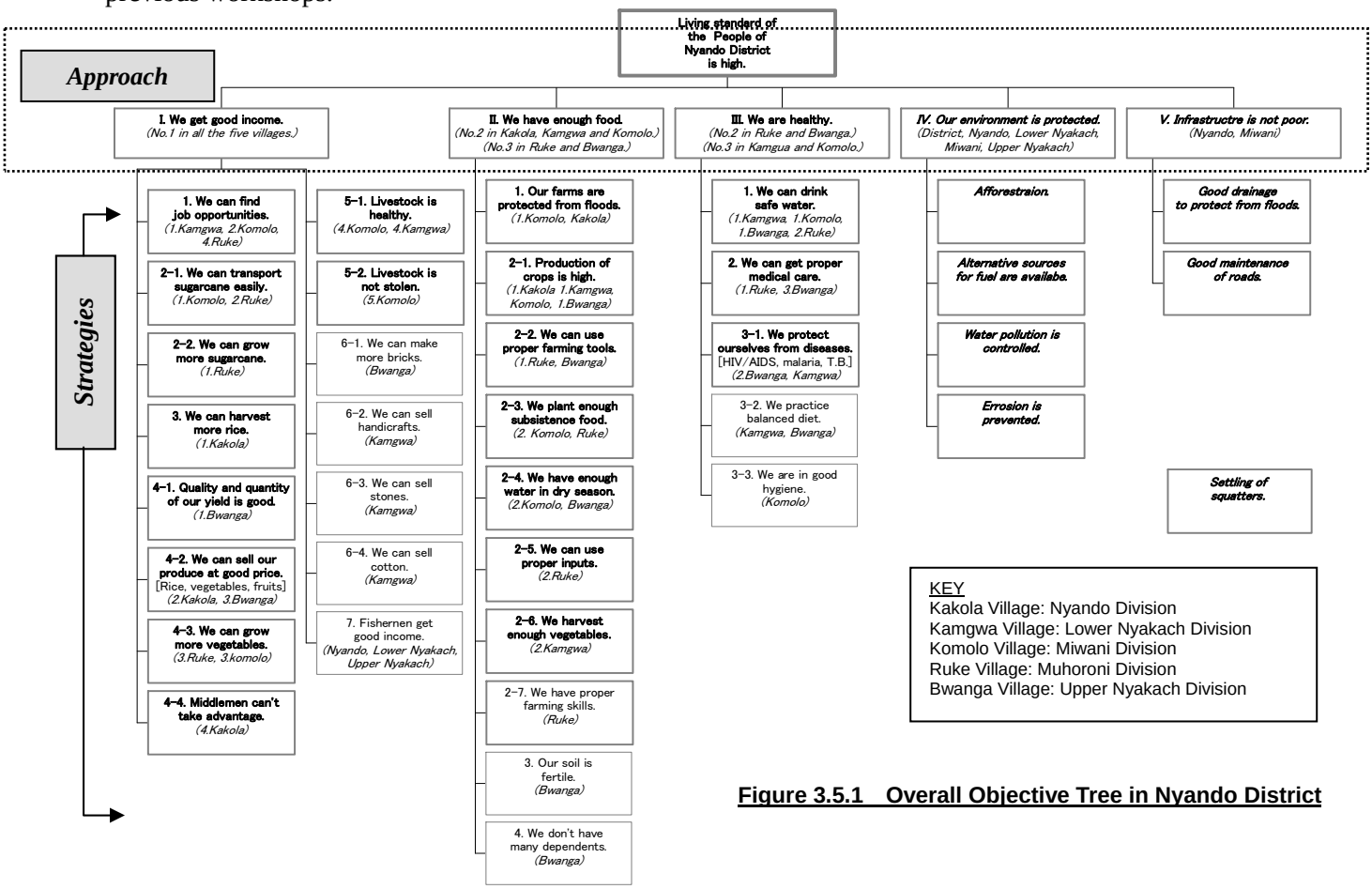


Figure 3.5.1 Overall Objective Tree in Nyando District

With reference to the overall objective tree, the participants reviewed and refined the development approaches, and went into the prioritization of the approaches. The prioritized approaches at the divisional level are shown in the Table 3.5.2 as compared to the priorities made at the community level. Some changes in terms of priority came at the divisional level from the community level since the participants at the divisional level looked issues at broader perspective than the communities.

