

KARI KAKAMEGA

SWOT REPORT

INTRODUCTORY REPORT

The program started on Monday 10/8/98 after 9.00 am. Subsequently there was good participation by the KARI staff. It was decided to expand participation slightly by including a few extra people from supplies, administration, accounts and farm management. The first day was spent in organizing the participants into groups and setting up procedures for group work. The output of the first day is statement by groups and later by plenary of KARI-Kakamega problems.

Day two work was to define KARI-Kakamega strength. Initially this was done in groups and later the plenary ranked strengths in descending order. There was an effort to group strengths into management categories. The results of these efforts are the outputs for day two. The attempt to group strengths into management categories is unsatisfactory from a professional management analysis point of view despite of the fact that plenary went on until after 7.00 pm. Consequently, it was decided to vary the programme in such a way that the logic of all sections would be tested in group and plenary.

During day three the group produced weaknesses and opportunities. During day four threats were produced. During both days the participants worked in groups initially and then in plenary. On completion of the plenary on unifying threats, the reevaluation of the entire SWOT started. This was not completed until day five. The output of day five, Revised SWOT is the distillation then of all the efforts. It is the consultant's judgement that the final product is worth the effort.

Given the fact that only a handful of participants have taken management courses and the data produced in the SWOT, it is recommended; that the group be put through three short trainings on Organizational Development, Management Skills for Commercialization and Strategic Planning.

The last day was spent in reviewing the Revised SWOT, conducting preliminary discussions on the Organogram and preliminary discussions on Management Information System (MIS). The objective of the two activities was to forward feed some of the issues involved in the two topics so that the organization can start collecting the relevant data as a platform for later training.

The seminar ended at 12.30 pm on August 14, 1998.



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KARI-KAKAMEGA PROBLEM ANALYSIS

DAY 1 (10/8/98)

GROUP 1

- 1) Lack of transport.
- 2) Lack of core funds.
- 3) Chain of commands is broken.
- 4) Lack of strategic plans.
- 5) Lack of disaggregation of funds.
- 6) Inadequate delegation of duties
- 7) Lack of management skills.
- 8) Inadequate monitoring.
- 9) Limited accessibility.
- 10) Low staff morale and motivation.

GROUP 2

- 1) Lack of adequate of funds and bureaucracy.
- 2) Lack of training in speciliazed fields.
- 3) Poor planning and management of resources.
- 4) Lack of equipments, machinery and storage facilities.
- 5) Lack of motivation and morale.
- 6) Inadequate literature sources.
- 7) Lack of communication and chain of command.
- 8) Inadequate vehicles and poor management.
- 9) Inadequate security and related sources.
- 10) Inadequate housing, maintenance, water and electricity shortage.

GROUP 3

- 1) Inadequate funds.
- 2) Insufficient vehicles.
- 3) Donor dependance.
- 4) Lack of demanding clients.
- 5) Insufficient research funds.
- 6) Slow accounting system.
- 7) Inadequate staff salary.
- 8) Too much bureaucracy.
- 9) Inadequate planning.
- 10) Late reporting.

UNIFIED PROBLEM ANALYSIS

DAY ONE (10/8/98)

- 1) Low staff morale and motivation.
- 2) Lack of strategic plan.
- 3) Lack of core funds.
- 4) Lack of training in management.
- 5) Poor planning and management of available resources.
- 6) Inadequate research funds.
- 7) Lack of training in specialized fields.
- 8) Inadequate security and related issues (Title deed).
- 9) Inadequate vehicles and poor management of transport.
- 10) Inadequate M & E of all activities.
- 11) Lack of equipment, machinery and specialized storage.
- 12) Slow accounting system.
- 13) Late technical reporting.
- 14) Inadequate literature sourcing and lack of information technology capacity.
- 15) Unclear chain of command.
- 16) Poor communication.
- 17) Inadequate housing and water shortage.
- 18) Lack of demanding clients.
- 19) Inadequate delegation.
- 20) Donor dependence.
- 21) Lack of disaggregation of funds.

KARI-KAKAMEGA STRENGTHS

DAY TWO (11/8/98)

GROUP 1

1. Resources:

- i) Available reasonable trained technical staff.
- ii) Available office and laboratory space.
- iii) Available land resources.
- iv) Available transport, plant equipments.
- v) Available funds for on-farm trials.
- vi) Diverse AEZ (LH, UM, LM) and socio-economic environment to test technology.
- vii) Prospects for further training.

2. Management:

- i) Administration does not interfere with research funds.
- ii) Established procedures for processing research proposals and protocols.
- iii) Pooled planned transport plant equipments.
- iv) Boss who encourages research.

3. Relationships:

- i) Good team work and staff.
- ii) Strong extension/farmer linkage.
- iii) Favourable centre-donor relationship.
- iv) Good relationship with the neighbouring community.

4. Communication:

- i) Convenient location of the centre.
- ii) Fairly good communication in place.

GROUP 2

- 1) Fenced and paddocked farm.
- 2) Proximity to municipal infrastructure.
- 3) Diverse mandate region with varied Farming Systems.
- 4) Ample facilities e.g. office, labs, guest house, computers.
- 5) Fairly trained and committed multidisciplinary team.
- 6) Fairly well organized management structure.
- 7) Democratic decision making.
- 8) Cordial relationships.
- 9) Proper supervision.
- 10) Good dissemination of information e.g. regular meetings, internal memos.
- 11) Good P/R with donor community/other institutions.
- 12) Offer technical services e.g. schools, farmers.
- 13) Ideal environment.

GROUP 3

- 1) Committed staff.
- 2) Qualified staff available.
- 3) Good infrastructure e.g. vehicles, buildings, computers, library, land, E-mail.
- 4) Good Research/Extension/Farmer linkages.
- 5) Donor funding for research.
- 6) Diversification of donors.
- 7) Substantial research output.
- 8) Good use of resources. No corruption observed.
- 9) Ability to protect centre resources e.g. land, houses, cattle.
- 10) Good spirit of internal interaction.
- 11) Good collaboration (internationally and locally).
- 12) Work plans in place for programmes.
- 13) Delegation of responsibilities.
- 14) Income generating capacity.
- 15) Successful soliciting of research funds by researchers.
- 16) Willingness to accept new management ideas.
- 17) All research proposals discussed in CRAC.
- 18) Minimum interference by KARI headquarters.
- 19) Favourable weather.
- 20) Proximity to Kakamega town.
- 21) Manageable mandate area.
- 22) Organized staff welfare.
- 23) Working committees support management.
- 24) Good contribution to agricultural education.
- 25) Availability of casual labour.

UNIFIED STRENGTHS DESCENDING RANK

- 1) Committed staff.
- 2) Good team work among staff.
- 3) Availability of varied donor funds for research.
- 4) Qualified staff available.
- 5) Available office and laboratory space.
- 6) Good use of resources.
- 7) Strong research/extension/farmer linkage.
- 8) Established procedure for processing research proposals and protocols.
- 9) Work plans in place for programmes.
- 10) Boss who encourages research.
- 11) Successful soliciting of research funds by researchers.
- 12) Fenced and paddocked farm.
- 13) Proximity to municipal services.
- 14) Pooled plant transport and equipment.
- 15) Substantial research output.
- 16) Good collaboration (internationally and locally).
- 17) Diverse AEZ (UH, LH, UM, LM) and socio-economic environment to test technologies.
- 18) Fairly good regional communication infrastructure in mandate.
- 19) Offer technical services to schools, farmers.
- 20) Willingness to accept new management ideas.
- 21) Organized staff welfare.

PROCESSED UNIFIED STRENGTH CATEGORIZED INTO MANAGEMENT AREAS

DAY TWO

1: MANAGEMENT

a: Planning

- 1) Established procedure for processing research proposals and protocols.
- 2) Work plans in place for programmes.
- 3) Successful soliciting of research funds by researchers.

b: Resource Management

- 1) Good use of human resources.
- 2) Good use of financial resources.
- 3) Good use of physical resources.

c: Co-ordination

- 1) Good team work among staff.
- 2) Strong research/extension/farmer linkage.
- 3) Good collaboration (internationally and locally).
- 4) Organized staff welfare.

2: OUT-PUT

- 1) Substantial research output.
- 2) We offer technical services to schools and farmers.

3: PHYSICAL RESOURCES

- 1) Available office and laboratory space.
- 2) Pooled plant transport and equipment.
- 3) Fenced and paddocked farm.

4: FINANCIAL RESOURCES

- 1) Availability of varied donor funds for research.
- 2) Potential for income generation.

5: HUMAN RESOURCES

- 1) Committed staff.
- 2) Qualified staff available.
- 3) A knowledge and experience in AEZ and socio-economic diversity of the mandated area.
- 4) Boss who encourages research.
- 5) Willingness to accept new management ideas.

KARI-KAKAMEGA WEAKNESSES

DAY THREE (12/8/98)

GROUP 1 WEAKNESSES

- 1) Lack of strategic plan for the centre.
- 2) Unclear chain of command - organograph.
- 3) Under-generation of A.I.A.
- 4) Mechanism for maintenance of pooled resources not followed.
- 5) Insufficient monitoring, evaluation and reporting.
- 6) Slow accounting system.
- 7) Accounting procedures not followed.
- 8) Insufficient delegation of responsibility and authority.
- 9) Unprocedural disposal of farm produce.
- 10) Inefficiency in registry.

GROUP 2 WEAKNESSES

- 1) Below optimum maintenance of vehicles and tractors.
- 2) Below optimum use of available land.
- 3) Below optimum performance of support staff.
- 4) Below optimum maintenance and purchase of computer accessories.
- 5) Poor chain of command and protocol.
- 6) Lack of independent transport office.
- 7) Inadequate dissemination and promotion of research output.
- 8) Bureaucracy in accounting and procurement.
- 9) Unclear guidance of donor support fund to the centre.
- 10) Inefficient registry.

GROUP 3 WEAKNESSES

- 1) Lack of centre annual and strategic plan.
- 2) Inefficient use of human and physical resources.
- 3) Lack of commitment to our own procedures in protocol formulation.
- 4) Lack of commitment to our own procedures in protocol formulation.
- 5) Inadequate research marketing of outputs.
- 6) Cumbersome KARI procurement procedures of stores.
- 7) Late accounting.
- 8) Inadequate systematic M & E and follow-up.
- 9) Lack of communication.
- 10) Late technical reporting.
- 11) Inadequate delegation of responsibilities.

KARI-KAKAMEGA UNIFIED WEAKNESSES

- 1) Lack of centre annual and strategic plans.
- 2) Inadequate systematic M & E and follow-up.
- 3) Inefficient use of resources - human and physical.
- 4) Inadequate dissemination and promotion of our research output.
- 5) Lack of commitment to our own procedures in protocol formulation.
- 6) Cumbersome KARI procurement procedures of stores.
- 7) Inefficient accounting system.
- 8) Lack of effective programmes interaction.
- 9) Unclear chain of command and organogram.
- 10) Insufficient delegation of responsibility and authority.
- 11) Under generation of AIA and unprocedural disposal of farm produce.
- 12) Inefficiency in registry.

KARI-KAKAMEGA OPPORTUNITIES

GROUP ONE

- 1) Solicit funds for training in management and technical skills.
- 2) Solicit funds for A.I.A generation.
- 3) Exploit willingness of donors to fund research.
- 4) Exploit collaboration with other institutions to improve coverage of mandate area.
- 5) Decentralize financing and accounting system.

GROUP TWO

- 1) KARI headquarter support to centre with human resources.
- 2) Utilize diverse AEZ for research.
- 3) Solicit direct donor support to centre.
- 4) Exploit responsive collaborative clientele .
- 5) Exploit good partnership with IARS and NARS .
- 6) Utilize proximity to municipal infrastructure to extend services.
- 7) Sell services to diverse private sector.
- 8) Exploit opportunity for further training.
- 9) Exploit SAPs for efficient human resource use.

GROUP THREE

- 1) Use of existing extension/NGO/farmer groups within the mandate.
- 2) Use donor policy to fund on-farm research dissemination.
- 3) Use donor policy to improve management of resources.
- 4) Use donor policy to coordinate funding to increase centre output.
- 5) Exploit opportunity to collaborate with international institutions.
- 6) Utilize farmer driven demand.
- 7) Utilize commercialization to improve working conditions.
- 8) Use information technology to improve technical knowledge.
- 9) Use GoK retrenchment policy to rationalize human resources.

KARI-KAKAMEGA UNIFIED OPPORTUNITIES

1. MANAGEMENT

- a) Utilize farm potential through commercialization.
- b) Utilize commercialization to improve working condition.
- c) Solicit funds for appropriation in aid generation.
- d) Use donor policy to improve management of resources.
- e) Solicit funds for training in management and technical skills.
- f) Decentralize financing and accounting system.
- g) Sell services to diverse regional private sector.
- h) Utilize proximity to municipal infrastructure to extend services.
- i) Exploit structural adjustment programmes for efficient human resource use.
- j) Use GoK retrenchment policy to rationalize human resources.

2. RESEARCH

- a) Exploit willingness of donors to fund research.
- b) Use donor policy to fund on-farm research and dissemination.
- c) Solicit direct donor support to centre.
- d) Use donor policy to coordinate funding to increase centre output.
- e) Exploit responsive collaborative clientele.
- f) Utilize farmer driven demand.
- g) Exploit good partnership with International Agricultural Research Stations and National Agricultural Research Stations.
- h) Use information technology to improve technical knowledge.
- i) Exploit clients visits to the centre to disseminate research outputs.

KARI-KAKAMEGA THREATS

DAY FOUR (13/8/98)

GROUP ONE

- 1) Brain drain.
- 2) Unstable political environment.
- 3) Unclear scheme of service.
- 4) Poor management of staff welfare by the employer.
- 5) Lack of title deeds for research lands.
- 6) Grabbing of physical resources.
- 7) Pressure on land by indigenous people.
- 8) Shift in donor policy.
- 9) Shift in Government policy on resources use.
- 10) Ethnicity and political interference on management.

GROUP TWO

- 1) Deteriorating national economy.
- 2) Lack of title deeds for research land.
- 3) Unfavourable policy change on GoK towards research.
- 4) Poor human resource management in KARI headquarter.
- 5) Unfavourable political environment.
- 6) Deteriorating infrastructure.
- 7) Unclear policy on output proceeds.
- 8) Outbreaks of human diseases.
- 9) Unpredictable adverse weather conditions (El Nino like).
- 10) Diminishing land parcels in our surrounding area.

GROUP THREE

- 1) GoK disinterest in agricultural development.
- 2) Culture of corruption.
- 3) Collapsing infrastructures in mandate area.
- 4) Political instability.
- 5) Donor withdrawal.
- 6) Farmers distrust of GoK institutions.
- 7) Land grabbing.
- 8) Headquarters interference.
- 9) Brain drain.
- 10) Hiring freeze negatively impacts on scientific core.
- 11) Unbalanced staff composition (qualification).

UNIFIED THREATS

- 1) Unstable political environment.
- 2) Deteriorating national economy.
- 3) Deteriorating infrastructure.
- 4) GoK disinterest in agricultural development and research.
- 5) Ethnicity and political interference on management.
- 6) Shift in Government policy on resources use.
- 7) Pressure on land by indigenous people.
- 8) Culture of corruption.
- 9) Shift in donor policy to NGOs.
- 10) Donor withdrawal.

KARI-KAKAMEGA REVISED SWOT STRENGTHS

1: MANAGEMENT

a: Planning

- 1) Established procedure for processing research proposals and protocols.
- 2) Work plans in place for programmes.
- 3) Successful soliciting of research funds by researchers.

b: Co-ordination

- 1) Good team work among staff.
- 2) Strong research/extension/farmer linkage.
- 3) Good collaboration (internationally and locally).
- 4) Organized staff welfare.
- 5) Good use of financial resources.

2: RESEARCH OUT-PUT

- 1) Substantial research output.
- 2) We offer technical services to schools and farmers.

3: PHYSICAL RESOURCES

- 1) Available office and laboratory space.
- 2) Pooled plant transport and equipment.
- 3) Fenced and paddocked farm.

4: FINANCIAL RESOURCES

- 1) Availability of varied donor funds for research.
- 2) Potential for income generation.

5: HUMAN RESOURCES

- 1) Committed staff.
- 2) Qualified staff available.
- 3) A knowledge and experience in AEZ and socio-economic diversity of the mandated area.
- 4) Boss who encourages research.
- 5) Willingness to accept new management ideas.

KARI-KAKAMEGA REVISED SWOT WEAKNESSES

- 1) Lack of centre strategic plan and annual work plans.
- 2) Inadequate systematic Management Information System (MIS) and follow-up.
- 3) Inefficient use of resources - human and physical.
- 4) Inadequate dissemination and promotion of our research output.
- 5) Cumbersome KARI procurement procedures of stores.
- 6) Inefficient accounting system.
- 7) Unclear chain of command and organogram.
- 8) Insufficient delegation of responsibility and authority.
- 9) Under generation of AIA (income) and unprocedural disposal of farm produce.
- 10) Inefficiency in registry.

KARI-KAKAMEGA REVISED SWOT OPPORTUNITIES

1. MANAGEMENT

- a) Utilize farm potential through commercialization.
- b) Use commercialization proceeds to improve working conditions.
- c) Use donor policies to improve management of resources.
- d) Use KARI decentralization policy to effectively decentralize the financing and accounting systems.
- e) Sell services and technologies to existing private sector.
- f) Utilize proximity to municipal infrastructure to extend services.
- g) Exploit structural adjustment programmes for efficient human resource use.

2. RESEARCH

- a) Exploit willingness of donors to fund research.
- b) Use donor policies to fund on-farm research and dissemination.
- c) Use donor policies to coordinate funding to increase centre output.
- d) Exploit responsive collaborative clientele.
- e) Utilize farmer driven demand.
- f) Use information technology to improve technical knowledge.
- g) Exploit clients visits to the centre to disseminate research outputs.
- h) Fairly good existing regional infrastructure in mandate area.
- i) Use international policy of sharing germplasms and training NARS scientists.

