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STRATEGIC ISSUES IN PLANNING KITUI DEVELOPMENT

A SEMINAR REPORT

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PART ONE: INSTITUTIONAL ISSUES

INSTITUTIONAL CONSTRAINTS TO DEVELOPMENT

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1. INTRODUCTION

The major objective of this paper is to highlight some of the critical constraints to Kitui District's Development with a view to stimulating discussions on ways and means of promoting rapid socio-economic development.

Kitui District has an area of 31099 sq. kms. of land which includes 6, 309 sq. kms. occupied by Tsavo East National Park. The district is a semi-arid region whose basic resources, land water, and forests, are either being depleted or are deteriorating in quality to the extent that they may be unable to adequately support a growing population.

The rain falls in two main seasons per year, but it is normally unreliable and inadequate. The unreliable and unpredictable rainfall often leads to shortage of water, pasture, poor harvests and inevitable food shortages and famine in extreme cases. The rivers are semi-permanent or seasonal in nature and very often they get flooded during the rainy season. The only permanent rivers, the Athi and Tana rivers, form a common boundary between Kitui and the neighbouring Districts of Machakos and Meru and Embu respectively.

In spite of the semi-arid conditions of the District, about 37% of the Kitui land is of medium agricultural potential receiving between 500 - 600mm per annum. This amount of rainfall is sufficient to support rainfed agriculture provided the right type of seed and appropriate modern agricultural practises are acquired and adopted by the farmers. If the rainfall is evenly distributed Katumani maize and beans only require between 400 - 600 mm of rainfall per season while millet, sorghum and cow peas need between 175 - 380 mm per season.

Most of the land receiving less than 500mm of rainfall is suitable for livestock rearing, particularly ranching. Livestock farming in Kitui however, requires new management techniques that are not unduly harmful to the environment.

2. POPULATION

The estimated population of Kitui District is about 700, 00 persons. This population is growing at the rate of 3.4% per annum. There is a higher concentration of population in the areas of high

settlement and cultivation in the more marginal lands of the District. The settlement of marginal lands without adequate conservation measure has resulted in falling average incomes, lower productivity and degradation of the environment. Nevertheless, people are a vital resource in development.

The large human resource in Kitui however, has not realised its full potential for socio-economic development. The major handicap to the full utilization of the human resource is the high degree of illiteracy, traditional values, attitudes and practises that may be inconsistent with modern values and practises particularly with regard to changes necessary for modern development.

3. ADMINISTRATION

Kitui is divided into six administrative divisions, each administered by a District Officer. The six divisions are further sub-divided into 37 locations and 160 sub-locations. These administrative units are also the basic units for rural development planning and implementation.

The following table is a summary of the administrative units.

Name of Division	No. of Locations	No. of Sub-Loc.
1. Central	5	33
2. Kyuso	8	24
3. Kwa-Vonza	5	20
4. Mutito	5	28
5. Mutomo	8	31
6. Mwingi	<u>7</u>	<u>24</u>
Total	37	160

The smallest unit of planning in the District is the sub-location. However, District planning is weakest at the sub-location and locational levels where project identification is carried out. The needs and aspirations of the people can be best articulated at the sub-locational and locational levels through strengthening of the local level development committees through relevant training and appropriate staff deployment.

The planning secretariat should establish suitable criteria for project appraisal and prioritization in order to make planning more objective. The economic inter-dependence of areas/regions at the local level should override parochial interests as criteria for project prioritization. Even for purely social projects there are more objective criteria.

4. AGRICULTURE

Kenya is an agricultural country with over 80% of its people living

agricultural related industries and distributive trades. The percentage of people earning their income from agriculture in Kitui District could be higher than the national figure. Agriculture is the main source of employment and income in Kitui District and it is responsible for the growth of other distributive trades that form the backbone of commercial activities within the district. This leading role of the agricultural sector in the socio-economic transformation of the district is likely to continue in the foreseeable future.

In view of the importance of agriculture in the economic life of Kitui District, all future efforts for economic growth and development should continue to focus on agriculture for purposes of attaining food self-sufficiency and as a sources of employment and income.

A sustainable agricultural programme in this semi-arid region will depend on proper soil and water conservation techniques, that will conserve and enhance the environment. Needless to say, soil and water conservation measures are expensive activities, which should be undertaken on a scale and manner that is both manageable and sustainable. The catchment approach to conservation of resources being promoted by both the Ministry of Agriculture and KIDP is a feasible and realistic strategy to the promotion of conservation of resources. The measures recommended should be affordable and sustainable both at the farm level and within the entire catchment.