Table 3.5.2 Priorities at Community and Divisional Levels

	Nyando District				
Community level WS	**CC1 & Giko Schemes**	**Kamgwa Village**	**Komolo Village**	**Ruke Village**	**Bwange Village**
Priority No.1	Income	Income	Income	Income	Income
	1.Rice harvest, 2.Market, 3.Middleman	**1.Job oppotu.**, 2.Stone/ cotton/ livestock/ sisal	**1.Sugarcane**, 2.Job, 3.No vegetables	**1.Sugarcane**, 2.SC transport, 3.No vegetables	**1.Yield,** 2.Job, 3.Price of products
Priority No.2	Food	Food	Food	Health	Health
	1.Plant subsistence food, 2.Land (floods)	**1.Yield**, 2.Vegetables	**1.Floods**, 2.Drought, 3.Weeds	**1.Health facility**, 2.Clean water	**1.Clean water**, 2.Prevention, 3.Medical care
Priority No.3	N/A	Health	Health	Food	Food
	N/A	**1.Cean water**	**1.Clean water**, 2.Living environment	**1.Tools**, 2.Inputs	**1.Production** (tools, land, drought, fertility), 2.Dependants
Divisional level WS	**Nyando Division**	**Lower Nyakach Division**	**Miwani Division**	**Muhoroni Division**	**Upper Nyakach Division**
Priority No.1	Income	Income	Health	Income	Income
	1.Rice irrigation, 2.Marketing, 3.Horticulture	**1.Rice farming**, 2.Horticulture, 3.Agro forestry	**1.Malaria**, 2.HIV/AIDS, 3.T.B.	**1.Sugarcane**, 2.Diversification , 3.Job creation	**1.Brick industry**, 2.Horticulture, 3.Livestock
Priority No.2	Food	Health	Income	Food	Food
	1.Production, 2.Flood protection	**1.Clean water**, 2.Sanitation, 3.HIV/AIDS mitigation	**1.Micro finance**, 2.IGA, 3.Sugarcane	**1.Storage**, 2.Production, 3.Inputs	**1.Food crop extension**, 2.Upgrading livestock, 3.Disease and pest control
Priority No.3	Infrastructure	Food	Food	Health	Health
	1.Rural access roads	**1.Crop diversification**	**1.Food crop extension**, 2.Skill training, 3.Soil and water conservation	**1.Clean water**, 2.Medical care, 3.Balanced diet	**1.Health education**, 2.Clean water, 3.HIV/AIDS mitigation

As per priority No.1, though all the five communities raised 'income' as their top priority, Miwani Division chose 'health' as the top priority, which was ranked at No.3 priority at the community level, taking into account high prevalence of malaria caused by lots of wetlands in the division. As for priorities No.2 and No.3, some changes also took place; for example, Lower Nyakach Division put 'health' at the second priority though it had been placed at priority No.3 at the community level. For Muhoroni and Upper Nyakach Divisions, they raised 'food' to the second priority level from the third priority set during the community level workshops.

The priorities ranked at the divisional level were forwarded to the district planning workshop, where all the approaches and strategies under the simplified development objective 'Living Standard of the People of Nyando District is High' were once again reviewed and prioritized by strategy and approach, and by division. During the review process, modifications made to the approach level were; 1) newly putting up 'We control and manage cases of HIV/AIDS' carved out from the original 'We are health', and 2) additionally putting up 'We get quality education' and 'Good governance'. Since HIV/AIDS was regarded as very critical issue in the district, it was separately set at the approach level. The 'Health' on the other hand includes water and sanitation in addition to general disease issues.

The prioritization by approach was made by 10-seed method by all the participants two times, and by strategy was done by those inclusive of district officers who are engaged in relevant sector(s) to the approach level – say, agriculture officer was included in the group in charge of prioritization of the approach 'We have enough and nutritious food' –, and by division was done mainly by divisional officers and organizations of CBOs and NGOs operating in the respective division. The summary of the approaches and strategies with the divisions prioritized is shown in Figure 3.5.2.


10-seed Prioritization

Figure 3.5.2 Prioritization of Approaches, Strategies and Divisions of Nyando District

Living standard of the people of Nyando District is high.

Approaches I-IV

Strategies

	I. We get good income. (❶107/486 (22.0%) ❶109/471 (23.1%))	NY	LN	MI	MH	UN
1	I-1. We can grow more sugarcane.				◎	
	I-1-1. We can transport sugarcane easily.			●		
2	I-2. We can harvest more rice.	●	○	◎		
3	I-3. We can grow more horticulture.	●		○	◎	
4	I-4. We keep healthy and productive livestock.	◎	◎	○	◎	●
5	I-5. We can do I.G.A.s.	○	●		●	◎
	I-5-1. We can make and sell more bricks.					◎
	I-5-2. We can grow and sell more cotton.	◎				
	I-5-3. We practice commercial fish farming.					◎
	I-6. We can find job opportunities.				●	
	I-7. Quality and quantity of our yield is good.				○	○
	I-7-1. We can sell our produce at good price.					
	I-8. Livestock is not stolen.					
	I-9. We get more income from fish.					

	II. We have enough and nutritious food. (❷ 97/486 (20.0%) ❷ 92/471 (19.5%))	NY	LN	MI	MH	UN
1	II-1. We plant enough and diversified subsistence crops.	○		○	◎	
2	II-2. Our farms are protected from floods.	◎	○			
3	II-3. Our production of crops is high.		●	●		●
	II-3-1. We have enough water in dry season.	◎	◎	○		
	II-3-2. We can use proper farming tools.				○	○
	II-3-3. We can use proper inputs.				○	
	II-3-4. We can use proper farming skills.				○	
4	** We keep healthy and productive livestock.* ***(See I-4)***					
5	II-4. Post harvest management is good.					○
	** We can grow more horticulture.* ***(See I-3)***					
	II-5. We don't have many dependants.					
	II-6. Our soil is fertile.					