KARI-KAKAMEGA REVISED SWOT THREATS

- 1) Unstable political environment.
- 2) Deteriorating national economy.
- 3) Deteriorating infrastructure.
- 4) Declining GoK funding of agricultural research and development.
- 5) Ethnicity and political interference on management.
- 6) Adverse shift in Government practices on resources use.
- 7) Pressure on land by indigenous people.
- 8) Culture of corruption.
- 9) Shift in donor policy to NGOs.
- 10) Donor withdrawal.
- 11) Farmers distrust of GoK institutions.
- 12) Lack of title deeds.

KARI-KAKAMEGA ELEMENTS OF ORGANOGRAM AND MANAGEMENT INFORMATION SYSTEM

DAY FIVE (14/8/98)

The bulk of day five was spent discussing the current organogram. It presents some problems. A Task Force is to be set up to collect data on the same and present it for discussion to the staff.

Very limited time was spent on discussing elements of a MIS and possible sources from existing data. Similarly, a Task Force will be set up to generate data for discussion by staff.



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KARAKAMEGA RESEARCH INSTITUTE

ORGANISATIONAL DEVELOPMENT/COSTING WORKSHOP

OCTOBER 26-NOVEMBER 6, 1998

Appendix 2: Kari Kakamega Organogram 29/10/98

A. INTRODUCTION

The objective of this work was to train Kari Kakamega staff on the key issues in management necessary for moving towards commercialization. This entailed assigning them to collect relevant historical data on operations, personnel, financing programming and organizational structure. The bulk of the training involved reviewing the data, setting up a new organizational structure, reviewing the basis of planning of research in the mandate area and reviewing management processes. The training methodology was to give limited lectures and to get the staff to do group work where they would debate the specific issues. Group work was reviewed in plenary to build center wide agreements on issues.

B. GENERAL COMMENTS AND WAY FORWARD PROPOSAL

1. The first comment is that on average only about 20 people attended daily even though thirty six participants were registered. Two participants, Rotich and Ongaro, did not attend at all for they were involved with other consultants. Other participants, Obiero, Inzaule and Otsyula for example, had to go to other meetings in Nairobi. On the last day there were only 16 people. Many people were in and out most of the time. The point is simply that this kind of training demands total and continuous attendance to assure that benefit spread across the organization. The management ought to assure that in future training there is stable attendance.
2. The prepared materials left a lot to be desired. Data was incomplete. Clearly there was no leadership on the data prepared. Even milk data was incomplete. There was no balance sheet. Data on expenditures was being prepared up to the last minute of training. It was not given to the consultants. In Appendix 1. Log frame Preparation for Strategic Planning, there is specification of data needed for preparation of Log Frame, if the client chooses that track. It will not be possible to prepare this data without completing and revising the preparation of the data assigned before OD training. The client had previously expressed the need for Strategic Planning Training. Whichever comes first, it is mandatory that the basic institutional data and costs be revised and systematized for both preparations of a center wide log frame and strategic planning.

C. TRAINING OUTPUTS

The expected outputs were an organogram, a system of prioritizing and planning research in the mandate area and finally a system of costing. The organogram was prepared, discussed and agreed on and is shown in Appendix 2. KARI Kakamega Organogram 29/10/98. This is a fair improvement on the status quo ante where 28 people were reporting to the Center Director.

Appendix 3. Demand Driven Research shows the systems of prioritizing and planning research for the whole mandate area taking into account the various ecological regions and population densities. In the limited time it was not possible to unify the group approaches. More work needs to be done on this issue before subsequent training.

No specific system of costing was developed to the output level given the lack of systematic data especially on overheads and transport. Clearly the center needs help with the accounting system. Exercises to elicit thinking about costing and financing were done. It is the consultant's expectation that when log frames are prepared for all units, the experience gained in costing will lead to systematic calculations on research projects including calculations on their Net Present Value and Profitability Index. Conclusions from these exercises should lead to comparisons between the ecology/population-based prioritization and the cost based system to arrive at a strategy of addressing the problems of the mandate area.

D. NARRATIVE DISCUSSION OF THE MAJOR TRAINING ACTIVITIES

The timetable of the training is found in Appendix 4: Kari Kakamega OD/Costing Workshop Timetable. The major topics are found in Appendix 5: Kari Kakamega OD/Costing Workshop Major Topics. The following narrative report covers these main topics. The Study materials are found in Appendix 11: Study Materials.

1. REVIEW OF SWOT ANALYSIS

The Objective of this bloc was to review whether the conclusions of the SWOT were still valid. The consultants were of the opinion that there was need for the participants to review their positions on some key issues. Among these were a. Staff Morale b. Staff Motivation, c. Staff Commitment and finally d. Research. This need arose because in the SWOT there were some issues, which were contradictory. The conclusions of the SWOT are found in Appendix 6: Kari Kakamega SWOT.

3. MANAGEMENT FUNCTIONS

Under this topic, the participants were introduced to management functions. The idea was to bring into sharp focus the responsibilities of management. Scientists will normally not have done management training in their formal training but will more often than not find themselves in positions where they are managers but without requisite training. Issues dealing with Planning, Controlling, Directing, Staffing, etc. were discussed and generated several questions from the floor, an indication that the session was well received.

4. ORGANISATIONAL FOCUS: THE 3 C'S

The Institute wishes to commercialize some of its services such as the farm and the guest house. It was also felt that the center needs to address the farmers needs in a much more specific way. Farmers are the ultimate consumers of research outputs. The 3Cs stand for Company, Client and Competition. It was felt that if the institute is going to address the farmers needs and other users of their services under commercialization, it should begin to address itself as a service provider, the farmer as the service consumer and such other institutions that are in a position to render similar services.

4. THE ORGANOGRAM

5.

The objective of this bloc was to rationalize the management structure. After the SWOT, a Task Force was setup to work out proposals on the organogram. This task force did a very good job for it reduced the persons reporting to the Center Director from 28 to less than ten. Further work by groups, processed in plenary and reprocessed in groups. The ultimate product shown in Appendix 2: Kari Kakamega Organogram 29/10/98 was processed in very great detail at levels one, two, three and four. It is the judgement of the consultants that Kari Kakamega now has an Organisational Structure which will enable it to evolve a tighter management system.

6. METHODS AND PROCEDURES

The objective of this section was to raise issues of Monitoring and Evaluation, Organization and Procedures, Management Information System. In all these team work is essential.

Internal Methods and Procedures

A task force had been set up during the SWOT to document internal methods and procedures. This task force presented its report titled *Internal Methods and Procedures* to plenary. Following the report presentation, the groups discussed the report and presented their reports to plenary. The plenary concluded that the Task Force should refine the data it had collected as follows:

1. The Task Force should co-opt any new members it desired to enable it to finish its work in a satisfactory manner.
2. The Task Force should describe all Methods and Procedures obtaining or necessary for the center.
3. It should then outline problems and anomalies in the current procedures.
4. It should make specific proposals for solving the problems and anomalies.
5. Where externally driven methods and procedures impinge on proper functioning of the center, the Task Force should report these to the CD to enable him to take up these matters with the relevant authorities.
6. The final draft report should be discussed with all the professionals in the center before adoption.

7. The final report on Methods and Procedures should be made available to all staff.
8. It should be a feed into the MIS system under design.

Research Monitoring and Evaluation

A paper prepared by a staff member titled *Research Monitoring System at RRC Kakamega* was presented to the plenary. The author pointed out that the paper did not cover the following key aspects.

Databases on All Center Projects
Staff Activity Monitoring and Evaluation
Progress Report Databases
Common Center-wide Work Plan for all Projects
Active Job Specific Tracking of Officers.

The groups discussed the paper and these points. Groups made their presentations to plenary which agreed that:

1. Management, defined as Heads of Sections, the Deputy Director and the Center Director under the new organogram, would appoint a task force to refine the available data on M&E.
2. It was noted that a comprehensive M&E system would only be possible only when a center wide Work Plan is put into place.
3. Section Heads should be the officers responsible for collecting the M&E information in their sections for transmission to the DCD who will be institutionally responsible for both the ME and MIS systems.
4. The Information collected by for the M&E system should be fed into the MIS system.

Center Wide Management Information System

A task force had been established during the SWOT to prepare a report on MIS. The report titled *Feasibility of a Center-Wide MIS* was presented to the plenary.

This report is a very good effort for it covers all potential MIS questions save integrating M&E. It systematically shows that the key nodes of the MIS are the offices of the Center Manager, the Human Resources Manager (AO), the Supplies Manager, the Accounts Manager, the Research Managers, the Farm Manager, the Transport Manager and the Estate Manager. The report was presented to Plenary. It was discussed by groups and refined in plenary. The plenary concluded that:

1. All professionals at the center through their sections should discuss the MIS task force proposals.
2. Conclusions of the section group discussions should be fed back to the MIS task Force.

3. Reports of the Internal Methods and Procedures should be fed to the MIS Task Force to ensure that concerns expressed in the report are incorporated into the proposed MIS.
4. The Report of the yet to be formed Task Force on Monitoring and Evaluation should be fed into the MIS Task Force to facilitate inclusion of the relevant conclusions into the MIS.
5. The MIS Task Force will review all the data submitted to it and prepare a final draft for center wide discussion. A final proposal for a center-wide MIS will be prepared and implemented.

7. DEMAND DRIVEN RESEARCH PROGRAMME

The objective of this section was to assist the center to think of its mandate area and to find rational ways of allocating its resources to the needs of the area. The three groups were given an assignment to facilitate thinking about this. Their products are found in Appendix 2: Demand Driven Research. These products are not as complete as they should be and will be revisited before the completion of strategic planning with the express purpose of testing the assumptions against financial costing of research activities. However, it is the opinion of the consultant that the process of struggling with the assignment started the staff on the way to thinking about how resources should be allocated towards serving the various agro-ecological regions, the various populations and finally various farming systems found in the mandate area. The consultants supplied population data of the mandate area for apparently the center did not collect such data. It is shown in Appendix 7: Kari Kakamega Mandate Area Population 1989.

8. INTRODUCTION TO ACCCOUNTING AND FINANCE /PRODUCT COSTING

The bloc included a review of the accounting data prepared by the center. It was clear that the data presented was nor acceptable to the participants due to glaring inaccuracies. It was therefore not possible to use it as to cost some of the services but was used for demonstration purposes only. After review of the data prepared there was presentation of the basic Accounting Principles and Basic Finance Principles. This included: Basic Accounting Principles, Fundamental Accounting Conventions, Balance Sheet Formats, Basic Costing Concepts and Overheads Allocation. Time was spent in looking at project costing methods: Pay-back Period, Net Present Value and Profitability Index. This is important for researchers to be able to cost research projects with a view contracting for paid research as well as patenting research results. A complex case study involving this particular aspect was used to drive the main issued home.

Key issues were raised about the accuracy of data in terms of administration and services as well as in the farm and overheads in general including library and vehicles. It was noted that the database for the farm did not have clear management lines, as the Head of Livestock Section did not appear to be in the picture. The MIS Task Force had identified this problem. The Center does not have a qualified accountant and staff to a certain

extent some of the inaccuracies could be attributed to this. Lack of a consistent system cost recording and accumulation is a major problem. Management would have to make it a habit to demand certain information so that a system can be designed to provide it.

Appendix 1: LOG FRAMES FOR STRATEGIC PLANNING

It is understood that for each of the research activities there already are annual and research cycle logical frameworks.

For some of the administrative sections and functions like administration, finance, stores etc. there has not been any log frames in the past. These should be prepared.

There are other units like Alupe and the Kakamega farms for which there are no log frames. These should be prepared.

All log frames should be sifted to clarify all activities, outputs, human resources, financial resources and physical resources utilized in center activities. Lists of these categories should be prepared systematically by activity and section.

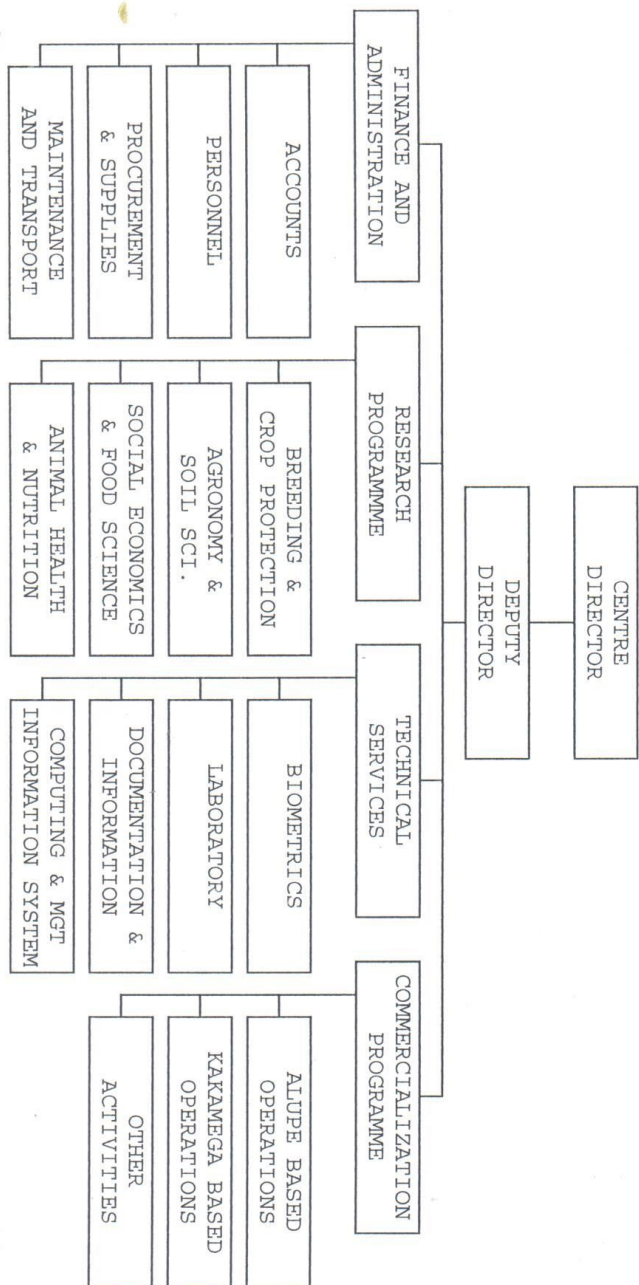
Supervision of this activity should be assigned to an individual familiar with Log Frames to assure content leadership.

This data will be used in the Strategic Planning training to work out a detailed Center Log frame. The data should be available to the consultant's one calendar month before onset of the training.

Appendix 2.

KARI KAKAMEGA ORGANOGRAM

29 10 98



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Appendix 3. Demand Driven Research

GROUP 1

COMMODITIES IN THE VARIOUS AGRO - ECO - ZONES

LH ₁	LH _{2,3}	UM ₁	UM ₂	UM ₃	UM ₄	LM ₁	LM ₂	LM ₃	LM ₄
Tea	Tea	Tea	Maize	Maize	Maize	Maize	Maize	Maize	Maize
Coffee	Maize	Maize	Onion	Onion	Beans	Bananas	Bananas	Beans	S/Potatoes
Maize	Wheat	Tomatoes	Bananas	Bananas	S/Potatoes	Beans	Beans	S/Potatoes	S/Potatoes
Wheat	Onion	Bananas	Beans	Beans	Cassava	S/Potatoes	S/Potatoes	Cassava	Cotton
Onion	Tomatoes	Beans	S/Potatoes	S/Potatoes	F. Millet	Cassava	Cassava	Sorghum	Cowpeas
Tomatoes	Beans	S/Potatoes	Cassava	Cassava	G/Nuts	Sorghum	Cassava	G/Nuts	L/Vvegetable
Beans	Irish Potatoes	Cassava	F. Millet	F. Millet	S/Flower	F. Milllets	F. Millet	Cotton	Pigeon peas
Irish Potatoes	Pyrethrum	F. Milllets	Coffee	S/Flower	L/Vvegetable	G/Nuts	G/Nuts	Pigeon pea	Green grams
Pyrethrum	Sheep	Coffee	Cabbage	Coffee	Sheep	Sugarcane	Sugarcane	Green gram	Goats
Flowers	Poultry	Kales	L/Vvegetable		Poultry II	Simsim	Simsim	Goats	Sheep
L/Vvegetable	Cattle	Cabbages	Sheep		Cattle I	L/Vvegetable	Mangoes	Sheep	Poultry II
Sheep	Kales	Green Pea	Poultry		Cattle II	Goats	L/Vvegetable	Cattle II	Cattle II
Dairy	Cabbages	Pawpaws	Cattle		Fodder	Sheep	Pepper		
Fodder	L/Vvegetable	Simsim	Fodder		Pasture	Poultry	Goats		
Napier/	Coffee	L/Vvegetable	Pasture		Napier	Cattle	Sheep		
Pasture		Sheep	Napier				Poultry		
		Poultry					Cattle II		
		Cattle					Tobacco		
		Fodder							
		Pasture							

**COMMODITY RANKING FOR FOOD SELF SUFFICIENCY AND FOOD SURPLUS AT
THE HOUSEHOLD LEVEL IN THE CENTER MANDATE AREA.**

AEZ	LH ₁	LH _{2,3}	UM ₁	UM ₂	UM ₃	UM ₄	LM ₁	LM ₂	LM ₃	LM ₄
POPULATION										
DAIRY	1	1	-	-	-	-	-	-	-	-
TEA	2	-	-	-	-	-	-	-	-	-
MAIZE	3	3	1	1	1	1	2	1	-	-
WHEAT	-	2	-	-	-	-	-	-	-	-
BEANS	-	-	2	2	2	3	-	-	-	-
II POULTRY	-	-	-	-	-	-	-	3	3	3
COFFEE	-	-	3	3	3	-	-	-	-	-
I/II CATTLE	-	-	-	-	-	2	-	-	-	-
SUGAR CANE	-	-	-	-	-	-	1	2	-	-
S/POTATOES	-	-	-	-	-	-	3	-	-	-
SORGHUM	-	-	-	-	-	-	-	-	1	1
CASSAVA	-	-	-	-	-	-	-	-	2	2
L/VEGETABLE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FISH	-	-	-	-	-	-	-	-	-	✓