The following recommendations could form policy measures which, if implemented with a variety of incentives, could lead to increased agricultural productivity, higher incomes and employment given the importance of agriculture to the economic life of Kitui:

- a. The MOA should prepare realistic production targets for both food and cash crops. The efforts of the extension personnel should aim at realising the set targets. These targets should be subject to evaluation and review and any identifiable bottlenecks removed.

- b. There should be a deliberate effort to improve and modernise the existing agricultural methods and practices. Many of the farmers are still practising subsistence farming, which is outmoded.

- c. Cash crop farming should be given priority. It should however, be in line with national policies on cash crop farming and marketing. Currently most farmers rely on selling the little food crops they harvest leading to food shortage in times of poor or average harvest.

- d. There is need to identify and promote basic agro-processing enterprises which will add value to local production.

e. The MOA should increase the number of its demonstration farms to serve as seed bulking sites. These farms should embark of serious production to convince farmers of the real potential of their land by increasing output per unit of land.

f. The full potential of irrigable land should be utilized through the promotion of small scale irrigation projects.

g. The production and marketing of agricultural produce should be linked very closely. The cooperative movement in the District should be revitalized and expanded to cater for the needs of the agricultural producer eg. provision of credit facilities, acquisition of inputs, and marketing of produce.

h. Deployment and supervision of extension personnel should be effected. The extension personnel should be provided with adequate and relevant modes of transport eg. bicycles and motorcycles.

i. Localised research should be conducted within the District to supplement national efforts. This will also enable the compilation of data and information on local agricultural potential.

j. The MOA officers should be innovative and committed. They should however, be motivated by a package of suitable and attractive incentives. This is true of many public servants.

For the above measures to achieve the anticipated results, farmers must be ready and willing to change their attitudes by adopting new ways and techniques that are compatible with modern agricultural management and practises. Appropriate public education should be mounted in order to promote change and awareness. The envisaged campaigns should be innovative and responsive to changing circumstances.

5. LIVESTOCK

The livestock sector in Kitui has remained largely traditional in nature. In spite of its traditional nature, livestock is a major income earner in the District and a traditional source of wealth. The main bottleneck to the development of this sector is lack of adequate water supplies particularly in the Eastern statelands and the lowlands that are ideal for large scale cattle ranching.

There is an urgent need to modernize this sector in order to enable it to play its proper role in the development of the District. However, like agriculture, livestock is responsible for rapid depletion of vegetation cover which often leads to soil erosion. The development of this sector should incorporate measures that enhance the environment for sustained livestock farming.

It is worth noting that the location of Kitui is ideal in relation to the Kenyan and international markets for meat and animal products. Animal products could easily be processed in Kitui with finished or partly finished products being transported to Nairobi and other markets for either consumption or further processing.

In order to improve the marketing of livestock and livestock products, there is need for a comprehensive programme of disease control. Disease control in Kitui, however, cannot be done in isolation but has to be linked to the regional and national disease control programme. The disease control programme will of necessity include the rehabilitation of all existing stock routes and holding grounds. In improving the quality of livestock, the yields in milk, meat and eggs is expected to rise, leading to increased earnings per unit of stock.

6. INFRASTRUCTURE

It is generally accepted that good infrastructure will make rural areas more attractive to live and invest in. However, infrastructure is a supplementary activity that supports, enhances and attracts economic activities. The mere provision of infrastructure and other social amenities is not enough incentive. It must be accompanied by economic enterprises that will generate employment and incomes for the rural people. This calls upon the rural community to be more enterprising and to spend less time and money on social activities. This change of attitude could be achieved through public education campaigns with specific objectives.

The improvement of rural infrastructure however, will help stimulate agricultural and non-agricultural activities in rural Kitui. Poor infrastructure, particularly roads, can be a major constraint to the development of commercial and agricultural activities. The District communication network, is still poor.

There is need to promote relevant infrastructure, e.g. telephone, electricity, good roads and markets, to facilitate exchange of goods and services.

7. LAND TENURE SYSTEM

Land Adjudication in Kitui District was started in 1971. So far only 15% of the total area has been adjudicated. The rest of the land is still under communal ownership. At the present rate of adjudication most land in Kitui will still be communally owned by the year 2000.

Experience has shown that generally land is better managed where it is privately owned while communally owned lands have been badly used, neglected and often left to deteriorate. We should however, not neglect the role of the community in land management.

There is an urgent need to speed up land adjudication in the district so that the farmers can have land certificates which they can use as collateral security for financial loans to improve agriculture and non-agricultural economic enterprises. At the moment only a limited number of farmers can have access to loans through use of land title deeds. However, since land is an inelastic resource there is need therefore to continue promoting public education campaigns on the advantages and benefits of proper management of land resources for sustainable growth and development.

8. PERSONNEL

The success of any development programmes in any district will depend on the quality and ability of the personnel responsible for implementing various activities and programmes. The personnel should be able to translate plans with the aim of achieving intended results.