	III. We are healthy. (❸ 92/486 (18.9%) ❷ 93/471 (19.7%))	NY	LN	MI	MH	UN
1	III-1. We can drink safe water.	◎	○	●	○	◎
	III-2. We have good sanitation system.		◎			
2	III-3. We protect ourselves from diseases.		●	◎		○
3	III-4. We can get proper medical care.	◎		○	○	
4	III-5. We practice balanced diet.					
5	III-6. We have good recreational facilities.					○

	IV. We control and manage cases of HIV/AIDS. (❺ 57/486 (11.7%) ❺ 59/471 (12.5%))	NY	LN	MI	MH	UN
1	IV-1. We are aware of and protect ourselves from HIV and AIDS.				●	
2	IV-2. We can easily access VCT centers.	○		○		
3	IV-3. We have enough equipped patient support centers.	●				◎
4	IV-4. We have quality home based care facilities.		◎	◎		○

Approaches V-VIII

Strategies

	V. Our environment is protected. (❻ 70/486 (14.4%) ❻ 72/471 (15.3%))	NY	LN	MI	MH	UN
1	V-1. We do afforestation and reafforestation.		◎		○	●
2	V-2. We control floods.	○		◎		
3	V-3. We can manage solid and liquid waste.					
	V-3-1. Water pollution is controlled.					
4	V-4. Alternative sources for fuel are available.					
5	V-5. Erosion is prevented.		◎		○	
	V-6. We manage air pollution.					
	V-7. Environmental policies are enforced.					
	V-8. We are aware of environmental protection.					

	VI. Infrastructure is improved. (❼ 26/486 (5.3%) ❼ 15/471 (3.2%))	NY	LN	MI	MH	UN
1	VI-1. Good drainage to protect from floods.					
2	VI-2. We have more access roads and foot bridges.	○	◎	○		
3	VI-3. We have good housing.					
4	VI-4. Squatters are settled.					
5	VI-5. Electricity network is good.					
	VI-6. Telephone network is good.					
	VI-7. IT infrastructure is good.					

	VII. We get quality education. (❺ 37/486 (7.6%) ❺ 31/471 (6.6%))	NY	LN	MI	MH	UN
1	VII-1. We can get good formal education.		◎	○		
2	VII-2. We can get good informal education.	◎	◎	○		○
	VII-2-1. We are trained on appropriate skills.					
	VII-2-2. We have adult education sessions.					

	VIII. Good governance.	NY	LN	MI	MH	UN
1	VIII-1. Good security.					
2	VIII-2. Good project management.					
3	VIII-3. We form our own community based development groups.		○			
4	VIII-4. We have political will.					

KEY

Top priority strategies:	●
High priority strategies:	◎
Priority strategies:	○

NY: Nyando Division, LN: Lower Nyakach Division, MI: Miwani Division, MH: Muhoroni Division, UN: Upper Nyakach Division

Table 3.5.3 and Figure 3.5.3 below is the excerpt of the approaches arranged in the priority order. It indicates very similar prioritization results between the two 10-seed practices. Approach which came first is related to 'Income Generation', followed by 'Food, or in broader term Agriculture & Livestock', and then by 'Health'. These are the top three priorities in terms of development approaches, and in fact the prioritization results in percentage are very similar amongst the top three. Given 4th priority is 'Environment', followed by 'HIV/AIDS', by 'Education' and finally by 'Infrastructure'. Note is that as good governance is a cross cutting issue like gender, it was excluded from the prioritization.

Table 3.5.3 Development Approaches and the Priorities identified during District Planning Workshop

Approaches	1st prioritization, %	2nd prioritization, %	Ranking In Order	Remarks
1. To get good income	22	23	1	Similar percentage each other
2. To have enough and nutritious food	20	20	2	
3. To be healthy	19	20	3	
4. To protect environment	14	15	4	
5. To control and manage of HIV/AIDS	12	13	5	
6. To get quality education	8	7	6	
7. To improve infrastructure	5	3	7	
8. To establish good governance	NA	NA	NA	Cross-cutting issue