COMMODITY WEIGHTING

AEZ	LH ₁	LH ₂₋₃	UM ₁	UM ₂	UM ₃	UM ₄	LM ₁	LM ₂	LM ₃	LM ₄	LM ₅	
POPULATION DENSITY SQ/KM	181	156	666	252	316	205	398	272	274	253		
	a b c	a b c	a b c	a b c	a b c	a b c	a b c	a b c	a b c	a b c	a b c	
DAIRY	2 1 25%	2 2 25%										
TEA	3 2 20%											
MAIZE	1 3 50%	1 3 20%	1 50%	1 2	1 2 50%	1 1 50%	1 0 25%	1 0 30%				
WHEAT		3 1 50%										
BEANS			2 30%	2 0	2 0 25%	3 3 15%						
II POULTRY			3 15%					3 0 15%	3 0	3 0 15%		
COFFEE				3 1	3 1 30%							
I / II CATTLE						2 2 25%						
SUGARCANE							3 1 60%	2 1 50%				
S/POTATOES							2 2 5%					
SORGHUM									1	1 0 50%		
CASSAVA									2	2 0 30%		
L/VEGETABLES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FISH										✓	✓	
THE DISTRIBUTION OF SOME AEZ IN REGIONAL RESEARCH CENTRE - KAKAMEGA MANDATE DISTRICTS (SQUARE KM)												TOTAL
KAKAMEGA	5	0	545	17	19	583	1081	269	19	0	0	2538
BUNGOMA	135	52	180	221	278	224	156	466	280	0	0	1992
BUSIA	0	0	0	0	0	0	502	425	327	95	0	1349
SIAYA	0	0	30	0	0	0	547	408	695	359	20	2029
NANDI	288	706	314	57	93	267	12	152	0	0	0	1889
TOTAL	428	758	1069	295	390	1074	2258	1720	1321	454	20	9797
	4.4%	7.7%	11%	3%	4%	11%	23%	17.6%	13.5%	4.6%	0.2%	

REGIONAL RESEARCH CENTRE - KAKAMEGA

MANDATE

To improve the standard of living by enhancing agricultural production through development and dissemination of appropriate technologies.

RESOURCES IDENTIFIED

1. HUMAN
 - Farmer
 - Skilled Staff
2. FINANCIAL
 - Operational
 - Capital
 - Credit
3. TECHNOLOGY
4. PHYSICAL
 - Land
 - Infrastructure
5. DELIVERY SYSTEM
 - Extension
 - Marketing - Produce
 - Inputs
 - NGO's

COMMODITY RANKING

AREA	44% ⁸	7.7% ⁶	11.0% ⁴	3.0% ¹⁰	4.0% ⁹	11.0% ⁴	23.0% ¹	17.6% ²	13.5% ³	4.6% ⁷	0.20% ¹¹	
POPULATION	181 ⁽⁹⁾	156 ⁽¹⁰⁾	666 ⁽¹⁾	252 ⁽⁷⁾	316 ⁽³⁾	205 ⁽⁸⁾	398 ⁽²⁾	272 ⁽⁵⁾	274 ⁽⁴⁾	253 ⁽⁶⁾		
	LH ₁	LH _{2,3}	UM ₁	UM ₂	UM ₃	UM ₄	LM ₁	LM ₂	LM ₃	LM ₄	LM ₅	
DAIRY	+	+										2
TEA	+	+										2
MAIZE	+	+	+	+	+	+	+	+				8
WHEAT		+										1
BEANS			+	+	+	+						4
POULTRY			+				+		+	+		4
COFFEE				+	+							2
I / II CATTLE						+						1
SUGARCANE							+	+				2
S/POTATOES							+					1
SORGHUM									+	+		2
CASSAVA									+	+		2
L/VEGETABLES	+	+	+	+	+	+	+	+	+	+		10
FISH										+	+	2
	4	5	4	4	4	4	4	4	4	5	1	

GROUP 1

Resource allocation to ranked commodities ensuring food house hold sufficiency surplus.

	<u>Commodity</u>	<u>Score</u>	<u>Resources Allocation</u>
1.	Maize	8	40%
2.	Beans	4	30%
3.	Local Poultry	4	20%
4.	Local Vegetables	10	5%

Local vegetables are disease tolerant and some will do well even at low fertility hence low allocation.

Beans tied with local poultry but bean is a more valuable commodity.

GROUP 2

KARU-KAKAMEGA MANDATE REGION

KAKAMEGA DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Kabras	LM ₁	20	147,621	Maize, beans, cassava, sweet potatoes, eggs, sugarcane, milk	Maize, beans, sweet potatoes	Sugarcane, maize, sweet potatoes
	LM ₂	217	HH* - 47			
	LM ₃	113				
Navakholo	LM ₁	156	63,210 HH* - 45	Maize, beans, cassava, sweet potatoes, sugarcane	Maize, beans, milk	Sugarcane
Lurambi	LM ₁	187	86,370 HH* - 52	Maize, beans, sorghum, cassava, finger millet, arrow roots, sugarcane	Maize, sweet potatoes, milk	Sugarcane
Ikolomani	LM ₁	133	108,514 HH* - 86	Maize, beans, sweet potatoes, milk, vegetables, tea	Maize, beans, milk	Tea, maize
Shinyalu/Ileho	UM ₁ LM ₂	295 40	118,400 HH* - 83	Maize, beans, sweet potatoes, tea, milk	Maize, beans, milk	Maize, tea

TESO DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Amukura/ Chakol	LM ₁ LM ₂ LM ₃	85 180 8	98,000 HH* - 44	Finger millet, maize, sorghum, beans, groundnuts, rice, cassava, cowpeas, sweet potatoes, bananas, milk, eggs	Finger millet, sorghum, cassava	Finger millet, sorghum
Amagoro/ Angurai	LM ₂ LM ₃	81 87	69,761 HH* - 51	Finger millet, maize, sorghum, beans, rice, cassava, cowpeas, groundnuts, sweet potatoes, bananas, milk, eggs, tobacco	Finger millet, sorghum, cassava, maize, beans	Finger millet, sorghum, tobacco

BUSIA DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Nambale/ Matayos	LM ₁ LM ₂	182 46	57,215 HH* - 57	Maize, sorghum, sweet potatoes, finger millet, cassava	Sorghum, sweet potatoes	Sorghum, sweet potatoes
Burula	LM ₁ LM ₂	252 13	90,442 HH* - 60	Maize, beans, cassava, sorghum	Sorghum, sweet potatoes	Sorghum, sweet potatoes
Funyula	LM ₁ LM ₃ LM ₄	26 205 25	76,198 HH* - 27	Cassava, sorghum, maize, beans, finger millet, sweet potatoes, fish, citrus	Fish, sorghum	Citrus
Budalangi	LM ₁ LM ₄	76 115	48,116 HH* - 47	Cassava, fish, sweet potatoes, beans, sorghum, finger millet	Fish, sorghum	Fish, sorghum

BUNGOMA DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Kanduyi	LM ₁	318	131,814 HH* - 67	Maize, beans, millet, bananas, milk, eggs	Maize, milk	Maize
Kimiliti	LM ₂ LM ₄ UM ₂	178 221	79,968 HH* - 89	Maize, cassava, beans, millets, milk, eggs, coffee	Maize, beans, milk	Maize, milk, onions
Webuye	LM ₁	397	148,380 HH* - 64	Maize, beans, millet, milk, sweet potatoes	Maize, beans	Sugarcane, maize
Sirisia	LM ₂ LM ₃	209	75,000 HH* - 59	Maize, beans, cassava, bananas, milk, eggs	Maize, beans	Onions, tobacco
Tongaren	UM ₃ UM ₄	375	89,581 HH* - 33	Maize, cassava, millet, beans, sweet potatoes	Maize, beans, milk	Maize, milk
Central	UM ₁ UM ₃	233	87,458 HH* - 22	Beans, millet, maize, milk, sweet potatoes	Maize, beans	Onions, tobacco
Bumula	LM ₃	353	108,455 HH* - 35	Cassava, bananas, beans, maize, millet, sorghum, milk	Maize, finger millet, sorghum	Sugarcane, tobacco

VIMBA DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Vihiga	UM ₁ }		96,848 HH* - 181	Maize, beans, Cassava, bananas, sorghum, sweet potatoes, tea, milk	Maize, beans, milk	Tea, milk, maize
Sabatia	UM ₁ }	447	13,000 HH* - 139	Maize, beans, bananas, sorghum, tea, sweet potatoes, poultry, coffee, milk, vegetables	Maize, beans, milk	Milk, tea, maize
East Tiriki	UM ₁ }		68,409	Maize, beans, bananas, sorghum, vegetables, sweet potatoes, finger millet	Maize, beans, milk	Maize, tea
West Tiriki	UM ₁ }		87,972 HH* - 151			
Emuhaya	LM ₁	94	84,000 HH* - 190	Maize, beans, bananas, sorghum, sweet potatoes	Maize, beans, sweet potatoes	Maize, tea
Luanda	LM ₁	94	108,243 HH* - 193	Maize, beans, bananas, sorghum, sweet potatoes	Maize	Tea, maize

MT. ELGON DISTRICT:

DIVISION	AEZ	AREA (sq Km)	POPULATION (1997) HH* per sq Km	MAIN FOOD COMMODITY	SUFFICIENT	SURPLUS
Kapsokwony	UM ₁ UM ₂	255.66	24,662 HH* - 90	Maize, beans, potatoes, wheat, milk	Maize, beans, milk	Wheat, maize, tea
Kaptana	LH ₁ LH ₂	209.95	25,992 HH* - 17	Maize, wheat, beans, potatoes, wheat, milk	Maize, beans, milk	Wheat, maize, tea
Cheptais	LH ₁ LH ₂	222.36	41,498 HH* - 55	Maize, beans, coffee	Maize, beans, milk, potatoes	Wheat, maize, tea
Kapsiro	LH ₁ LH ₂	248.78	47,064 HH* - 91	Maize, wheat, potatoes, beans, milk	Maize, beans, milk, potatoes	Wheat, maize, tea

1. Land resources

AEZ	AREA	AREA %	POPULATION HH/KM ²	POPULATION %	COMMODITY	SUFFICIENT	SURPLUS
LM ₁ }	2298	25	86	19	Maize, beans, bananas, s/potatoes, vegetables, sugarcane, dairy, coffee	Maize, beans, bananas, milk, poultry	Sugarcane, coffee
LM ₂ }	1720	19	47	10	Maize, beans, s/potatoes, sugarcane, poultry, dairy, sorghum, coffee	Maize, beans, milk, poultry, sorghum	Sugarcane, sorghum, coffee
LM ₃	1321	15	44	10	Maize, beans, cassava, s/potatoes, sorghum, millet, groundnuts, sugarcane, onions, tobacco	Maize, sweet potatoes, sorghum	Onions, tobacco
LM ₄	454	5	29	6	Sorghum, cassava, fish, cotton, simsim, sweet potatoes, groundnuts	Sorghum, cassava	Fish, cotton
LM ₅	1069	12	151	33	Maize, beans, tea, coffee, vegetables, dairy, poultry	Maize, beans, milk	Tea, maize, milk
UM ₁	1074	12	43	9	Maize, beans, sunflower, dairy, poultry	Maize, beans, milk	Maize, beans, sunflower, milk
UM ₂	1168	13	63	14	Maize, beans, dairy, poultry, tea, pyrethrum, vegetables, fruits, wheat	Maize, milk, vegetables, fruits	Tea, fruits, maize, milk, wheat
UM ₃							
UM ₄							
UM ₅							
Total	9104	100	463	101			

- Human resources
- Physical resources
- Capital resources

Human skilled and well trained.

Capital - funds for research.

Physical - available labs, office block, etc

Weight resources allocation

- | | | |
|----|----------------|-------|
| 1. | Maize | - 35% |
| 2. | Beans | - 20% |
| 3. | Milk | - 20% |
| 4. | Sweet potatoes | - 5% |
| 5. | Sorghum | - 5% |
| 6. | Vegetables | - 5% |

RANKING OF COMMODITIES AND AEZ OF THE RRC-KAKAMEGA MANDATE

AEZ	Maize	Beans	Bananas	Milk	Poultry	Vegetables	Sorghum	Finger Millet	Cassava	Sweet Potatoes	Sugar cane	Coffee	Tea	Sun-flower	G/nuts	Total	%
LM ₁	+	+	+	+	+	+		+	+	+	+					10	13
LM ₂	+	+	+	+	+	+	+	+	+	+	+				+	12	17
LM ₃	+	+			+	+	+		+	+	+				+	9	12
LM ₄							+		+						+	2	3
LM ₅																	
LH ₁	+	+		+		+				+						5	7
LH ₂	+	+		+		+										5	7
LH ₃	+	+		+		+										4	5
LH ₄	+	+		+		+										4	5
UM ₁	+	+	+	+	+	+		+		+						8	11
UM ₂	+	+	+	+	+	+										6	8
UM ₃	+	+			+	+										4	5
UM ₄	+	+		+	+	+								+		6	8
Total	10	11	4	9	7	11	3	3	4	6	3			1	3	75	
%	13	15	5	12	9	15	4	4	5	8	4			1	4		100

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RESOURCE ALLOCATION BY AEZ

AEZ	AREA	%	DENSITY HH/KM ²	%	No. OF COMMODITIES	%	RESOURCES	
							HUMAN %	FINANCIAL %
LM ₁	2298	25	86	19	10	13	22	20
LM ₂	1720	19	47	10	12	17	20	18
LM ₃	1321	15	44	10	9	12	16	16
LM ₄	454	5	29	6	2 (M)	3	4	5
LM ₅								
UM ₁	1069	12	151	33	7 (M)	10	15	18
UM ₂								
UM ₃	1074	12	43	9	5 (M)	7	9	10
UM ₄								
LH	1168	13	63	14	5 (M)	7	14	13
UH								
	9104	101	463	101	8 (M)		100	100

Resources: Human: based on area + number of commodities.
Finance: based on area + density + number of commodities.
M = Mean across zones.

AEZ	FOOD SUFFICIENCY		FOOD SURPLUS	
	Commodities	Pop. (1989)	Commodities	Pop.
UH1, LH1, LH2 Sheep/Dairy/Tea Zone	Milk, Vegetables(kales) Cabbages) Irish potatoes, maize, beans, poultry	218,354 in an area of 747km ²	Tea, milk, maize, diary cattle, vegetables, poultry, irish potatoes	
UM3, UM1, LH3 maize zone	Maize, beans, S/potatoes milk, F/millet vegetables, poultry	477,704 over an area of 1869km ²	Sunflower, maize, beans, milk, vegetables, poultry	
UM1, UM2 Tea/Coffee zone	Maize, millet, beans, vegetables, banana, milk, poultry	834,222 in an area of 1344km ²	Tea, Coffee, pigs, poultry, banana, Avocadoes, pawpaws, pineapple, mangoes	
LM1, LM2, Sugarcane	S/potatoes, cassava, maize, beans, sorghum, F/millet, poultry, milk, vegetables	1,403,238 in an area of 4018km ²	Sugarcane, S/potatoes, poultry, cattle, sheep, goats, G/nuts	
LM3, LM4 Sorghum, cassava S/potatoe	Sorghum, cassava, S/potatoe, maize beans, F/millet vegetable, G/nut milk, poultry, simsim, B/nuts fish	507,060 in an area 1775km ²	G/nut, cotton, poultry, citrus, goats, sheep, cattle, sugarcane, fish	
LM5	Sorghum, F/millet citrus, milk, poultry, cattle, sheep, goats, vegetables, fish. Cotton	7,303 in an area of 20km ²	Citrus, fish, sheep, goats	

RELATIVE IMPORTANCE OF COMMODITIES IN DIFFERENT AGRO-ECOLOGICAL ZONES

FOOD SELF SUFFICIENCY

SURPLUS FOR SALE

1. LH1, LH1, LH2 - Tea/Diary/Sheep zone

Maize	=	55%
Milk	=	20%
Vegetables	=	10%
Beans	=	5 %
Irish potatoes	=	5%
F/Millet	=	2%
Poultry	=	2%
S/Potatoes	=	1%

Tea	=	25%
Milk	=	25%
Maize	=	10%
Cattle	=	15%
Vegetables	=	10%
Irish Potatoes	=	10%
Poultry	=	5%

2. LH3, UM3, UM4 - Maize zone

Maize	=	60%
Milk	=	15%
Vegetables	=	10%
Beans	=	7%
Poultry	=	4%
F/Millet	=	2%
S/potato	=	2%

Milk	=	40%
Maize	=	35%
Sunflower	=	15%
Beans	=	5%
Vegetables	=	3%
Poultry	=	2%

3. (UM1 UM2) - Tea Coffee zone

Maize	=	60%
Vegetables	=	10%
Milk	=	10%
Beans	=	10%
S/Potatoes	=	3%
Banana	=	3%
Poultry	=	3%
F/Millet	=	3%

Tea	=	30%
Milk	=	25%
Maize	=	14%
Cattle	=	7%
Banana	=	6
Poultry	=	5%
Avocadoes	=	3%
F/Millet	=	2%
Pigs	=	2%
Papaw	=	2%
Coffee	=	2%
Pineapple	=	1%
Mango	=	1%

4. LM1, LM2 - Sugar Cane zone

Maize	=	36%	Sugar Cane	=	60%
Sorghum	=	19%	Poultry	=	10%
Cassava	=	15%	Cattle	=	10%
Beans	=	8%	S/Potato	=	8%
Vegetable	=	7%	Sheep	=	5%
S/Potato	=	5%	Goats	=	5%
Milk	=	4%	G/Nut	=	2%
F/Millet	=	3%			
Poultry	=	3%			

5. LM3, LM4 - Sorghum/Cassava zone

Sorghum	=	22%	Fish	=	35%
Cassava	=	17%	Maize	=	14%
Maize	=	15%	Cotton	=	5%
Fish	=	10%	G/Nut	=	8%
F/Millet	=	10%	Cattle	=	8%
S/Potatoes	=	8%	F/Millet	=	7%
Beans	=	5%	Cotton	=	5%
Vegetable	=	5%	Poultry	=	5%
Poultry	=	3%	Citrus	=	5%
Milk	=	2%	Mangoes	=	5%
Sim sim	=	1%	Goats	=	4%
Bambranut	=	1%	Sheep	=	4%
G/Nut	=	1%			

6. LM 5

Sorghum	=	40%	Fish	=	50%
Fish	=	25%	Sheep	=	15%
Vegetables	=	10%	Goats	=	13%
Maize	=	10%	Cattle	=	12%
Poultry	=	5%	Beans	=	5%
Sheep	=	2%			
Goats	=	2%			
Citrus	=	2%			
Milk	=	2%			
Beans	=	2%			

Question 3. Key resources for assuring fulfilment of the centre mandate

i) Personnel

ii) Finance

Major Commodities in order of importance from the weighted list

1. UH1, LH1, LH2, Zones

Food Sufficiency

Maize	-	55%
Milk	-	20%
Vegetables	-	10%
Irish potatoes	-	5%
Beans	-	5%

Surplus for sale

Tea	-	25%
Milk	-	25%
Maize	-	10%
Vegetables	-	10%

Overall List Ranking

Maize	-	65%
Milk	-	45%
Vegetables	-	20%
Beans	-	5%
Irish potatoes	-	5%

Zone 2 - LH3, UM3 UM4

Maize	-	60%
Milk	-	15%
Vegetables	-	10%
Beans	-	7%
Poultry	-	4%

Milk	-	40%
Maize	-	35%
Sunflower	-	15%
Beans	-	5%
Vegetables	-	3%

Overall Overall Ranking

Maize	-	95%
Milk	-	55%
Sunflower	-	15%
Vegetables	-	13%
Beans	-	12%

Zone 3 - UM1, UM2

Maize	-	60%	Tea	-	30%
Beans	-	10%	Milk	-	25%
Vegetables	-	10%	Maize	-	14%
Milk	-	10%	Cattle	-	7%
Poultry	-	4%	Poultry	-	5%
Banana	-	3%			
S/Potatoes	-	3%			

Overall:	Maize	-	74%
	Milk	-	35%
	Beans	-	10%
	Vegetables	-	10%
	Poultry	-	9%

Zone 4. LM1, LM2

Maize	-	36%	Sugrcane	-	60%
Sorghum	-	19%	Poultry	-	10%
Cassava	-	15%	Cattle	-	10%
Beans	-	8%	S.Potato	-	8%
Vegetables	-	7%	Sheep, Goats,	-	5%

Overall:

Maize	-	36%
Sorghum	-	19%
Cassava	-	15%
Poultry	-	10%
Cattle	-	10%

Zone 5 - LM3, LM4

Sorghum	-	22%	Maize	-	14%
Cassava	-	17%	G/Nut	-	8%
Maize	-	15%	Cattle	-	8%
F/Millet	-	10%	F/Millet	-	7%
S/Potato	-	8%	Poultry	-	5%

Overall:

Maize	-	29%
Sorghum	-	22%
Cassava	-	17%
F/Millet	-	17%
G/Nut	-	8%

Zone 6 - LM5

Sorghum	-	40%	Sheep	-	15%
Vegetable	-	10%	Goats	-	13%
Maize	-	10%	Cattle	-	12%
Poultry	-	5%	Beans	-	5%
Beans	-	2%			

Overall:

Sorghum	-	40%
Sheep	-	15%
Goats	-	13%
Cattle	-	12%
Maize	-	10%

OVERALL RANKING OF COMMODITIES ACROSS THE MANDATE REGION

COMMODITIES	1	2	3	4	5	6	Total Scores	Rank
GOATS	-	-	-	-	-	3	3	8
SHEEP	-	-	-	-	-	4	4	7
CATTLE	-	-	-	1	-	2	3	8
POULTRY	-	-	-	1	-	-	3	8
MAIZE	5	5	5	5	5	1	26	1
BEANS	2	1	3	-	-	-	6	5
SORGHUM	-	-	-	4	4	5	13	2
CASSAVA	-	-	-	3	3	-	6	5
VEGETABLES	3	2	2	-	-	-	7	5
FINGER MILLET	-	-	-	-	3	-	3	8
GROUNDNUT	-	-	-	-	1	-	1	13
IRISH POTATO	1	-	-	-	1	-	1	13
SUNFLOWER	-	3	-	-	-	-	3	8
MILK	4	4	4	-	-	-	12	3

LEGEND:

ZONE 1	=	UH1, LH1, LH2
2	=	LH3, UM3, UM4
3	=	UM1, UM2
4	=	LM1, LM2
5	=	LM3, LM4
6	=	LM5,

Appendix 4: Kari Kakamega OD/Costing Workshop Timetable

KARI KAKAMEGA OD/COSTING

WORKSHOP OCT. 26 TO NOV. 6

DAY	9.00 – 10.30	BREAK	11.00 – 12.30	LUNCH	2.00 – 3.30	BREAK	4.00 – 5.30
MONDAY	Review of SWOT		Review of SWOT		Management Process		Group Work
TUESDAY	Management Functions		Group Work		Management Functions (Video)		Group Work
WEDNESDAY	Organizational Change		Organizational Change (Video)		Group Work		Organizational Change
THURSDAY	The Three C's' Organogram		Organogram		Organogram		Group Work
FRIDAY	Organogram		Organogram		Methods and Procedures		Methods and Procedures
MONDAY	Methods and Procedures		Group Work		Methods and Procedures		Group Work
TUESDAY	Demand-Driven Research		Group Work		Group Work		Group Work
WEDNESDAY	Introduction to Accounting		Introduction to Accounting		Group Work		Introduction to Accounting
THURSDAY	Introduction to Finance		Group Work		Introduction to Finance		Group Work
FRIDAY	Product Costing		Product Costing (Video)		Group Work		Group Work & Closure

Appendix 5: Kari Kakamega OD/Costing Workshop Major Topics

KARI KAKAMEGA RESEARCH INSTITUTE
ORGANISATIONAL DEVELOPMENT /COSTING WORKSHOP
OCTOBER 26-NOVEMBER 6, 1998

MAIN TOPICS

- 1. Review of SWOT Analysis**
- 2. Management Functions**
- 3. Organizational Change**
- 4. Organisational Focus: The 3 Cs**
- 5. The Organogram**
- 6. Methods and Procedures**
 - Monitoring and Evaluation**
 - Organization and Procedures**
 - Management Information System**
 - Teamwork**
- 7. Demand Driven Research Management**
 - Product Matrix**
 - Participation**
 - Effective Demand (Product/Market Matrix)**
- 8. Introduction to Accounting and Finance**
- 9. Research Product Costing/Break Even Analysis**

Appendix 6: Kari Kakamega SWOT

Appendix 7: Kari Kakamega Mandate Area Population 1989.

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
KAKAMEGA	694,908	768,617	1,463,525	280,141	3,561	411
BUTERE	42,564	47,033	89,597	19,019	208	431
S. MARAMA	13,875	15,767	29,642	6,470	66	449
MANYALA	1,648	1,828	3,476	825	10	348
SHIKUNGA	3,682	4,133	7,815	1,637	18	434
SHIANDA	3,530	4,055	7,585	1,634	13	583
SHIATSALA	2,183	2,429	4,612	1,059	11	419
SHIBEMBE	2,832	3,322	6,154	1,315	14	440
CEN MARAMA	12,838	13,895	26,733	5,644	60	446
SHINAMWINYU	4,0594,417	8,476	1,692	17	499	
SHIRO TSA	3,741	4,052	7,793	1,779	12	649
IMANGA	2,948	3,318	6,266	1,315	20	313
IBOKOLO	2,090	2,108	4,198	858	11	382
N. MARAMA	15,851	17,371	33,222	6,905	82	405
SHIRAHA	3,696	4,070	7,766	1,623	19	409
ESHITARI	2,486	2,641	5,127	1,071	17	302
EBUCHENYA	3,785	4,259	8,044	1,648	15	536
INAYA	3,090	3,442	6,532	1,361	13	502
LUNZA	2,794	2,959	5,753	1,202	18	320
MUMIAS	99,320	107,136	206,456	45,981	581	355
EST WANGA	24,380	26,568	50,948	10,694	158	322
MAKUNGA	2,668	2,999	5,667	1,180	19	298

LUBINU	2,769	3,116	5,885	1,205	18	327
LUSHEYA	4,373	4,674	9,047	1,881	20	452
ELUCHE	3,801	3,915	7,716	1,824	32	241
MALAHA	3,863	4,211	8,074	1,601	20	404
MUNG'ANG'A	3,468	3,732	7,200	1,459	29	248
ISONGO	3,438	3,921	7,359	1,544	20	368
S. WANGA	17,044	19,227	36,271	7,975	95	382
BUKAYA	3,060	3,471	6,531	1,444	21	311
BUCHIFI	4,383	4,987	9,370	2,031	29	323
SHIKALAME	4,106	4,481	8,587	1,803	17	505
BUNGASI	2,636	3,160	5,796	1,392	15	386
MUSANDA	2,859	3,128	5,987	1,305	13	461

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
MATUNGU	20,493	22,335	42,828	9,400	149	287
KHOLERA	4,512	4,932	9,444	1,940	36	262
MAYONI	4,808	5,264	10,072	2,271	35	288
MATUNGU	6,409	6,727	13,136	3,107	34	386
KHALABA	4,764	5,412	10,176	2,082	44	231
KOYONZO	17,667	19,678	37,345	7,915	123	304
LUNGANYIRO	4,510	5,034	9,544	2,025	30	318
KOYONZO	2,536	2,873	5,409	1,177	15	361
INDANGALASI	2,935	3,366	6,301	1,359	27	233
NAMAMALI	4,134	4,521	8,655	1,781	28	309
NANYENI	3,552	3,884	7,436	1,573	23	323
CENTRAL	19,736	19,328	39,064	9,997	56	698
EKERO	2,603	2,915	5,518	1,229	13	424
LUREKO	3,433	3,832	7,265	1,568	24	303
MUMIAS TOWN	6,925	6,805	13,730	3,717	10	1,373
MUMIAS/ NUCLEAR	6,775	5,776	12,551	3,483	9	1,395
KHWISERO	36,497	42,193	78,690	16,039	146	539
WEST KISA	22,527	26,104	48,631	10,225	82	593
MUHAKA	1,803	2,226	4,029	914	8	504
IDOHO	1,112	1,259	2,371	524	6	395
ITUTI	1,009	1,147	2,156	453	3	719
ESHIROMBE	3,753	4,326	8,079	1,741	11	734

MUNDEKU	3,265	3,747	7,012	1,391	11	637
MULWANDA	3,747	4,292	8,039	1,652	15	536
WAMBULISHE	3,451	3,941	7,392	1,612	14	528
MUSHIANGUM	2,181	2,599	4,780	982	8	598
KHUSHIKU	2,206	2,567	4,773	956	6	796
EAST KISA	13,970	16,089	30,059	5,814	64	470
MWIKALIKHA	1,939	2,345	4,284	792	11	389
ESHIBINGA	2,999	3,370	6,369	1,267	15	425
MUNJITI	2,230	2,506	4,736	944	9	526
EMASATSI 13	2,866 477	3,340	6,206			1,183
MUNDOBELWA 529	3,936	4,528	8,464	1,628	16	

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
SABATIA	50,105	58,752	108,857	19,264	115	947
N. MARAGOLI	15,687	18,549	34,236	5,922	39	878
MUDETE	2,666	3,200	5,866	1,036	6	978
KIGAMA	2,686	3,125	5,811	972	7	830
MAMBAI	2,026	2,521	4,547	819	5	909
GAIGEDI	1,352	1,568	2,920	492	4	730
GAVUDIA	1,593	1,847	3,440	602	4	860
VOKOLI	1,497	1,804	3,301	565	4	825
KIVAGALA	2,058	2,397	4,455	771	6	743
LUSENGELI	1,809	2,087	3,896	665	3	1,299
W. MARAGOLI	15,199	17,802	33,001	5,993	32	1,031
KISATIRU	1,990	2,237	4,227	727	4	1,057
SOLONGO	2,498	2,910	5,408	1,000	5	1,082
VIYALO	2,367	2,788	5,155	950	6	859
IGUNGA	1,813	2,133	3,946	708	4	987
CHAVAKALI	2,932	3,290	6,222	1,137	5	1,244
KEGONDI	1,977	2,442	4,419	802	4	1,105
HAMUYUNDI	1,622	2,002	3,624	669	4	906
EST MARAGOLI	9,142	10,821	19,963	3,519	25	799
CHAVOGERE	1,558	1,811	3,369	610	6	562
BUDAYWA	1,395	1,696	3,091	533	4	773
BUGINA	1,574	1,902	3,476	627	4	869

ITEGERO	1,848	2,154	4,002	680	4	1,001
KEDOLI	1,418	1,702	3,120	535	3	1,040
CHAMAKANGA	1,349	1,556	2,905	534	4	726
EDZAVA	10,077	11,580	21,657	3,830	19	1,140
MUKINGI	1,833	2,199	4,032	671	3	1,344
MBALE	2,012	2,141	4,153	729	3	1,384
BUKULUNYA	1,269	1,398	2,667	450	2	1,334
MUNOYWA	1,363	1,693	3,056	552	3	1,019
DEMESI	1,636	1,840	3,476	656	4	869
LYADUYWA	1,964	2,309	4,273	772	4	1,068

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
IKOLOMANI	38,742	43,855	82,597	16,191	140	590
S. IDAKHO	18,247	21,084	39,331	7,551	59	667
IGUHU	3,996	4,643	8,639	1,605	16	540
SAVANE	2,998	3,255	6,253	1,206	10	625
MADIVINI	3,574	4,177	7,751	1,571	10	775
LUKOSE	1,958	2,387	4,345	887	8	543
SHISEJERI	2,551	3,009	5,560	961	6	927
SHITOLI	3,170	3,613	6,783	1,321	9	754
N. IDAKHO	20,495	22,771	43,266	8,640	81	534
MUSOLI	3,610	3,868	7,478	1,429	14	534
SHIKULU	3,810	4,148	7,958	1,519	21	379
SHIVAGALA	4,899	5,635	10,534	2,119	13	810
SHISESO	4,658	5,088	9,746	1,985	21	464
SHIBUNAME	3,518	4,032	7,550	1,588	12	629
HAMISI	57,593	64,653	122,246	21,374	157	779
TAMBUA	7,070	8,053	15,123	2,675	22	687
GIMARAKWA	2,234	2,543	4,777	851	8	597
IVORA	3,402	3,878	7,280	1,317	11	662
GAMALENGA	1,434	1,632	3,066	507	3	1,022
BANJA	9,316	10,937	20,253	3,524	27	750
KIPCHEKWEN	3,041	3,618	6,659	1,194	8	832
KAPSOTIK	2,731	3,009	5,740	1,002	6	957

GASIANGA 604	3,544	4,310	7,854	1,328	13	
GISAMBAI	15,738	17,656	33,394	6,042	42	795
GAVUDUNYI	3,655	4,254	7,909	1,437	9	879
GALONA	2,492	2,887	5,379	962	8	672
GIMAMOI	2,250	2,517	4,767	852	6	795
JEPKOYAI	4,046	4,414	8,460	1,531	11	769
TIGOI	3,295	3,584	6,879	1,260	8	860
SHAMAKHO	25,469	28,007	53,476	9,133	66	810
MUHUDU	3,922	4,423	8,345	1,463	13	642
JEPTULU	2,944	3,317	6,261	1,021	7	894
SELENDE	3,429	3,880	7,309	1,249	8	914
JIVOVORI	2,918	3,188	6,106	1,040	8	763
SEREM	3,836	4,240	8,076	1,439	7	1,154
ISHIRU	3,467	3,569	7,036	1,223	5	1,407
MUKUCHI	2,729	3,092	5,821	988	11	529
MULUNDU	2,224	2,298	4,522	710	7	646

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
VIHIGA	34,960	40,748	75,708	14,094	90	841
C. MRAGOLI	20,093	23,245	43,338	7,966	41	1,057
KIDUNDU	2,204	2,559	4,763	843	5	953
KEGOYE	3,336	3,851	7,187	1,232	7	1,027
IKUMBA	2,004	2,339	4,343	855	3	1,448
EMANDA	2,272	2,525	4,797	962	5	959
CHANGO	2,415	2,634	5,049	892	4	1,262
MUHANDA	1,777	2,191	3,968	737	5	794
MAGUI	1,631	1,838	3,469	618	4	867
VUNANDI	1,416	1,755	3,171	583	4	793
MBIHI	3,038	3,553	6,591	1,244	4	1,648
S.MARAGOLI	14,867	17,503	32,370	6,128	49	661
IDELERI	1,807	2,040	3,847	724	5	769
LUSIOLA	1,387	1,543	2,930	521	5	586
MAHANGA	2,575	3,240	5,815	1,072	7	831
CHAGENDA	1,858	2,132	3,990	788	10	399
MASANA	2,031	2,323	4,354	824	6	726
VIGULU	2,437	2,913	5,350	1,055	8	669
MADZUU	1,733	2,142	3,875	723	6	648
KISIENYA	1,039	1,170	2,209	421	2	1,105
MALAVA/KABRAS	71,953	76,859	148,812	24,285	527	282