Source: District Planning Workshop held September 8 & 9, 2005

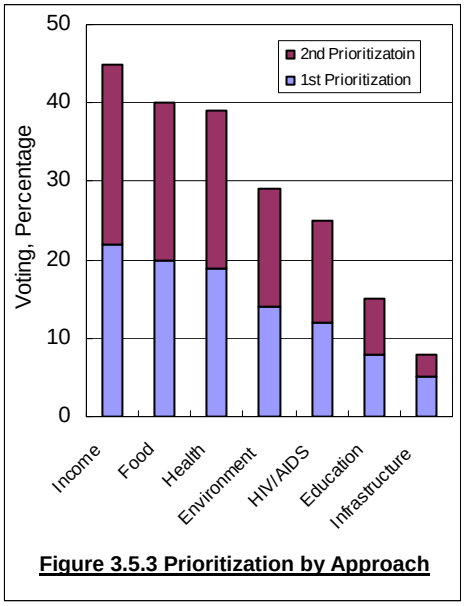


Figure 3.5.3 Prioritization by Approach

Strategies are, as shown in Figure 3.5.2, arranged in the priority order under each approach. At every right side of the strategies is the priority marked by symbols of '● ◎ ○' by division. Symbol '●' shows the top priority, '◎' shows high priority, and '○' means priority. These symbols imply which division(s) the strategy should be put in place at which priority. Ideally, strategies having high priority are to be given more '● ◎ ○' in the divisions. However, they are not always correlated, implying different opinions between district officers and lower cadre participants who are divisional officers and organizations operating at the divisional or community level. Pointed out are:

- Divisions except for Muhoroni and Miwani did not give any priority to the strategy of sugarcane under the approach of 'good income', while the sugarcane as the strategy was given top priority. The district still thinks sugarcane performs very well as a mean of getting good income, which is in fact true at the moment.
- Strategies of 'rice', 'horticulture', 'healthy and productive livestock', and 'IGAs' which are all under the approach of 'good income' look well correlated with the priority given in the divisions.
- Muhoroni Division gave one of the top priorities, ●, to the strategy of 'job opportunities' under the approach of 'good income'. This is because of squatters residing in the division. Since the problem is limited to the division only, the district gave low priority.
- Under the approach of 'enough food and nutritious food', the district gave the top priority to 'enough and diversified subsistence crops', and the 2nd priority to 'protected from flood', while at the divisional level the strategy of 'production of crops is high', which is placed at 3rd by the district, got 3 top priorities by Lower Nyakach, Miwani, and Upper Nyakach.

- Under the approach of 'health', the priorities by strategy and by division are well correlated (sanitation was included in the safe water in the prioritization of the strategy).
- For the approach of 'HIV/AIDS', not much correlation is found. However, it may be said that the district puts more emphasis on awareness than facilities as indicated 'aware of and protect ourselves from HIV/AIDS' being the 1st priority.
- In the approach of 'environment', good correlation is found except for erosion. Two divisions, Muhoroni and Lower Nyakach, gave priority to the soil erosion while the district placed the issue at priority No.5. As soil erosion is a local issue, the district may have not given higher priority.
- For the approach of 'infrastructure', the district gave the priority No.1 to 'drainage to protect from floods', while no priority to the drainage by the divisions. Three divisions gave priority to the strategy of 'access roads and foot bridges', which is ranked at No.2 by the district. For the divisional people, issues related to ordinary life, for example access road improvement may have higher priority. Note is that though Nyando Division did not give any priority to the 'good drainage', the division considered the issue in the strategy of 'our farms are protected from floods' which was ranked at No.2 priority under the approach of 'enough and nutritional food'.

3.6 Establishment of Comprehensive Development Framework

During the district planning workshops, the participants identified programmes and projects under each of the strategies. Then, one more process was required to recommend the components of the District Development Programme. The process was to consolidate some of the programmes into one integrated or comprehensive programme. For example, a programme titled "Crop Husbandry Improvement" may appear under the approach of 'We get good income' and at the same time may appear once again under the approach of 'We have enough and nutritious food'. In this case, there should be a consolidation. Likewise, if we propose an integrated programme, it may cover some of the programmes which were identified during the planning workshop.

Now, Figure 3.6.1 shows the comprehensive development framework of Nyando District. This was finally drafted during the final evaluation/ review workshop held on February 13 & 14, 2007. The participants were more or less same as the ones to the district planning workshop held on September 12 & 13, 2005. The framework flows from left to right; namely, starting with development vision, followed by approaches, then strategies, and respective programmes, some of which are integrated one as above-mentioned. The upper the approach is placed, the higher the priority is given, and likewise the upper the strategy in an approach is placed, the higher the priority is given to the strategy within the approach. Symbols of ●, ◎, ○ show priority divisions at which the programme should be implemented; ● means top priority, ◎ shows high priority and ○ means priority. Further, it shows responsible implementing agency and supporting agencies (collaborators), implementation period covering up to mid term year 2015, project cost and prospective funding sources.

3.7 Programme/ Project Design

The programmes/ projects in the framework were detailed in a form of 'project description' during the final evaluation/ review workshop. The project description is a simplified project design matrix showing objectives, rationale, major outputs, major activities, input, required budget, project risks, etc. With some modifications by JICA Team to the ones drafted by the district workshop participants, final versions are attached in the Appendix VI PROGRAMME/ PROJECT DESCRIPTIONS.