N. KABRAS/CHEBAYWA	17,585	18,863	36,448	6,257	101	361
KIVAYWA	4,513	4,744	9,257	1,653	24	386
KILIBOTI	5,405	5,730	11,135	1,863	33	337
LUANDETI	3,618	3,947	7,565	1,334	23	329
MATURU	4,049	4,442	8,491	1,407	21	404
C. KABRAS	16,662	17,909	34,571	5,582	141	245
BUTALI	3,196	3,396	6,592	1,011	28	235
MALAVA	4,570	4,902	9,472	1,494	38	249
MATSAKHA	5,074	5,378	10,452	1,710	45	232
SURUNGAI	3,822	4,233	8,055	1,367	30	269
W. KABRAS	14,782	15,547	30,329	5,024	110	276
LUKUME	4,186	4,452	8,638	1,504	27	320
MUGAI	3,723	3,758	7,481	1,266	27	277
BURUNDU	2,827	3,112	5,939	953	20	297
SAMITSI	4,046	4,225	8,271	1,301	36	230

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
S. KABRAS	22,924	24,540	47,464	7,422	175	271
MAHIRA	3,789	4,073	7,862	1,218	29	271
SHAMBERERE	4,026	4,389	8,415	1,310	23	366
SHIANDA	4,433	4,869	9,302	1,460	20	465
CHEMUCHE	4,899	4,950	9,849	1,447	52	189
CHESERO	5,777	6,259	12,036	1,987	51	236
LUGARI	52,575	53,760	106,335	17,193	563	189
NZOAIA	11,922	12,425	24,347	4,167	106	230
NZOAIA	1,678	1,721	3,399	584	33	103
NAMUNYIRI	3,806	4,038	7,844	1,288	18	436
MUSEMUA	2,132	2,183	4,315	727	29	149
MOI'S BRIDGE	4,306	4,483	8,789	1,568	26	338
SOY 192	15,868 165	15,847	31,715			4,824
SOY SERGOIT	6,311	6,054	12,365	2,173	106	117
KONGONI	4,396	4,525	8,921	1,234	42	212
SANGO	5,161	5,268	10,429	1,417	44	237
CHEKALINI	11,512	11,964	23,476	3,811	123	191
LUGARI	6,634	6,706	13,340	2,193	81	165
CHEKALINI	4,878	5,258	10,13	1,618	42	241
LUMAKANDA	13,273	13,524	26,797	4,391	142	189
LUMAKANDA	7,009	7,019	14,028	2,341	59	238

MAUTUMA	6,264	6,505	12,769	2,050	83	154
LURAMBI	54,441	59,414	113,855	21,749	380	300
BUNYALA	22,866	25,247	48,113	9,190	187	257
NAMBACHA	4,363	4,792	9,155	1,703	33	277
SIVILIE	3,135	3,392	6,527	1,228	23	284
NAMIRAMA	2,797	3,136	5,933	1,042	24	247
SIRIGOI	3,340	3,632	6,972	1,349	33	211
BUDONGA	4,681	5,204	9,885	1,970	33	300
SIDIKHO	4,550	5,091	9,641	1,898	41	235
N. BUTSTSO	16,737	17,957	34,694	6,680	100	347
ESHINOYI	4,310	4,566	8,876	1,761	28	317
INGOTSE	2,922	3,132	6,054	1,159	16	378
INDANGALAS	3,431	3,871	7,302	1,314	19	384
MATIHA	3,671	3,795	7,466	1,445	17	439
ESUMEYIA	2,403	2,593	4,996	1,001	20	250

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
S.BUTSOTSO	14,838	16,210	31,048	5,879	93	334
BUKURA	4,416	4,729	9,145	1,713	18	508
ESHIBEYE	4,491	4,941	9,432	1,814	38	248
SHIKOTI	2,286	2,533	4,819	921	12	402
SHIYUNZU/ ESHISIRU	3,645	4,007	7,652	1,431	25	306
EMUHAYA	69,476	81,360	150,836	30,263	179	843
E. BUNYORE	13,542	16,161	29,703	5,797	28	1,061
EBUSUNDI	3,575	4,329	7,904	1,537	8	988
IBOONA	2,469	2,801	5,270	928	5	1,054
EMUTSALWA	1,682	2,079	3,761	765	4	940
ESIANDA	2,146	2,658	4,804	964	3	1,601
EBUBAYI	3,670	4,294	7,964	1,603	8	996
W. BUNYORE	24,379	28,366	52,745	10,657	58	909
EMBALI	4,632	5,277	9,909	2,007	15	661
EMUSIRE	3,987	4,693	8,680	1,721	11	789
ESSABA	3,560	4,386	7,946	1,594	8	993
EBUSIEKWE	4,316	5,118	9,434	1,873	11	858
ITUMBU	2,624	3,068	5,692	1,162	5	1,138
EBUSIKHALE	5,260	5,824	11,084	2,300	8	1,386
N. BUNYORE	16,645	19,873	36,518	7,252	47	777
EBUSIRATSI	2,495	2,935	5,430	1,132	7	776

EBULONGA	2,186	2,500	4,686	967	6	781
BUKHUNZA	2,041	2,487	4,528	883	6	755
EBUSAMIA	2,545	3,092	5,637	1,090	7	805
MAKUNDA	3,060	3,575	6,635	1,290	9	737
FBUSILOLI	1,944	2,507	4,451	884	5	890
BUNANGWE	2,374	2,777	5,151	1,006	7	736
. BUNYORE	14,910	16,960	31,870	6,557	46	693
EKWANDA	3,207	3,660	6,867	1,468	9	763
BUSAKAMI	3,755	4,305	8,060	1,630	7	1,151
MWITUBWI	1,299	1,471	2,770	535	3	923
BWIRANYI	1,693	1,942	3,635	763	8	454
SIANDUMBA	2,330	2,735	5,065	1,029	11	460
EBUTANYI	2,626	2,847	5,473	1,132	8	684

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHS	SK.m	Den
SHINYALU	55,022	60,718	115,740	20,628	427	271
C. ISUKHA	22,542	25,454	47,996	8,544	290	166
VIRHEMBE	3,818	4,035	7,853	1,467	14	561
MUKULUSU	2,878	3,119	5,997	1,089	11	545
SHAGUNGU	4,848	5,773	10,621	1,667	18	590
SHINYALU	3,931	4,662	8,593	1,623	11	781
SHISWA	3,367	3,597	6,964	1,260	12	580
MURHANDA	3,700	4,268	7,968	1,438	12	664
KAKAMEGA FOREST	0	0	0	0	212	0
W. ISUKHA	19,594	22,532	42,126	7,743	62	679
SHITACHI	3,316	4,231	7,547	1,353	7	1,078
MUSENO	2,123	2,380	4,503	810	6	751
MUKHONJE	2,797	3,005	5,802	989	11	527
MUGOMARI	4,013	4,624	8,637	1,621	12	720
SHIDODO	3,555	3,976	7,531	1,446	11	685
LUKOSE	3,790	4,316	8,106	1,524	15	540
E. ISUKHA	12,886	12,732	25,618	4,341	75	342
LUBAO	3,864	3,060	6,924	1,202	16	433
ILEHO	5,571	5,935	11,506	1,854	34	338
KAMBILI	3,451	3,737	7,188	1,285	25	288
MUNICIPA.	31,660	32,136	63,796	14,061	48	1,329
SHIRERE	11,121	11,615	22,736	4,672	25	909

TOWNSHIP	7,577	7,558	15,135	3,466	8	1,892
SICHIRAI	12,962	12,963	25,925	5,923	15	1,728

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
NANDI District	218,613	215,000	433,613	80,038	2,784	156
MOSOP	48,810	49,269	98,079	16,476	745	132
KABIYET	6,034	5,904	11,938	2,098	80	149
NDULELE	2,454	2,459	4,913	887	31	158
LOLKERINGET	1,935	1,830	3,765	641	29	130
KAMASIA	1,645	1,615	3,260	570	20	163
KABIEMIT	8,761	8,874	17,635	2,750	126	140
KAPKARREN SALIENT	1,626	1,671	3,297	486	25	132
KABIEMIT	2,311	2,308	4,619	802	31	149
LABORET	2,334	2,359	4,693	775	35	134
NDALAT	2,490	2,536	5,026	687	35	144
LELMOKWO	7,719	8,098	15,817	2,576	124	128
LELMOKWO	1,394	1,386	2,780	485	24	116
ITIGO	1,128	1,206	2,334	375	22	106
CHEPKOIYO	1,502	1,516	3,018	468	24	126
KABISAGA	2,750	2,943	5,693	916	39	146
BIRIBIRIET	945	1,047	1,992	332	15	133
CHEPTERWAI	5,989	6,101	12,090	2,110	89	136
CHEPTERWAI	2,536	2,577	5,113	890	32	160
SOIMINING	1,833	1,923	3,756	669	30	125
SURUNGAI	1,620	1,601	3,221	551	27	119
KURGUNG	4,527	4,520	9,047	1,496	72	126

SARORA	1,582	1,583	3,165	464	29	109
KAPTICH	1,819	1,800	3,619	629	27	134
KURGUNG	1,126	1,137	2,263	403	16	141
SANGALO	6,479	6,628	13,107	2,264	130	101
KAMWEGA	2,168	2,175	4,343	766	40	109
KEBULONIK	2,152	2,229	4,381	766	38	115
SANGALO	2,159	2,224	4,383	732	52	84
KOSIRAI	5,738	5,689	11,427	1,936	72	159
KOSIRAI	2,715	2,683	5,398	901	38	142
CHEPTERIT	2,098	2,086	4,184	746	18	232
MOSORIOT	925	920	1,845	289	16	115
MUTWOT	3,563	3,455	7,018	1,246	52	135
NGECHEK	1,479	1,530	3,009	473	22	137
MUTWOT	2,084	1,925	4,009	773	30	134

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
KAPSABET	52,423	53,003	105,426	18,977	583	181
KAPTEL	8,827	8,873	17,700	2,836	150	118
KAPTEL	2,158	2,098	4,256	688	34	125
KOMBE	2,453	2,320	4,773	769	52	92
KAMOIWO	3,050	3,214	6,264	987	48	131
KAPSISIYWA	1,166	1,241	2,407	392	16	150
CHEMUNDU	16,670	16,642	33,312	6,746	139	240
CHEMUNDU/ BARATON	3,182	3,218	6,400	1,104	36	178
KAPTILDIL	1,183	1,256	2,439	403	19	128
KIMINDA	3,606	3,526	7,132	1,148	25	285
KAMOBO	3,297	3,404	6,701	1,263	45	149
KAPSABET TOWNSHIP	5,402	5,238	10,640	2,828	14	760
KAPTUMO N.	7,828	7,554	15,382	2,637	100	154
KEBURO	1,003	934	1,937	319	8	242
CHEPKONGONY	1,299	1,276	2,575	406	34	76
IBANJA/ MOSOMBOR	2,273	2,159	4,432	795	18	246
KABOI	3,253	3,185	6,438	1,117	40	161
KAPKANGANI	19,098	19,934	39,032	6,758	194	201
CHEPKUMIA	3,565	3,413	6,978	1,416	61	114
CHEPSONOI	5,097	5,558	10,655	1,845	34	313
KAPCHORWA	3,733	4,037	7,770	1,237	45	173

—	KIPTUIYA	3,875	3,977	7,852	1,361	32	245
—	CHEBOITE	2,828	2,949	5,777	899	22	263
—	ALDAI	39,794	41,000	80,794	13,884	398	203
—	KAPTUMO S.	6,020	6,042	12,062	2,028	79	153
—	NDURIO	959	1,001	1,960	332	11	178
—	KESOGON	1,246	1,205	2,451	405	21	117
—	KAPLOLEI	1,366	1,348	2,714	469	16	170
—	KAPSAOS	1,042	1,054	2,096	368	18	116
—	KOYO	1,407	1,434	2,841	454	13	219
—	CHEMASE	3,107	2,987	6,094	1,251	63	97
—	KAPKUONG	738	681	1,419	291	16	89
—	KIBIGONG	1,083	1,058	2,141	393	23	93
—	CHEMURSOI	333	364	697	166	9	77
—	KIBISEM	953	884	1,837	401	15	122

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
MARABA	11,957	11,972	23,929	4,187	137	175
CHEBILAT	3,246	3,328	6,574	1,105	28	235
BONJOGE	1,103	1,113	2,216	409	12	185
KAPTUMEK	1,803	1,829	3,632	685	46	79
KONGORO	2,449	2,475	4,924	823	23	214
KIBWARENG	3,356	3,227	6,583	1,165	28	235
KEMELOI	12,026	12,902	24,928	4,009	75	332
KOIBARAK	3,060	3,320	6,380	978	12	532
MUGEN	6,295	6,732	13,027	2,161	50	261
CHEBARA	2,671	2,850	5,521	870	13	425
TERIK	6,684	7,097	13,781	2,409	44	313
KAPSENGERE	2,371	2,548	4,919	841	8	615
KAPKURES	2,304	2,376	4,680	803	24	195
KAPKERER	2,009	2,173	4,182	765	12	349
KILIBWONI	22,798	22,670	45,468	7,941	254	179
OLESSOS	8,355	8,169	16,524	2,919	88	188
KOILLOT	2,177	2,136	4,313	702	26	166
OLESSOS	1,414	1,363	2,777	549	10	278
SIGILAI	1,891	1,829	3,720	663	23	162
LELWAK	1,046	1,024	2,070	374	12	173
KIBABET	796	813	1,609	257	7	230
CHEPKUNYUK	1,031	1,004	2,035	374	10	204

KAPLAMAI	8,516	8,504	17,020	2,918	77	221
KAPLAMAI	1,967	1,972	3,939	670	19	207
KIPSIGAK	1,338	1,369	2,707	438	11	246
KABIRIRSANG	1,188	1,117	2,305	406	10	231
SIWO	1,195	1,134	2,329	415	11	212
KIPTURE	1,358	1,362	2,720	469	12	227
ARWOS	1,470	1,550	3,020	520	14	216
KILIBWONI	5,927	5,997	11,924	2,104	89	134
TULON	1,473	1,459	2,932	476	31	95
KILIBWONI	1,562	1,608	3,170	568	19	167
NDUBENETI	899	1,028	1,927	361	13	148
SONGOLIET	1,227	1,159	2,386	420	14	170
LOLMININGAI	766	743	1,509	279	12	126

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
TINDIRET	54,788	49,058	103,846	22,760	804	129
NANDI HILL	11,627	10,092	21,719	5,185	153	142
KOSOIYWO	6,377	5,579	11,956	2,800	41	292
KAPSIMOTWO	3,369	3,058	6,427	1,485	54	119
CHEMILIL	1,881	1,455	3,336	900	58	58
CHEBARUS	8,734	7,359	16,093	3,838	77	209
TAITO	2,486	2,186	4,672	1,074	30	156
SIRET	3,666	2,886	6,552	1,721	27	243
KAPLELMET	2,582	2,287	4,869	1,043	20	243
MOGOBICH	11,216	8,827	20,043	5,082	164	122
KIPKEIKEI	4,947	3,680	8,627	2,377	44	196
CHEPTILILIK	3,064	2,724	5,788	1,172	22	263
MOGOBICH	2,942	2,204	5,146	1,403	25	206
CERENGONIK FOREST	263	219	482	130	73	7
SONGHOR	6,210	6,104	12,314	2,442	105	117
SONGHOR	3,284	3,113	6,397	1,348	75	85
KABIRER	2,926	2,991	5,917	1,094	30	197
TINDIRET	10,244	9,853	20,097	3,863	221	91
TINDIRET	1,279	1,258	2,537	427	54	47
KABUTIE	1,960	1,963	3,923	768	30	131
CHEPTONON	1,602	1,557	3,159	538	26	122
CHEMAMUL	3,147	2,729	5,876	1,308	83	71

KAPLELACH	2,256	2,346	4,602	822	28	164
MITEITEI	6,757	6,823	13,580	2,350	84	162
METEITEI	2,327	2,445	4,772	826	18	265
KAPKOROS	1,924	1,951	3,875	634	20	194
KAMELIL	2,506	2,427	4,933	890	46	107

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
BUNGOMA District	358,111	377,874	735,985	126,054	3,072	240
TONGARENI	37,592	39,387	76,979	11,414	375	205
NAITIRI	20,962	21,901	42,863	6,339	190	226
NAITIRI	3,493	3,618	7,111	1,087	42	169
MTAKALO	3,355	3,500	6,855	940	23	298
MILIMA/ KAMUKUYWA	6,423	6,848	13,271	1,992	64	207
KABUYEFWE	3,822	3,892	7,714	1,162	34	227
KIBISI	3,869	4,043	7,912	1,158	27	293
NDALU	16,630	17,486	34,116	5,075	185	184
NDALU	3,896	3,894	7,790	1,219	58	134
TONGARENI	5,649	6,184	11,833	1,779	47	252
SOYSAMBU	3,798	4,001	7,799	1,180	32	244
KIMININI	3,287	3,407	6,694	897	48	139
WEBUYE	62,189	65,313	127,502	21,631	397	321
WEBUYE	22,037	22,070	44,107	8,949	131	337
KHALUMULI	5,279	5,512	10,791	1,827	54	200
MARAKA	11,541	11,062	22,603	5,354	36	628
MUCHI	5,217	5,496	10,713	1,768	41	261
NDIVISI	20,582	22,180	42,762	6,711	129	331
MAKUSELWA	5,267	5,819	11,086	1,813	34	326
NDIVISI	4,453	4,616	9,069	1,380	19	477

MAKEMO	4,099	4,372	8,471	1,322	34	249
MIHUU	6,763	7,373	14,136	2,196	42	337
MISIKHU	11,255	12,167	23,422	3,478	70	335
MISIKHU	6,014	6,375	12,389	1,801	32	387
KITUNI	5,241	5,792	11,033	1,677	38	290
BOKOLI	8,315	8,896	17,211	2,493	67	257
MIENDO	4,235	4,483	8,718	1,335	37	236
BOKOLI	4,080	4,413	8,493	1,158	30	283
KIMILILI	33,454	35,264	68,718	12,230	178	386
KAMUKUYWA	14,683	15,408	30,091	5,140	86	350
KAMUKUYWA	8,285	8,659	16,944	2,938	46	368
SIKHENDU	6,398	6,749	13,147	2,202	40	329

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
KIMILILI	18,771	19,856	38,627	7,090	92	420
KIMILILI	7,059	7,498	14,557	2,590	39	373
KIBINGEI	8,758	9,363	18,121	3,098	49	370
KIMILILI TOWNSHIP	2,954	2,995	5,949	1,402	4	1,487
KAPSOKWONY	21,044	21,392	42,436	7,221	169	251
KAPSOKWONY	10,286	10,403	20,689	3,687	89	232
KIBUK	2,807	2,704	5,511	1,115	22	251
KAPSOKWONY	2,062	2,073	4,135	759	26	159
KAMUNERU	2,350	2,496	4,846	796	12	404
NAMORIO	3,067	3,130	6,197	1,017	29	214
KAPTAMA	10,758	10,989	21,747	3,534	80	272
KONGIT	2,698	2,749	5,447	893	25	218
CHEMOGE	2,001	2,060	4,061	687	13	312
KOBOYWO	2,967	3,016	5,983	931	20	299
KAPTAMA	3,092	3,164	6,256	1,023	22	284
SIRISIA	67,605	71,996	139,601	22,131	442	316
S. MALAKISI	9,328	9,786	19,114	3,239	68	281
SITABICHA	2,474	2,696	5,170	811	21	246
MWALIE	2,982	3,051	6,033	1,139	18	335
S. KULISIRU	3,872	4,039	7,911	1,289	29	273
LWANDANYI	4,303	4,558	8,861	1,522	26	341
CHEBUKUYI	2,505	2,608	5,113	886	15	341

MAYEKWE	1,798	1,950	3,748	636	11	341
SIRISIA	12,780	13,536	26,316	4,111	79	333
S. NAMWELA	3,916	4,129	8,045	1,144	26	309
CEN. NAMWELA	4,149	4,296	8,445	1,350	19	444
N. KULISIRU	4,715	5,111	9,826	1,617	34	289
NAMUMBILA	4,935	5,223	10,158	1,655	36	282
E. WAMONO	3,129	3,364	3,364	6,593	2	282
MACHAKHA	1,806	1,859	3,665	613	13	282
CHWELE	14,384	15,658	30,042	4,788	83	362
CHWELE	7,213	7,992	15,205	2,424	42	362
MUKUYUNI	7,171	7,666	14,837	2,364	41	362

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
N. BUKUSU	21,875	23,235	45,110	6,816	150	301
S. NALONDO	8,332	8,697	17,029	2,479	59	289
W. NALONDO	6,624	7,104	13,728	2,155	42	327
N. NALONDO	6,919	7,434	14,353	2,182	49	293
CHEPTAISI	36,493	37,789	74,282	11,912	217	342
KOPSIRO	19,493	19,976	39,469	6,355	137	288
CHEBYUK	4,825	4,769	9,594	1,569	46	209
EMMIA	7,683	7,785	15,468	2,590	54	286
KAPKATENY	3,987	4,203	8,190	1,207	22	372
CHELEBEI	2,998	3,219	6,217	989	15	414
CHEPTAISI	17,000	17,813	34,813	5,557	80	435
CHEPKUBE	4,821	5,290	10,111	1,618	27	374
CHEPTAIS	4,374	4,582	8,956	1,528	15	597
SASURI	3,125	3,197	6,322	956	17	372
CHESIKAKI	4,680	4,744	9,424	1,455	21	449
KANDUYI	99,734	106,733	206,467	39,515	671	308
E. BUKUSU	27,431	28,817	56,248	10,395	210	268
NAMIREMBE	4,684	5,100	9,784	1,704	35	280
N. SANG'ALO	6,772	6,570	13,342	2,950	51	262
W. SANG'ALO	7,814	8,412	16,226	2,775	59	275
E. SANG'ALO	8,161	8,735	16,896	2,966	65	260
W. BUKUSU	21,446	23,350	44,796	8,299	168	267
MUKWA	3,532	3,823	7,355	1,283	27	272

KIBUKE	4,747	5,211	9,958	1,873	36	277
NAKHWANA	4,834	5,229	10,063	1,919	35	288
WEST SIBOTI	3,967	4,415	8,382	1,573	37	227
EAST SIBOTI	4,366	4,672	9,038	1,651	33	274
BUMULA	11,624	12,532	4,156	4,375	93	260
KHASOKO	3,679	3,879	7,558	1,382	25	302
N. MYANGA	3,285	3,617	6,902	1,231	27	256
S. MYANGA	4,660	5,036	9,696	1,762	41	236
KANDUYI	7,562	8,435	15,997	2,742	49	326
N. KANDUYI	7,562	8,435	15,997	2,742	49	326
MUSIKOMA	20,158	20,867	41,025	9,299	59	695
S. KANDUYI	7,902	8,549	16,451	3,196	32	514
TOWNSHIP	12,256	12,318	24,574	6,103	27	910

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
S. BUKUSU	11,513	12,732	24,245	4,405	92	264
EAST MATEKA	5,426	6,007	11,433	2,146	41	279
WEST MATEKA	6,087	6,725	12,812	2,259	51	251
MT. ELGON FOREST	0	0	0	0	623	0

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
BUSIA District	198,531	224,356	422,887	82,966	1,652	256
AMUKURA	37,360	40,404	77,764	15,478	322	242
WEST TESO	19,623	21,376	40,999	8,426	136	301
ANGOROM	2,581	2,815	5,396	1,032	22	245
ALUPE	6,700	7,332	14,032	3,093	27	520
CHAKOL	5,142	5,516	10,658	2,079	43	248
ASINGE	5,200	5,713	10,913	2,222	44	248
SOUTH TESO	17,737	19,028	36,765	7,052	186	198
OKOR	6,379	6,864	13,243	2,554	62	214
AMUKURA	5,041	5,268	10,309	1,921	50	206
OSURETE	4,006	4,478	8,484	1,639	39	218
KAMOLO	2,311	2,418	4,729	938	35	135
BUTULA	34,282	40,922	75,204	15,791	265	284
WEST MARACH	8,403	10,312	18,715	3,831	53	353
BUMALA	3,149	3,988	7,137	1,468	20	357
BUJUMBA	2,888	3,486	6,374	1,335	16	398
IKONZO	2,366	2,838	5,204	1,028	17	306
EAST MARACH	14,204	16,619	30,823	6,451	103	299
ALUKONGO	4,397	5,044	9,441	2,007	33	286
ELUKHARI	5,467	6,510	11,977	2,471	36	333
TINGOLO	4,340	5,065	9,405	1,973	34	277

CEN. MARACH	11,675	13,991	25,666	5,509	109	235
KINGANDOLE	2,861	3,427	6,288	1,337	18	349
BUKHALALIRE	2,705	3,363	6,068	1,293	35	173
ESIKOMA	3,016	3,658	6,674	1,439	22	303
BULWANI	3,093	3,543	6,636	1,440	34	195
NAMBALE	52,546	58,492	111,038	21,636	412	270
EST BUKHAYO	10,949	11,990	22,939	4,192	118	194
LUPIDA	2,671	2,813	5,484	991	28	196
MUSOKOTO	2,534	2,853	5,387	991	36	150
BUYOFU	5,744	6,324	12,068	2,210	54	223

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHS	SK.m	Den
CEN BUKHYO	11,622	13,014	24,636	4,528	110	224
MALANGA	3,635	4,197	7,832	1,510	37	212
EKISOKO	3,308	3,754	7,062	1,303	31	228
NAMBALE	3,214	3,494	6,708	1,113	31	216
SIEKUNYA	1,465	1,569	3,034	602	11	276
WST BUKHYO	29,975	33,488	63,463	12,916	184	345
MATAYOS	6,285	6,894	13,179	2,551	46	287
NASEWA	3,508	3,917	7,425	1,388	20	371
BUSIBWABO	2,854	3,219	6,073	1,111	30	202
BUGENGI	5,579	6,257	11,836	2,313	46	257
MUNDIKA	2,670	2,977	5,647	1,068	23	246
MAENJE	2,837	3,125	5,962	1,161	14	426
CEN. MJINI	6,242	7,099	13,341	3,324	5	2,668
FUNYULA	29,364	33,997	63,361	11,399	256	248
NOTH SAMIA	15,056	17,663	32,719	5,896	118	277
MUNDOMA	2,297	2,602	4,899	878	18	272
BUKNGALA A.	1,521	1,816	3,337	566	19	176
BUKNGALA B.	959	1,071	2,030	383	8	254
LUANDA	2,638	3,197	5,835	1,024	14	417
NAMBUKU - LUGALA	1,323	1,615	2,938	551	9	326
LUCHULULO/ BUKHULUNGU	3,387	4,024	7,411	1,256	28	265

WAKHUNGU/ ODIADO	2,931	3,338	6,269	1,238	22	285
Sth SAMIA	14,308	16,334	30,642	5,503	138	222
BUKIRI	1,750	2,028	3,778	732	20	189
BUBURI	1,884	2,240	4,124	747	21	196
BUJWANG'A	1,844	2,089	3,933	721	15	262
BUSEMBE	2,486	2,865	5,351	878	22	243
BUTABONA	3,461	3,881	7,342	1,349	34	216
SIGALAME	2,883	3,231	6,114	1,076	26	235
BUDALANGI	18,392	21,617	40,009	8,827	192	208
WST BNYALA	6,201	7,186	13,387	2,740	49	273
BULEMIA	1,844	2,202	4,046	832	27	150
SISENYE	1,204	1,367	2,571	522	8	321
BUKOMA	3,153	3,617	6,770	1,386	14	484

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Appendix 9: Kari Kakamega OD/Costing Workshop Groups

GROUP 1	GROUP 2	GROUP 3
ORODHO	WANABACHA	OTIENO
ONDWASSY	ROTICH	ACHIENG
AMBANI	ODONGO	OJIEM
OGARO	WAMBULWA	AKWALE
OTSYULA	RACHIER	ODUORI
NDOLO	MBURU	GUDAHI
NJERI	MOSE	SHIKUKU
AKANGA	OBIERO	MAKUNE
WASWA	ODENYA	INZAULE
AJANGA	AMBOKA	MAMBILI
KISUYA	SPREY	SALASYA
MULAMULA	LINYONYI	KHASIANI

Appendix 10: TRAINING WORKSHOP ATTENDANTS

1. A. B. ORODHO
2. J. W. WANABACHA
3. K. OTIENO
4. H. O. ONDWASSY
5. J. O. ACHIENG
6. G. I. AMBANI
7. O.M. ODONGO
8. J. O. OJIEM
9. M. WAMBULWA
10. M. AKWALE
11. R. M. OTSYULA
12. G. O. RACHIER
13. C.O. A. ODUORI
14. P. J. NDOLO
15. C. M.MBURU
16. S. GUDAH
17. J.N. BERO
18. J. MOSE
19. S.Y. SHIKUKU
20. D. AKANGA
21. H. M. OBIERO
22. N. MAKUNE
23. P.W. WASWA
24. D.K. ROTICH
25. V. N. ONGARO
26. J. O. ODENYA
27. S. S. INZAULE
28. S. I. AJANGA
29. H. AMBOKA
30. G. K. MAMBIRI
31. L KISUYA
32. B. D. SALASYA
33. G. KHASIANI
34. H.H. MULAMULA
35. L. H. SPREY
36. A. LINYONYI

Appendix 11: Study Materials

PLANNING AND CONTROL

INTRODUCTION AND PURPOSE

The two primary functions of the managers of an entity are planning and controlling operations. In business, government, and most other group activities, a planning and control system (also called managerial budgeting) is widely used in performing managerial planning and control responsibilities. The term **comprehensive profit planning and control** is defined as a systematic and formalized approach for performing significant phases of the management planning and control functions. Specifically, it involves:

- ◆The development and application of broad and long-range objectives for the enterprise;
- ◆The specification of enterprise goals;
- ◆A long-range profit plan developed in broad terms;
- ◆A short-range profit plan detailed by assigned responsibilities (divisions, products, projects);
- ◆A system of periodic performance reports detailed by assigned responsibilities; and
- ◆Follow-up procedures.

THE ROLE OF MANAGEMENT

The effectiveness with which an entity is managed is usually recognized as the single most important factor in its long-term success. Success is measured in terms of accomplishment of the entity's goals. **Management** can be defined as the process of defining entity goals and implementing activities to attain those goals by efficient use of human, material, and capital resources. The **management process** is a set of interdependent activities used by the management of an organization to perform the following functions of management: planning, staffing, leading, and controlling.

Goal Orientation

Both business and non-business endeavours must have objectives and goals. In business endeavours, the primary goal orientations are:

- ◆Return on investment and
- ◆Contribution to the economic and social improvement of the broader environment.

Managerial Functions

1. Planning: The process of developing enterprise objectives and selecting a future course of action to accomplish them.

- Establishing enterprise objectives
- Developing premises about the environment in which they are to be accomplished
- Selecting a course of action for accomplishing the objectives
- Initiating activities necessary to translate plans into action
- Current re-planning to correct current deficiencies

2. **Organizing:** The process of relating employees to their jobs

Dividing work among groups and individuals

Coordinating group and individual activities

Establishing managerial authority

3. **Staffing:** The process of relating skills to the set objectives

Human resource management

Fitting individual competencies to tasks

Establishing a climate for employees to realize their full potential

4. **Leading/Directing and Influencing:** The process of motivating all to willingly and harmoniously accomplish set goals

5. **Controlling:** The process of assuring efficient performance to attain the enterprise objectives

Establishing goals and standards

Comparing measured performance against the established goals and standards

Establishing responsibility and taking corrective action at source

Reinforcing successes and correcting shortcomings

SOME BEHAVIOURAL ASPECTS OF THE MANAGEMENT PROCESS

<u>Management Activity</u>	<u>Some critical Behavioral Factors</u>
1. Planning: goals, policies, standards etc.	<ul style="list-style-type: none"> • Participation versus nonparticipation • Planning process • Communication of plans • Use of plans and standards
2. Organizing	<ul style="list-style-type: none"> • Organizational design • Delegation of authority and responsibility • Job specification • Line and staff conflict
3. Staffing	<ul style="list-style-type: none"> • Employment process • Pay scales, incentives • Job enrichment, career opportunities • Future expectations of employees
4. Leadership	<ul style="list-style-type: none"> • Style of leadership • Attitude towards employees • Leading from the back, front
5. Controlling: (including performance evaluation)	<ul style="list-style-type: none"> • Method of setting goals and performance stds standards • Meaning of goals and standards • Method of measuring performance • Method of reporting and appraising perf mce • Corrective action • Rewards and punishment • Follow-up activities • Risk attitude of managers • Evaluation based on controllable performance • Achieving goals congruence • Provision of incentives

Twelve Principles of Organizational Change

1. Understand the external environment in which your company operates.
 - *The boiled frog*
 - *Retain customers, build market share, outpace your competitors*
 - *Capitalize on new business opportunities*
 - *Anticipate changes in the political environment*
2. Enlist people's passion and energy to support your company's mission and strategy.
 - *If you do, people will cross rivers for you*
3. While charismatic leadership may grab the headlines, remember it is steady and consistent leadership that actually results in changes to the bottom line.
 - *'Vinyangarika'*
4. To change an organization's culture, you must first change people's behavior
 - *Change people's everyday behavior on the job*
 - *Stress new ways of working in your organization*
 - *Communicate with people frequently*
 - *Reinforce work expectations with right kind of policies and procedures*
 - *Ultimately, a new culture will emerge*
5. Let service to customers drive your company's structure
 - *Structure of an organization should be developed in response to the nature of the corporate mission and strategy.*
6. If you implement the right systems to support people in their work that will help create the 'climate of alignment' you need to success
 - *To be successful, change effort must impact on organization at all levels*
 - *Upgrade technology to enable people to do their job better*
 - *Overhaul old-style performance appraisal*
7. Managers must give employees what they need to succeed or, in some cases get out of the way
 - *Change needs new management practices*
 - *e.g.. Team-based or individual performance?*
 - *Educate managers on best ways be team leaders of work groups*
8. Teamwork may not be part of your culture, but it's essential to your success
 - *In today's workplaces, collaboration and interdependence are the values that count.*
9. A productive employee is a happy employee
 - *Stress the important link between what they do and the health of the company*