Figure 3.6.1 Comprehensive Development Framework, Nyando District

Priority: High → Low

Vision: A District Enjoying Diversified and Sustainable Socio-economic Development

Approaches (Priority)	Priority	Strategies	No.	Programmes/ Projects	Priority Division NY	LN	MI	MH	UN	Implementing Agency	Collaborators	Implementation Schedule 2008	2009	2010	2011	2012	2013	2014	2015	Project Cost Ksh	Sources
1. Income and food security (1st Priority)	1.1	We can grow more sugarcane.	1	Sugar Industry Strengthening Programme			●	◎		Ministry of Agriculture	KSB, KSR, KFC									*7,000,000*	GOK, Donors
	1.2	We can harvest more rice.	2	Small Holder Rice Irrigation Improvement Programme	●	○	◎			Ministry of Agriculture	Ministry of Water & Irrigation, NIB, CDF, LBDA									7,000,000	GOK, CDF,NGOs
	1.3	We can grow more horticulture.	3	Horticultural Crop Improvement Programme	●		○	◎		Ministry of Agriculture	NGO, Ministry of Water & Irrigation									6,500,000	GOK, CBOs, NGOs, CDF
	1.4	We keep healthy and productive livestock.	4	Livestock Improvement Programme	◎	◎	○	◎	●	Ministry of Livestock & Fisheries	MoA, CBOs, NGOs									5,890,000	NGOs, CDF, GOK
	1.5	We can do IGAs.	5	Cottage Industry Development Programme	◎					Ministry of Agriculture	Min. of Labour-Enterprise Dev., NGOs									500,000	GOK, NGOs
	1.6	We can grow more cotton (added at the final WS)	7	Cotton Revitalization Programme	◎					Ministry of Agriculture	CREAM, KARI, Ginneries									3,260,000	GoK/Donors, Self & FCS
	1.7	We can find job opportunities.	8	Small Scale Entrepreneur Promotion Programme				●		Ministry of Co-operatives	Min. of Labour-Enterprise Dev., NGOs									2,000,000	GOK, NGOs, Donors
	1.8	Quality and quantity of our yield is good.	9	Appropriate Agro-Technology Programme				○	○	Ministry of Agriculture	CARE-K, PLAN-K, ADP									800,000	GOK, NGOs
	1.9	Livestock is not stolen.	10	Community Policing Programme						Office of the President	Ministry of Internal Affairs									500,000	GOK
			11	Livestock Branding & Movement Control Programme						Ministry of Livestock & Fisheries	Provincial Administration									800,000	GOK
	1.10	We get more income from fish.	12	Sustainable Fishery Management Programme						Ministry of Livestock & Fisheries	MoA, Ministry of Water, NGOs, CBOs									14,587,000	GOK, Community,CDF, NGOs
2. We have enough and nutritious food. (2nd Priority)	2.1	We plant enough and diversified subsistence crops.	13	Food Security Enhancement Programme	○		○	◎		Ministry of Agriculture & Ministry of Livestock	NGOs, CREP, CARE (K)									2,150,000	NGOs & GOK
	2.2	Our farms are protected from floods.	14	Flood Prevention and Control Programme	◎	○				Min. of Agriculture & Min. of Water & Irrigation	Min of Special Programmes, NIB, NGOs, RED Cross, VIRED									*312,623,600*	Donors, CDF, GOK
	2.3	Our production of crops is high.	15	Land Reclamation Programme		●	●		●	Ministry of Water and Irrigation	Ministry of Agriculture									*200,000,000*	Donors, GOK
			16	Water Harvesting Programme		●	●		●	Ministry of Agriculture	Ministry of Agriculture									3,400,000	NGOs, GOK
	2.4	We keep healthy and productive livestock.		included in Strategy No.1.4																	
	2.5	Post harvest management is good.		included in Strategy No.2.1					○												
	2.6	We don't have many dependants.	17	Orphanage Support Programme						Ministry of Home Affairs, Children Department	Min. of G.S.C, Min of Education, PA, NGOs									*41,800,000*	UNICEF, GOK, Donors
	2.7	Our soil is fertile.	18	On-farm Soil and Water Conservation Programme						Ministry of Agriculture	SCC-VI-AGRO, WKIEMP & World Neighbour									436,000	GOK & NGOs, Donors
			19	Soil Fertility Improvement Programme						Ministry of Agriculture	SCC-VI-AGRO, WKIEMP									209,000	MOA & NGOs
3. We are healthy. (3rd Priority)	3.1	We can drink safe water.	20	Water and Sanitation Programme	◎	○	●	○	◎	Ministry of Health	LVSWSB, CARE K, SANA, World Vision, ICDC									*12,167,000*	GOK & Donors
	3.2	We have good sanitation system.		included in Strategy No.3.1		◎															
	3.3	Promotion of Disease Prevention	21	Primary Health Care Promotion Programme		●	◎		○	Ministry of Health	NGOs, CBOs & Department of Social Services									2,528,500	GOK & NGOs