10. Strive for good fit between the skills people have and the everyday jobs they do

- *Paying attention to this detail can make all the difference*

11. Remember employees are people too

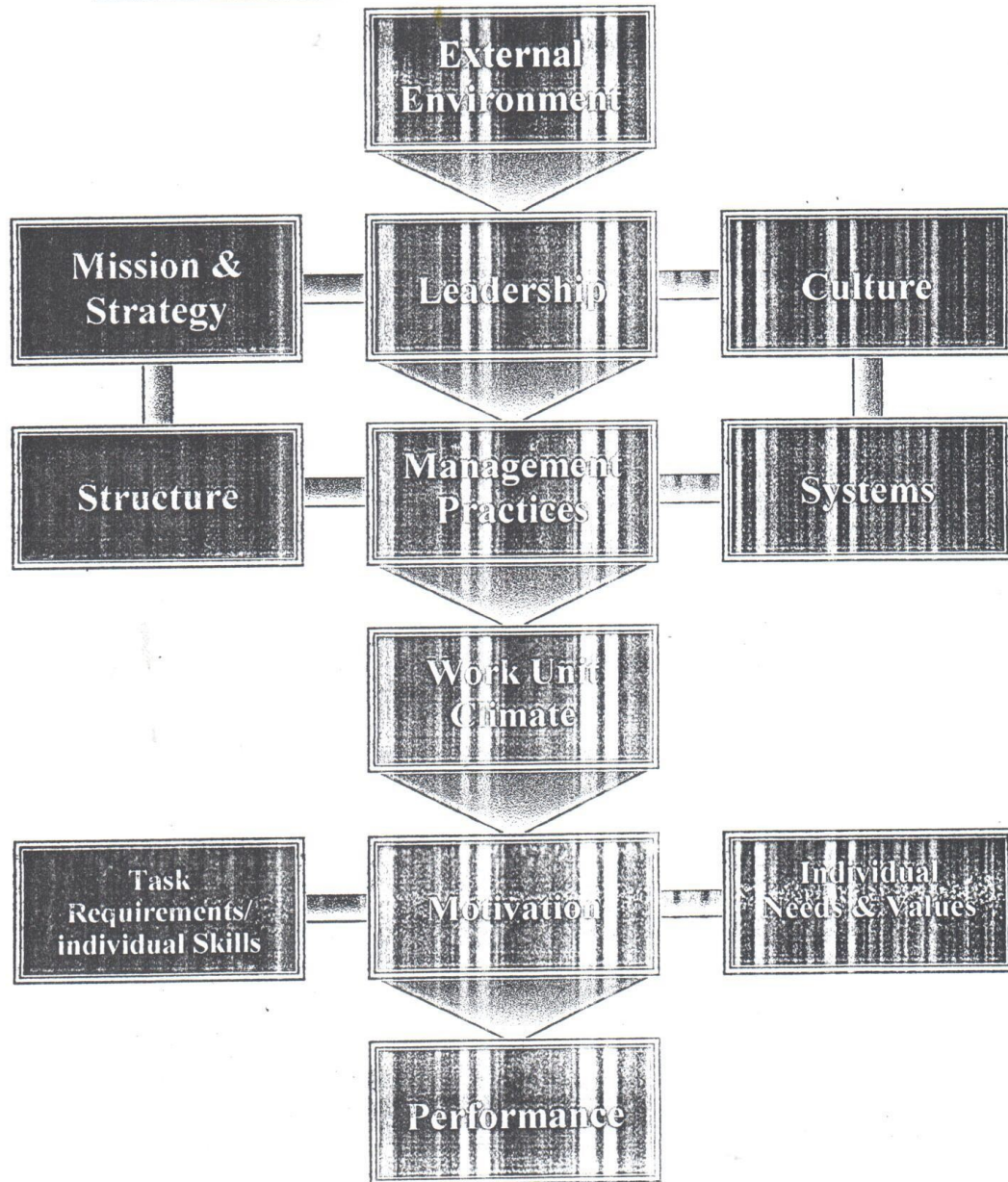
- *Create a new kind of partnership with employee*
- *Career development, coaching and mentoring*

12. Beware the false indicators of success. Recognize that a broad and balanced approach is the only way.

- *'We have successfully reduced our staff by 30%'*
- *'We are letting out office space released as a result'*
- *'We are reporting a small profit as a result'*
- *'One year later 'We are unable to meet our production targets'*
- *'We should have retained so-and-so'*

What was the problem, people or systems, finance, equipment, or technology?!!

Understanding the Dynamics of Organisation Change



THE 3 C's

Company

Qualities of an effective company

1. Vision-directed
2. Innovative
3. Flexible/Adaptive
4. Customer-driven

What are our products? What were SWOT options on products?

The Competition

Analysis of competition

1. Who are they?
2. What is their financial situation?
3. How are they organized?
4. What products/services selling?
5. At what prices?
6. Their market share?
7. What product features?
8. What benefits are they claiming?
9. What are their strengths, weaknesses?
10. What is their retaliation potential?

Economic

Social

Political

Adverse media campaign

What is our ability to respond?

Customer/Client

Segmentation criteria

1. Type of customer
2. User needs and preferences
3. How purchasing decisions are made

Market segmentation

1. Which segment should we address?
2. Do we need a different organization?
3. Are we prepared to make the investment?
4. Can different segments bear a different price?

Actions arising from market segmentation

1. Claim different benefits?
2. Advertise in different media?
3. Offer different sales support?

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
Sth BUNYALA	7,654	9,204	16,858	3,985	98	172
BUOFU	1,732	2,079	3,811	921	19	201
LUGALE	1,378	1,661	3,039	679	10	304
OBARO	1,027	1,079	2,106	493	23	92
MAGOMBE EST	2,021	2,513	4,534	1,068	26	174
MAGOMBE WST	1,496	1,872	3,368	824	20	168
EST BUNYALA	4,537	5,227	9,764	2,102	45	217
MUDEMBI	1,619	1,844	3,463	749	12	289
RUAMBWA	1,323	1,568	2,891	638	15	193
BUDALANGI	1,595	1,815	3,410	715	18	189
AMAGORO	26,587	28,924	55,511	9,835	205	271
CEN TESO	10,445	11,229	21,674	3,957	66	328
KOCHOLIA	4,923	5,456	10,379	1,821	41	253
KAMURIAI	5,522	5,773	11,295	2,136	25	452
NORTH TESO	16,142	17,695	33,837	5,878	139	243
KAKAPEL	2,410	2,432	4,842	895	22	220
ABOLOI	3,384	3,659	7,043	1,173	31	227
KOLANYA	2,530	2,803	5,333	868	22	242
ANGURAI	2,605	2,943	5,548	1,007	24	231
MODING	3,376	3,769	7,145	1,306	25	286
CHANGARA	1,837	2,089	3,926	629	15	262

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
SIAYA District	294,313	345,126	639,439	143,369	2,524	253
YALA	57,058	65,830	122,888	27,643	407	302
NORTH GEM	9,980	11,608	21,588	4,946	60	360
NDERE	1,869	2,180	4,049	914	17	238
LUDHA	1,953	2,381	4,334	1,065	12	361
MALANGA	2,394	2,772	5,166	1,129	14	369
GOT REGEA	1,560	1,758	3,318	790	10	332
MALIERA	2,204	2,517	4,721	1,048	7	674
N. W. GEM	5,514	6,433	11,947	2,753	43	278
ASAYI	1,504	1,719	3,223	752	14	230
SIREMBE	1,706	2,068	3,774	897	11	343
MALUNGA W.	1,073	1,231	2,304	524	8	288
MALUNGA E.	1,231	1,415	2,646	580	10	265
WEST GEM	8,751	10,312	19,063	4,376	77	248
ULAMBA	1,421	1,730	3,151	661	9	350
DIENYA	1,913	2,298	4,211	987	21	201
WAGAI	1,576	1,785	3,361	764	15	224
KAUDHA	2,212	2,586	4,798	1,185	21	228
KANYADET	1,629	1,913	3,542	779	11	322
CENTRAL GEM	7,887	9,109	16,996	3,826	55	309
NYAMWARA 1&11	1,336	1,465	2,801	640	7	400
NYANDIWA	1,615	1,857	3,472	755	13	267

SIRIWO	1,455	1,685	3,140	730	8	393
KAGILO	2,222	2,602	4,824	1,061	18	268
GONGO	1,259	1,500	2,759	640	9	307
EAST GEM	16,820	19,233	36,053	7,849	99	364
ANYIKO	1,717	1,972	3,689	793	7	527
SAURI	1,975	2,327	4,302	992	8	838
NYAMNINIA	2,385	2,651	5,036	1,121	10	504
JINA	1,714	1,916	3,630	779	10	363
MARENYO	3,054	3,655	6,709	1,380	14	479
LIHANDA	1,937	2,157	4,094	902	16	256
URANGA	1,644	1,828	3,472	757	17	204
RAMULA	2,394	2,727	5,121	1,125	17	301

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
SOUTH GEM	8,106	9,135	17,241	3,893	73	236
URIRI	836	953	1,789	429	9	199
GOMBE	1,498	1,697	3,195	723	14	228
ONYINYORE	1,240	1,361	2,601	568	11	236
KAMBARE	1,630	1,846	3,476	737	12	290
RERA	1,288	1,395	2,683	617	12	224
NDORI	1,614	1,883	3,497	819	15	233
UGUNJA	30,384	37,193	67,577	15,501	200	338
UHOLO	15,149	18,582	33,731	7,896	106	318
MAGOYA	1,308	1,633	2,941	743	10	294
MADUNGU	2,751	3,324	6,075	1,393	17	357
RAMBULA	1,632	2,073	3,705	858	10	371
ASANGO	1,861	2,233	4,094	976	13	315
TINGARE	2,756	3,448	6,204	1,470	23	270
SIGOMRE	2,616	3,180	5,796	1,304	19	305
UGUNJA	2,225	2,691	4,916	1,152	14	351
S. UGENYA	15,235	18,611	33,846	7,605	94	360
NGUNYA	1,814	2,271	4,085	973	11	371
UHUYI	710	807	1,517	329	3	506
RUWE	856	1,031	1,887	447	5	377
AMBIRA	1,955	2,429	4,384	1,015	10	438
RANG'ALA	2,056	2,529	4,585	1,043	12	382

YIRO	4,388	5,203	9,591	2,041	30	320
UMALA	2,445	3,167	5,612	1,315	16	351
SIMENYA	1,011	1,174	2,185	442	7	312
BORO	71,478	84,193	155,671	37,111	592	263
EAST ALEGO	20,193	23,112	43,305	10,114	104	416
MULAHA	3,480	3,727	7,207	1,712	14	515
KARAPUL	5,048	5,520	10,568	2,557	14	755
ULAFU	1,298	1,552	2,850	651	13	19
UMALA	1,374	1,650	3,024	784	10	302
OLWA	1,357	1,622	2,979	672	6	497
MUR-NGIYA	1,999	2,200	4,199	904	7	600
BAR-AGULU	1,718	2,030	3,748	837	12	312
MASUMBI	2,140	2,675	4,815	1,121	13	370
NYANGOMA	1,779	2,136	3,915	876	15	261

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
WEST ALEGO	12,754	15,763	28,517	7,017	104	274
KODIERE	1,077	1,283	2,360	568	7	337
KAUGAGI UDENDA	1,464	1,820	3,284	782	14	235
KALKADA URADI	1,301	1,568	2,869	699	8	359
GANGU	1,665	1,941	3,606	835	14	258
MAHOLA- ULawe	814	1,050	1,864	463	6	311
KAUGAGI/ HAWINGA	1,177	1,526	2,703	668	13	208
KABURA UHUYI	1,039	1,271	2,310	608	8	289
SIGOMA- URANGA	1,513	1,796	3,309	890	12	276
KOMENYA KOWALA	1,401	1,804	3,205	794	11	291
KOMONYA KALAKA	1,303	1,704	3,007	710	11	273
S. ALEGO	12,760	14,719	27,479	6,402	125	220
BAR OSIMBO	844	1,006	1,850	441	11	168
BAR OLENGO	1,112	1,226	2,338	538	19	123
NYAJUOK	2,025	2,447	4,472	1,077	23	194
MUR-MALANGA	1,344	1,374	2,718	573	23	118
BARDING	1,546	1,866	3,412	646	7	487
NYANDIWA	2,913	3,299	6,212	1,561	17	365

PAP-ORIAN	1,722	2,050	3,772	932	12	314
RANDAGO	1,254	1,451	2,705	634	13	208
N. ALEGO	8,095	9,414	17,509	4,103	55	318
KOMOLO	2,528	2,933	5,461	1,310	17	321
HONO	2,110	2,411	4,521	1,036	13	348
NYAMILA	1,850	2,132	3,982	929	13	306
NYALGUNGA	1,607	1,938	3,545	828	12	295
CEN. ALEGO	12,759	15,043	27,802	6,647	124	224
OBAMBO	1,582	1,825	3,407	859	17	200
KOCHIENG B.	1,025	1,222	2,247	513	8	281
KOCHIENG A.	1,179	1,436	2,615	663	9	291
KOKEYO	2,034	2,380	4,414	1,033	17	260
KAKUMU						
KOMBEWA	1,571	1,852	3,423	793	12	285
KADENGE	1,777	2,010	3,787	965	20	189
OJUANDO B.	1,446	1,754	3,200	728	8	400
OJUANDO A.	2,145	2,564	4,709	1,093	33	143
USONGA	4,917	6,142	11,059	2,828	80	138
NYANDORERA A.	1,780	2,130	3,910	995	10	391
NYANDORERA B.	1,770	2,231	4,001	1,019	36	111
SUMBA	1,367	1,781	3,148	814	34	93

1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
BONDO	46,721	52,440	99,161	20,423	590	168
WEST SAKWA	6,733	7,638	14,371	2,482	107	134
UTONGA	1,688	1,937	3,625	689	37	98
MARANDA	1,558	1,802	3,360	606	31	108
NYAWITA	3,487	3,899	7,386	1,187	39	189
NORTH SAKWA	5,578	6,403	11,981	2,493	53	226
ABOM	1,885	2,208	4,093	838	17	241
AJIGO	2,147	2,503	4,650	988	24	194
BAR-CHANDO	1,546	1,692	3,238	667	12	270
SOUTH SAKWA	10,212	11,825	22,037	4,715	114	193
NYAGUDA	2,631	2,959	5,590	1,204	22	254
BAR-KOWINO	4,457	5,160	9,617	2,068	42	229
E. MIGWENA	1,343	1,616	2,959	549	24	123
GOT ABIERO	1,781	2,090	3,871	89	42	149
CEN SAKWA	8,674	9,748	18,422	3,766	114	162
UYAWI	3,455	3,748	7,203	1,515	39	185
W. MIGWENA	2,260	2,576	4,836	1,040	31	156
NYANGOMA	2,959	3,424	6,383	1,211	44	145
EAST YIMBO	5,506	6,061	11,567	2,489	92	126
NYAMONYE	2,374	2,676	5,050	1,138	41	123
OTHACH	1,898	2,058	3,956	748	31	128
PALA	1,234	1,327	2,561	603	20	128

WEST YIMBO	6,738	7,081	13,819	2,954	43	321
USENGE	4,004	4,316	8,320	1,872	22	378
GOT AGULU	1,597	1,649	3,246	638	14	232
MAGETA ISLAND	1,137	1,116	2,253	444	7	322
CEN YIMBO	3,280	3,684	6,964	1,524	67	104
BAR KANYANGO	453	506	959	182	13	74
GOT RAMOGI	1,374	1,566	2,940	662	30	98
USIGU	1,453	1,612	3,065	680	24	128
RARIEDA	46,824	53,826	100,650	21,188	401	251
EAST ASEMBO	6,708	7,789	14,497	3,170	46	315
OMIA MALO	2,825	3,303	6,128	1,363	19	323
OMIA DIERE	2,100	2,488	4,588	1,014	14	328
OMIA MWALO	1,783	1,998	3,781	793	13	291

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
CEN ASEMBO	7,156	8,601	15,757	3,494	53	297
MEMBA	2,585	3,177	5,762	1,307	20	288
N. RAMBA	2,743	3,216	5,959	1,302	20	298
SOUTH RAMBA	1,828	2,208	4,036	885	13	310
WEST ASEMBO	8,712	10,277	18,989	3,867	80	237
MAHAYA	2,441	2,954	5,395	1,176	26	208
NYAGOKO	2,714	3,277	5,991	1,224	25	240
SIGER	3,557	4,046	7,603	1,467	29	262
EAST UYOMA	13,067	14,327	27,394	5,831	112	245
KATWENGA	3,114	3,344	6,458	1,284	35	185
LIETA	2,278	2,636	4,914	939	22	223
RAGENG'NI	2,624	2,854	5,478	1,194	19	288
NAYA	2,761	2,935	5,696	1,404	16	356
NDIGWA	2,290	2,558	4,848	1,010	20	242
CEN UYOMA	4,935	5,609	10,544	2,184	45	234
KOBONG	1,641	1,836	3,477	756	13	267
RACHAR	1,170	1,269	2,439	434	13	188
MASALA	2,124	2,504	4,628	994	19	244
WEST UYOMA	6,246	7,223	13,469	2,642	65	207
KAGWA	2,062	2,545	4,607	877	14	329
KOKWIRI	2,166	2,453	4,619	894	19	243
NYABERA	2,018	2,225	4,243	871	32	133

UKWALA	41,848	51,644	93,492	21,503	334	280
E. UGENYA	17,158	20,760	37,918	8,718	153	248
MURUMBA	1,583	1,921	3,504	843	15	234
JERA	2,083	2,394	4,477	966	14	320
KATHIENO A.	2,043	2,512	4,555	1,080	15	304
KATHIENO B.	1,776	2,157	3,933	928	20	197
YAMSENDA	1,337	1,588	2,925	683	9	325
ANYIKO	2,501	3,133	5,634	1,322	31	182
LIGALA	3,337	4,085	7,422	1,681	25	297
RAMUNDE	2,498	2,970	5,468	1,215	24	228
UKWALA	8,569	10,910	19,479	4,599	52	375
SIMUR	2,826	3,658	6,484	1,563	18	360
YENGA	2,271	2,923	5,194	1,224	15	346
SIRANGA	1,416	1,883	3,299	767	7	471
DOHO	2,056	2,446	4,502	1,045	12	375

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1989 KENYA POPULATION CENSUS

Table 1. Population by Sex, Number of Households, Area and Population Densities for all Administrative Areas

AREA	MALE	FEMALE	TOTAL	HHs	SK.m	Den
N. UGENYA	7,408	8,892	16,300	3,749	51	320
UYUNDO	1,368	1,562	2,930	670	12	244
SEGA	2,339	2,756	5,095	1,169	15	340
NYALENYA	1,357	1,672	3,029	708	9	337
KAGONYA	2,344	2,902	5,246	1,202	15	350
W. UGENYA	8,713	11,082	19,795	4,437	78	254
MASAT	2,413	3,150	5,563	1,266	23	242
KARADOLO	2,852	3,602	6,454	1,461	29	223
SIFUYO	1,098	1,393	2,491	597	8	311
NDENGA	2,350	2,937	5,287	1,113	18	294

Appendix 8: Assignments and Case Studies

ASSIGNMENT 1

1. KARI Kakamega held a SWOT in July 1998. Five Task forces were selected at the end of the training to work on important aspects of managing the center. These reports were supposed to be ready for review by the consultants before the design of the next training-OD/Costing Training.