	3.4	We protect ourselves from diseases.	22	Health Services Strengthening Programme	◎		○	○		Ministry of Health	CDC, Mission Hospitals, Community, NGOs									*112,980,000*	GOK & Donors
			23	Malaria Prevention Programme	◎		○	○		Ministry of Health	Local Authority, NGOs & CBOs									1,980,000	GOK & Development Partners
	3.5	We can get proper medical care.	24	Nutrition and Health Improvement Programme			◎			Ministry of Health	NGOs, CBOs & Department of Social Services									1,600,000	GOK & Donors
	3.6	We have good recreational facilities.	25	Social Amenities Promotion Programme					○	Ministry of Environment	Ministry of Health, Ministry of Public Works									*2,000,000*	GOK, LATF, CDF
4. Our environment is protected. (Priority)	4.1	We do afforestation and reafforestation.	26	Community Based Afforestation Programme		◎		○	●	Ministry of Environment (Forest Department)	Min of Agric, Livestock, NEMA, VI-Agro & Water									9,000,000	GOK, NGOs
	4.2	We control floods.	27	Community Based Flood Management Programme	○		◎			Ministry of Water & Irrigation	Ministry of Agriculture									*210,000,000*	GOK, NGOs, CDF,
	4.3	We can manage solid and liquid waste.	28	Waste and Disposal Management Programme						Ministry of Local Authority	Min. of Health, Min. of Environment, Min. of Public Works									3,000,000	GOK, LATF, CDF
			29	Water Pollution Management Programme						Ministry of Local Authority	MOH, Min of Environment, Min of Water, Min of Agric									*110,000,000*	Industry, GOK, Donors
	4.4	Alternative sources for fuel are available.	30	Alternative Energy Promotion Programme						Ministry of Energy	NEMA, Min of Agric, Industries in Nyando, Forest Dept.									*80,000,000*	Industry,GOK, NGOs & Dev. Partners
	4.5	Erosion is prevented.		included in Strategy No.2.7		◎		○													
	4.6	We manage air pollution.	31	Air Pollution Management Programme						NEMA & Min. of Environment	Ministry of Health & Ministry of Trade & Industries									*40,000,000*	Donors
	4.7	Environmental policies are enforced.	32	Environment Awareness Campaign Programme						Ministry of Environment	NEMA, Ministry of Health. Local Authority, PA									800,000	GOK
5. We control and manage cases of HIV/AIDS. (5th Priority)	5.1	We are aware of and protect ourselves from HIV and AIDS.	33	HIV/AIDS Awareness and Control Programme				●		Ministry of Health	DSS, NGOs, CBOs, Other line Ministries									2,184,700	GOK, Community, Donors
	5.2	We can easily access VCT centers.	34	VCT and PMCT Upscaling Programme	○		○			Ministry of Health	CDC, Community									*23,800,000*	Donors & GOK
	5.3	We have enough equipped patient support centers.		included in Strategy No.3.4	●				◎												
	5.4	We have quality home based care facilities.	35	Integrated Home Based Care Programme		◎	◎		○	Ministry of Health	NGOs, CBO & Other Line Ministries									989,800	GOK, Donors, Communities
6. We get quality education. (6th Priority)	6.1	We can get good formal education.	36	School Materials Procur't & Improv't Programme		◎	○			Ministry of Education	NGOs, FBOs									*300,000,000*	GOK, Parents, & Stakeholders
	6.2	We can get good non-formal education.	37	Functional Literacy Programme (for Adult & Youth out of School)	◎	◎	○		○	Department of Adult Education	MOEST, CBOs, FBOs									1,600,000	Development Partners, GOK
7. Infrastructure is improved. (7th Priority)	7.1	Good drainage to protect from floods.		included in Strategy No.4.2																	
	7.2	We have more access roads and foot bridges.	38	Rural Access Road Improvement Programme		○				Ministry of Roads & Public Works	Local Government & District Roads Committee									*16,400,000*	GOK, Fuel Levy
	7.3	Squatters are settled.	39	Squatters Settlement Programme						Ministry of Land & Housing	Local Authority, Min of Works, Min of Planning									*100,000,000*	
	7.4	We have good housing.	40	Town Planning Programme						Ministry of Land & Housing	Min of Water, Min of Health, NEMA, Min of Trade									*202,000,000*	
			41	Rural Planning Programme						Ministry of Lands & Housing	Ministry of Local Government, Min of Planning & National Dev.									5,000,000	
	7.5	Electricity network is good. Telephone network is good. IT infrastructure is good.	42	Rural Electrification, It & Telecommunication Establishment Programme						Ministry of Energy	CDF, LATF, MRPW									3,000,000	