The reports were not all ready on day one of training.

One week before the onset of the OD/Costing Training, other assignments were made by the consultants to massage data needed for refining both the OD/Costing Training and subsequently Strategic Planning. It is estimated that only 10% of the materials are available on day one of OD/Costing Training.

What management lessons can you draw out of these facts?

ASSIGNMENT 2

2. Which are the key commodities necessary for assuring (a) food self-sufficiency and (b) food surplus at the household level in the center mandate area? Answer in terms of specific populations and agro-ecological zone categories.

- a. How do you weight (in percentage terms) the relative importance of each commodity identified as relevant for the mandate area?
- b. Which are the key resources for assuring fulfillment of its mandate? How do you weight Kari Kakamega resource allocation across the commodities identified to assure that it addresses issues of population and agro-ecological regions.

CASE STUDY 1

Cassius Nyongeza obtained his PhD in a top American University specialising in, as he called it, 'plantology'. He was one of the youngest qualifiers of his year. On returning to his native country sitting astride the equator, he was made head of a government agricultural research institute with a mandate to develop agribusiness. That was twelve years ago.

The Walala Hoi Agricultural Research Institute, fondly referred to as WH, has a whole range of plant and soil specialists trained in different universities both locally and abroad. Cassius believed that the reason for the creation of WH was to be at the cutting edge of plant science. Armed with an arrogance born of his achievement in academia, he set to work for WH with a vigour and dedication that astounded his superiors in the Ministry. Cassius believed that if he is not the one who did it, it was not well done. He believed, rightly or wrongly, but sincerely, that if you are the one who knows how to do it, you do it your self. In spite of his high self-esteem, he believed in an 'open door policy' where anyone who wanted to see him was free to do so.

He reorganised the WH departmentalised structure, flattening it and declared himself 'directly accessible to all' and accordingly hired a young secretary giving her the title of 'Access Facilitator'. She was instructed to let anyone in, strictly on a 'first-come first-served basis' and while one was in, he would hear anyone out. His indecision on issues brought to him were disguised in niceties always ending with 'Tomorrow will be a better day'. Cassius worked for long hours and never stopped to look back because, as he put it, 'there is no future in the past'.

'We will go where science leads us, pioneers cannot predetermine their path'. He begun to lead WH into new adventures. One such was breeding a cow that would need to calve only once to be in milk for life, another one was wheat, maize and millet that would grow wild and produce their respective flours instead of grains. He boasted that this would be his country's quantum leap. Allocation of manpower to these research projects was by show of hands saying that this was the democratic way.

Today, his country which started with a lot of promise as a young democracy, has fallen foul with donor countries who are now pulling out. The research projects have not borne any results. The farmers who used to attend meetings organised by their institute, WH, no longer do so, dismissing it with, *wasomi hawa*. While all this has been going on, a number of things have been happening to farming and WH:

- ♦ Strange strains of rust have almost wiped out grain harvests,
- ♦ Half the WH land has been allocated to the poor of the area, and a quarter by the big fish.
- ♦ Disappointed, the best scientists have been leaving WH.

Required

Your group has been hired jointly by a prospective donor and the government to help them identify why WH has failed. Discuss.

CASE STUDY 2

Walala Hoi is a regional institute, commonly known as WH. For over thirty years now, donors have been making significant inputs into this research station. At the political level, things have not been going too well and the donors have become restless and are pulling out. Unable to fund research, the Government has issued a directive to all research institutes to start commercialising their activities including research.

Mr. Carter Mtafiti, MSc. at 21, son of a highland farmer and a graduate of a local university has recently been appointed Institute Director after the failure of Cassius Nyongesa, his predecessor. A man of indefatigable curiosity and already successful in three different careers in public service, wildlife and a stint in the NGO world by the age of forty five. He is excited by ideas. The highly learned and experienced staff of WH are restless about this appointment.

For one month after his appointment, Mr. Mtafiti travelled to all high potential agricultural areas and the drier areas of the Wh mandate areas. He found that most commercial farmers were employing local people, whom they would train to do the day to day running of their farms. He also found that some of them were bringing consultants from abroad to train the people on the job in addition to visiting their farms two to three times a year to deal with any emerging issues. He talked to two passion fruit farmers, five floriculturalists, three farmers cropping millet and sorghum, 15 farmers growing cassava and sweet potatoes, three farmers rearing dairy animals and one farmer with a champion fighting bull in an area some 5,000 sq. kms. He also visited a new international airport that had recently been built near the area where he learnt that the airport was attracting a lot of interest from international cargo carriers. The peasant farmers had formed co-operatives to which they would contribute money for hiring skills to advise them about their farming methods. He further discovered that these groups were not hiring researchers from government institutions because they 'do not want lectures on things we already know but on practical issues that address our specific needs. We have seen them come to learn from us. What is the use'. No extension personnel had visited any of the farmers for a long time.

One farmer was buying horticultural produce from his neighbours, combining it with his farm produce and selling to the local, national and international markets.

Disappointed that he could have accepted the post of heading an irrelevant edifice, Mtafiti's mind set to work. He was gratified to note that there was a niche the institute could address. "We are about improving farming systems not research"! hit him squarely. He was bothered by the fact that donors had withdrawn their support for research. The reason they gave for their withdrawal bothered him even more. 'Our funds are limited and there are more interesting frontiers. The farmers we set out to help are no better off than when we started. We are looking for practical results. We have wasted too much on reinventing the wheel and our insistence that research address clear farmer-driven issues has been politicised'.

On arrival at WH, Msafiri's first action was to cancel all running and imminent leaves and recall all researchers to the Institute. He declared that a retreat was in progress, and after outlining his ideas based on his field trip visit, created working groups to address issues to revive WH.

Required: Your group is one such.

Case Study 3

Apart from research, Carter Mtafiti, head of Walala Hoi Research Institute, has invested in what he is calling 'fourth stream activities'. These are projects for generating extra cash in addition to funded research, seed production and consulting. One of the project is not doing well and it has to be replaced. Three projects A, B and C have been proposed. The projects are expected to each require Shs 200,000.00; have an estimated life of 5, 4, and 3 years respectively; and have no salvage value. The institute's required rate of return is 12%. The expected cash flows are as follows:

	A	B	C
Year	Shs	Shs	Shs
1	50,000	80,000	100,000
2	50,000	80,000	100,000
3	50,000	80,000	10,000
4	50,000	30,000	-
5	190,000	-	-

Required:

Your group has been asked to advise Mr Mtafiti on which project he should adopt.

1. Rank each project using Pay-back, Net Present value and Profitability Index
2. Explain conflicts in ranking if any
3. Recommend the project to be adopted and give reasons

CAPITAL BUDGETING

1. Pay-back Period

		Machine T	Machine S
Cost		20,000	20,000
Profit Before Depreciation	Year		
	1	3,000	15,000
	2	6,000	8,000
	3	8,000	2,000
	4	8,000	1,000
	5	15,000	1,000

Merits of pay-back method

1. Simple to calculate and understand
2. Recognises the timing of cash flow
3. Valuable in high risk situations

Demerits of pay-back method

1. Does not take into account cash flow after pay-back period
2. Does not consider entire cash flow stream
3. Ignores profitability of the project
4. Does not take into account time value of money

2. Net Present Value Method (NPV)

Merits of NPV

1. Recognises time value of money
2. Considers all cash flows over entire project life

Demerits of NPV

1. Difficult to use
2. Presupposes the discount rate
3. May not give satisfactory results in comparing projects of different investment amounts

$$\text{3. Profitability Index:} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of Cash Outflows}}$$

CASE STUDY 4

It is now two years since Carter Mtafiti took the helm as Walala Hoi Agricultural Institute. Mr. Mtafiti has been studying the way WH has been formulating their proposals and it has come to light that WH does not include overheads and administrative costs when costing their proposals. Accordingly he has directed that all proposals must include all possible overheads.

He has picked one concluded research proposal done over the last two years. This research resulted into a new crop. It is yet to be patented. He intends to apply for a patent and to sell it to three prospective buyers from South Africa, Brazil and United States who have made offers of Ksh. 25 million. He knows he can bargain the price up to Ks. 30 million payable over a five-year period in installments. On patenting, the buyer will pay Ksh.9 million and then 5 million per year for the next two years and 6 million at the end of the fifth year.

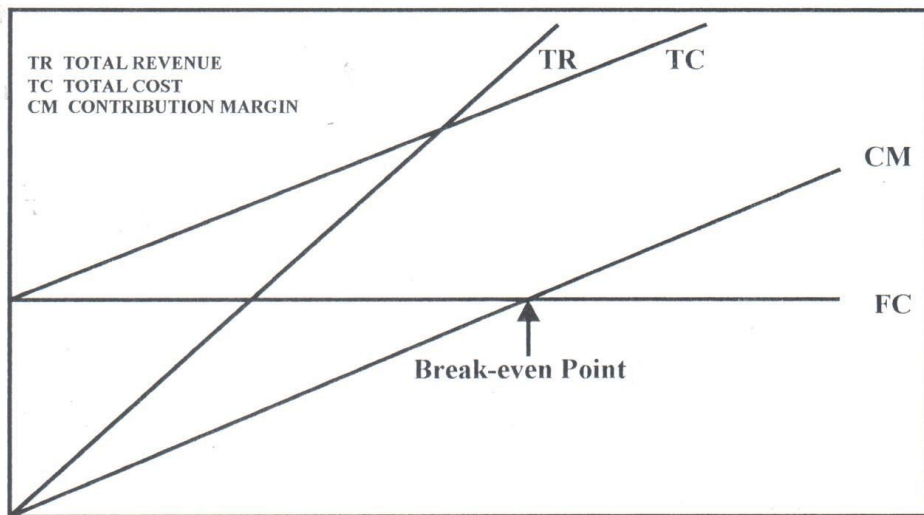
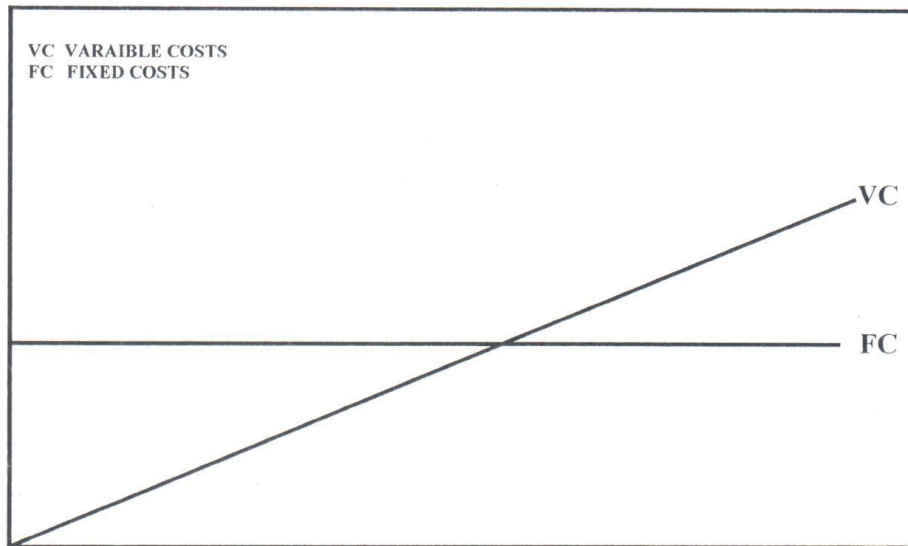
Three senior researchers and six hired technical officers produced Karachi 2, a miracle maize for UM2. It was administered within the normal KARIKA KAMEGA SYSTEM. When Mtafiti joined, there was no systematic management data; it has now been put in place in a fashion. In the same period, five other projects were carried out with similar in house staffing and organizational costs without tangible outputs.

By the time the project was completed it had acquired direct costs to the tune of Ksh. 3 million. The patent sale does not restrict WH from growing seed maize for sale in the country. WH estimates they will be able to make sales of Ksh. 2 million per year over the next five years. WH has an average cost of capital of 15%.

Required:

1. Your group is to work out a reasoned system of allocating overhead costs as given in the appendix and use its experience in research to arrive at the cost of growing the seed maize.
2. Using the information the group generates work out the NPV of this transaction and its Profitability Index.
3. Using the Payback period, when will the institute recover its costs?

COST RELATIONSHIPS



INTRODUCTION TO COST ACCOUNTING

- ◆ A formal system of accounting for costs by means of which a product or service costs are ascertained.
- ◆ Part of 'Management Accountancy' used to help managers in reaching rational decisions and controlling business operations.
- ◆ Cost may be defined as resources foregone or sacrificed so as to achieve a defined objective.

Function of cost accountant

- ◆ Interested in providing answers to following questions
 1. What has been the cost of goods produced, services provided by a certain department?
 2. What are the revenues?
 3. What are the future costs of goods and services likely to be?
 4. How do actual costs compare with budgeted costs?
 5. What information does the management need in order to make reasonable decisions about profits and costs?

Decision Making Process

1. Recognize why a decision is necessary (problem definition stage)
2. Determine the alternative courses of action available
3. Evaluate the alternatives
4. Select best alternative
5. Make/Implement the decision
6. evaluate the decision

Costing Systems

A proper cost system should provide adequate information on:

1. Profitability of individual product, service or job
2. Profitability of different departments or operations
3. Cost behavior of various items of expenditure in the organization
4. Difference between actual and expected results
5. Information on how to set prices to cover cost and generate an acceptable profit level
6. The effect on profit of increase or decrease in output

The following conditions must be met for a cost system to be efficient:

1. There must be a proper system of stores and stock control
2. Cooperation and coordination among members of the organization
3. Proper wages procedures for charging respective jobs correctly
4. Standardized printed forms for recording receipt and issue of materials, hours worked, wages, etc.
5. Overheads must be charged to respective production departments and absorbed to units produced
6. Established costing function with defined duties

Classification of Costs

◆ Direct Costs

These are costs that can be directly traced to a product or service
They are also referred to as Prime Costs

◆ Indirect costs

These are costs incurred in the course of making a product but which cannot be traced directly to a product or service

1. Indirect material costs - IM
2. Indirect labor - IL
3. Indirect expenses - IE

$IM + IL + IE = \text{Factory overheads}$

$\text{Prime Costs} + \text{Factory overheads} = \text{Total Costs}$

$\text{Total Costs} - \text{Material Costs} = \text{Conversion Costs}$

Materials Control and Pricing

Materials form a major part of the prime costs, especially in a manufacturing concern.

Classification of stocks:

1. Raw materials
 2. Work in progress
 3. Consumables and spares
 4. Finished goods
 5. Returnable containers
- ♦ Stocks cost money both to buy and to store. Why hold stocks
 - ♦ The stocks problem is to find that ideal balance between the costs and the benefits

Why stocks management matters

- ♦ In most cases they form the single largest item in the balance sheet
- ♦ They can be easily turned into cash hence prone to pilferage
- ♦ Poor management could lead to stock-outs and loss of business
- ♦ Form a major investment 30 - 60%
- ♦ Various costs relating to stocks are controllable by management

THE BREAK-EVEN POINT

Break-even point is that point of activity where total revenues and total costs are equal.

Mr Ponda Mali is the head of the cartographic unit of Debways Soil Survey Inc. He plans to sell some of his maps at an agricultural show planned in his town. It cost him \$ 50 to produce each map. He plans to sell each map at \$ 90. He has to rent a booth at the show for \$ 2,000, payable in advance.

How many maps must he sell to break even?

Equation Technique

Sales = Variable Expenses + Fixed Expenses + Net Income

Let X = Number of units to be sold to break even

$$\$ 90X = \$ 50X + \$ 2,000 + 0$$

$$\$ 40X = \$ 2,000 + 0$$

$$X = \frac{\$ 2,000 + 0}{\$ 40}$$

$$X = 50 \text{ units}$$

Contribution Margin Technique

Contribution margin is the excess of sale over *variable* expenses

$$\begin{aligned} \text{Unit contribution margin} &= \text{unit sales price} - \text{unit variable expenses} \\ &= \$ 90 - \$ 50 = \$ 40 \end{aligned}$$

CAPITAL BUDGETING

1. Pay-back Period

	Machine T	Machine S
Cost	20,000	20,000
Profit Before Depreciation	Year	
	1	3,000
	2	6,000
	3	8,000
	4	8,000
	5	15,000

Merits of pay-back method

1. Simple to calculate and understand
2. Recognises the timing of cash flow
3. Valuable in high risk situations

Demerits of pay-back method

1. Does not take into account cash flow after pay-back period
2. Does not consider entire cash flow stream
3. Ignores profitability of the project
4. Does not take into account time value of money

2. Net Present Value Method (NPV)

Merits of NPV

1. Recognises time value of money
2. Considers all cash flows over entire project life

Demerits of NPV

1. Difficult to use
2. Presupposes the discount rate
3. May not give satisfactory results in comparing projects of different investment amounts

$$\text{3. Profitability Index:} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of Cash Outflows}}$$