*Italic number: development Cost

Total	1,851,485,600 Ksh
Development	1,768,870,600 Ksh
Recurrent	82,615,000 Ksh
Total (per year)	231,435,700 Ksh
Development (per year)	221,108,825 Ksh
Recurrent (per year)	10,326,875 Ksh

NY: Nyando
LN: L/Nyakach
MI: Miwani
MH: Muhoroni
UN: U/Nyakach

●: Top priority
◎: High priority
○: Priority

Solid line: mainly by development budget
Dotted line: mainly by recurrent budget

3.8 Programme / Project Cost and Disbursement Plan

Total Programme / Project cost of 42 programmes / projects identified in the comprehensive development framework shown in Figure 3.6.1 is estimated at Ksh1,851.5 million. Of the total cost, Ksh82.6 million or 4.5% is categorized as recurrent cost and Ksh1,768.9 million or 95.5% is categorized as development cost. The disbursement plan is shown in the following Table 3.8.1, and the demarcation between recurrent and development, and further development by prospective source is shown in Table 3.8.2. The cost is the sum of the required programme/ project costs covering from year 2008 to year 2015; that is from short to mid term development. Although long term development year is set at year 2020, budgeting covers only up to mid term development year of 2015 since we think that the budget for long term development should be planned by reviewing the achievement of short and mid terms.

Table 3.8.1 Programme / Project Cost and Disbursement Plan for Nyando District Development Programme

Year	2008	2009	2010	2011	2012	2013	2014	2015	Total
Recurrent Cost (Ksh)	10,041,042	10,732,471	10,732,472	10,732,472	10,732,470	10,072,469	9,785,802	9,785,802	**82,615,000**
Development Cost (Ksh)	200,292,158	216,906,444	217,406,444	241,206,444	241,206,445	240,506,445	205,673,110	205,673,110	**1,768,870,600**
Total (Ksh)	**210,333,200**	**227,638,915**	**228,138,916**	**251,938,916**	**251,938,915**	**250,578,914**	**215,458,912**	**215,458,912**	**1,851,485,600**
Recurrent Budget (Ksh)	25,997,504								**207,980,032**
Share of the Cost to the Budget (%)	*39*	*41*	*41*	*41*	*41*	*39*	*38*	*38*	***40***
Development Budget (Ksh)	207,283,185								**1,658,265,480**
Share of the Cost to the Budget (%)	*97*	*105*	*105*	*116*	*116*	*116*	*99*	*99*	***107***

Note: 1) Source of the budgets is from DDO Office
2) Recurrent Cost / Budget is not inclusive of salaries of officers/staff but for regular activities of the offices.
3) Development Budget includes 1) government development budget, 2) CDF, and 3) LATF
4) Recurrent Budget is of 2005/06 of the offices to implement the programme / projects
5) Development Budget is 2005/06 for government development budget and LATF, and 2006/07 for CDF.

Recurrent cost is estimated for the activities of the programmes / projects which are implemented as a part of the recurrent activities of the respective offices (for example, agriculture extension, primary health care promotion, etc.). The recurrent cost per year is estimated from Ksh9.8 million to Ksh10.7 million per year as shown in Table 3.8.1. Compared to the current status of the recurrent budgets of the district offices, the estimated annual recurrent cost shares from 38% to 41% of the current budget level (see below part of Table 3.8.1). This may look small share. However, the recurrent cost covers not only officers' recurrent activities but also O&M of offices, night-out and travel allowances, etc. According to past accountings, it is said that recurrent activities relative to projects consists of about 50% only, and hence the planned share of 38% - 41% must be reasonable.

The cost for the activities of the programmes / projects which require investment in some particular area such as road construction, health center construction etc. is estimated as development cost. To implement these programmes / projects, a special budget for the particular programme / project will have to be approved and arranged by the respective authorities. The sources of the development cost can be government development budget, CDF, LATF and other funding agencies. According to the disbursement schedule shown in above Table 3.8.1, annual development cost is estimated from Ksh200.3 million to Ksh241.2 million.

Table 3.8.1 also compares the estimated annual development cost with the current level of the government related development budgets available in the district; namely, 1) department development budget, 2) CDF and 3) LATF. Development budget available in the district can also be from some INGOs, however these are not always open. Therefore, the current level of the development budget shown in the below part of Table 3.8.1 is the sum of the recent year's government related development budgets. The planed disbursement indicates that disbursement plan presented in this Study is feasible as a whole with reference to the past trend of the budget available.

Table 3.8.2 Programme/ Project Cost by Category and by Source

No.	Programmes/ Projects	Implementing Agency	Total	Recurrent	Development	CDF	LATF	Sources
1	Sugar Industry Strengthening Programme	Ministry of Agriculture	7,000,000		7,000,000			GOK
2	Small Holder Rice Irrigation Improvement Programme	Ministry of Agriculture	7,000,000	6,500,000		500,000		GOK, CDF
3	Horticultural Crop Improvement Programme	Ministry of Agriculture	6,500,000	6,000,000		500,000		GOK, CDF
4	Livestock Improvement Programme	Ministry of Livestock & Fisheries	5,890,000	5,890,000				GOK
5	Cottage Industry Development Programme	M of Labor and Human Resource Development	500,000	500,000				GOK
6	Micro-Finance Establishment Programme	Ministry of Cooperative	1,000,000	600,000	400,000			GOK
7	Cotton Revitalization Programme	Ministry of Agriculture	3,260,000	3,260,000				GOK
8	Small Scale Entrepreneur Promotion Programme	M of Labor and Human Resource Development	2,000,000	2,000,000				GOK
9	Appropriate Agro-Technology Programme	Ministry of Agriculture	800,000	800,000				GOK
10	Community Policing Programme	Office of the President	500,000	500,000				GOK
11	Livestock Branding & Movement Control Programme	Ministry of Livestock & Fisheries	800,000	800,000				GOK
12	Sustainable Fishery Management Programme	Ministry of Livestock & Fisheries	14,587,000	12,787,000		1,800,000		GOK, CDF
13	Food Security Enhancement Programme	Ministry of Agriculture & Ministry of Live stock	2,150,000	2,150,000				GOK
14	Flood Prevention and Control Programme	M of Ariculture & M of Water & Irrigation	312,623,600		100,000,000	185,000,000	27,623,600	GOK, CDF, LATF
15	Land Reclamation Programme	Ministry of Water & Irrigation	200,000,000		65,000,000	100,000,000	35,000,000	GOK, CDF, LATF
16	Water Harvesting Programme	Ministry of Agriculture	3,400,000	3,400,000				GOK
17	Orphanage Support Programme	Ministry of Home Affairs, Children Department	41,800,000	4,800,000		37,000,000		GOK, CDF
18	On-farm Soil and Water Conservation Programme	Ministry of Agriculture	436,000	436,000				GOK
19	Soil Fertility Improvement Programme	Ministry of Agriculture	209,000	209,000				GOK
20	Water and Sanitation Programme	Ministry of Health	12,167,000		4,167,000	5,000,000	3,000,000	GOK, CDF, LATF
21	Primary Health Care Promotion Programme	Ministry of Health	2,528,500	2,528,500				GOK
22	Health Services Strengthening Programme	Ministry of Health	112,980,000	3,000,000	28,320,000	73,800,000	7,860,000	GOK, CDF, LATF
23	Malaria Prevention Programme	Ministry of Health	1,980,000	1,980,000				GOK
24	Nutrition And Health Improvement Programme	Ministry of Health	1,600,000	1,600,000				GOK
25	Social Amenities Promotion Programme	Ministry of Roads & Public Works	2,000,000		1,500,000	500,000		GOK, CDF
26	Community Based Afforestation Programme	Ministry of Environment (Forest Department)	9,000,000	7,000,000	2,000,000			GOK
27	Community Based Flood Management Programme	Ministry of Water & Irrigation	210,000,000	1,000,000	70,000,000	130,000,000	9,000,000	GOK, CDF, LATF
28	Waste and Disposal Management Programme	Ministry of Environment & Natural Resources	3,000,000	2,000,000			1,000,000	GOK, LATF
29	Water Pollution Management Programme	Ministry of Local Authority	110,000,000		40,000,000	60,000,000	10,000,000	GOK, CDF, LATF
30	Alternative Energy Promotion Programme	Ministry of Energy	80,000,000		40,000,000	40,000,000		GOK, CDF
31	Air Pollution Management Programme	NEMA & Ministry of Environment	40,000,000		25,000,000	15,000,000		GOK, CDF
32	Environment Awareness Campaign Programme	Ministry of Environment & Natural Resources	800,000	800,000				GOK
33	HIV/AIDS Awareness and Control Programme	Ministry of Health	2,184,700	2,184,700				GOK, LATF
34	VCT and PMCT Upscaling Programme	Ministry of Health	23,800,000	2,800,000	3,000,000	13,000,000	5,000,000	GOK, CDF, LATF
35	Integrated Home Based Care Programme	Ministry of Health	989,800	989,800				GOK
36	School Materials Procur't & Improv't Programme	Ministry of Education	300,000,000	500,000	500,000	298,000,000	1,000,000	GOK, CDF, LATF
37	Functional Literacy Programme (for Adult & Youth out of School)	Department of adult Education	1,600,000	1,600,000				GOK
38	Rural Access Road Improvement Programme	Ministry of Roads & Public Works	16,400,000		13,000,000	1,400,000	2,000,000	GOK, CDF
39	Squatters Settlement Programme	Ministry of Land & Housing	100,000,000		5,000,000	80,000,000	15,000,000	GOK, CDF, LATF
40	Town Planning Programme	Ministry of Land & Housing	202,000,000		30,000,000	102,000,000	70,000,000	GOK, CDF, LATF
41	Rural Planning Programme	Ministry of Lands & Housing	5,000,000	4,000,000			1,000,000	GOK, CDF, LATF
42	Rural Electrification, It & Telecommunication Establishment Programme	Ministry of Roads & Public Works	3,000,000			2,000,000	1,000,000	CDF, LATF
Total Cost			1,851,485,600	82,615,000	434,887,000	1,145,500,000	188,483,600	
					1,768,870,600			