One of the major constraints among some cadres of District personnel is the apparent lack of basic knowledge and skills, and low levels of commitment in the discharge of their functions. In the circumstances, even the best of policies and programmes cannot be effectively implemented to realise the intended policy or programme objectives.

Acquisition of relevant skills will be a function of relevant training. Training could be aimed at imparting new knowledge and skills and a change in attitudes in the cadres involved. A systematic induction in the District priorities based on plan objectives and priorities might be essential to avoid too much experimentation.

There is an urgent need to change public officers attitudes' towards work generally and towards public facilities and equipment. The standards of efficiency and commitment in public projects and programmes need not necessarily differ from those displayed in private and personal projects. Adoption of new attitudes could be achieved through a new set of incentives for all cadres of personnel and a commitment and willingness to adopt new attitudes. The present level of performance, care and handling of public tasks and public resources is not a manifestation of full utilization of the existing potential.

Similarly, the public will need education through more effective methods in preparation for the tasks of managing change and development. The Adult literacy campaign could be made more functional in order to meet the needs and aspirations of rural communities. The classes offered should be made more interesting and stimulating to adults. Adults would normally require literacy skills as a means to other higher objectives.

The basic skills on resource conservation and the rationale for environmental conservation should be incorporated in public awareness lessons and campaigns, particularly the adult literacy classes.

An enterprising spirit should be encouraged in all spheres of both public and private life. Public officers should be encouraged to use their initiative and to apply new and modern ideas in decision making and in management of resources in general. Routine answers and behaviour will only serve to maintain the status quo but may not lead to new ideas and new ways of doing the same things.

9. THE DISTRICT DEVELOPMENT COMMITTEE

One major objective of the District Focus for Rural Development Strategy is to promote rapid socio-economic development in rural areas through policies and programmes that will promote higher standards of living. The development of rural areas should gradually lead to a reduction in the imbalance between rural and urban areas.

Most of the country's urban population is rising very rapidly partly as a result of rural-urban migrations. The living conditions in the rural areas, including opportunities for securing employment, could be made sufficiently attractive so that there is less urge to migrate to urban areas in search of brighter opportunities. At the moment urban areas continue to attract an influx of rural unemployed youths particularly school leavers. It should be the responsibility of the D.D.C to redress this imbalance.

The District Development Committee should recognise the complementarity of various sectoral plans and programmes. This calls for the cooperation of all sectors, departments and agencies that operate in the District. All available scarce resources should be effectively utilised for the welfare of the residents of the District. The DDC should coordinate all the activities, projects and programmes of all development agencies to avoid duplication of effort and resources. The aim of rural development should be to improve standard of welfare by increasing productivity, employment and incomes within the rural sector.

The awareness campaigns, on the important role good environmental conservation and management play, in our present and future survival, have already started to bear fruit in the rural areas. It is extremely useful for all planners and implementors of projects to incorporate elements of sound environmental conservation in all development activities. The incorporation of the necessary conservation measures is even more crucial in a semi-arid environment which is more fragile and sensitive to changes in land use and management. Those who live in arid and semi-arid lands know

on how to properly manage and sustain the practises which will promote a healthy environment.

The District Development Office

The office of the DDO is central to the success of the District Development Programme. The activities that have been brought under the direct supervision of the District Development Office, since the launching of the District Focus for Rural Development Strategy, require the establishment of a planning secretariat. The task of planning should be handled professionally by a team of competent and qualified officers, deployed at the secretariat. These professionals should, with the support of the sub-committees of the DDC and the sub-DDC's, draw a comprehensive master plan for the District. The master plan will outline the District's development course.

In the past, the sub-committees of the DDC, have relied on poor data and information for planning purposes. They also lack the necessary skills to identify and appraise projects at lower levels. The strengthening of the lower level sub-committees of the DDC will give Kitui's planning process a strong base which will also enhance monitoring and evaluation of projects. All the different groups/agents in the development processes should be accountable to the public for all their actions and there should be severe disciplinary and/or legal action for those whose actions amount to misuse or misapplication of resources.

District Information and Documentation Centre

The present District Information and Documentation Centre is in dire need of restructuring. This section should be headed by a senior and competent person who has the necessary skills and knowledge to identify, collect and document data and information necessary for decision making processes.

The unit should have sufficient resources to disseminate the information/data to the user departments and agencies. The information or data held should be up to date at all times. At the moment, most of the District planning is based on data that may not be quite accurate. And very often a lot of time is lost retrieving data/information that should otherwise be readily available.

The District Treasury

With the launching of the District Focus Strategy, the District Treasury has expanded its responsibilities and it now services all Government Departments in all financial matters.

One major weakness still experienced at the District Treasury is the slow pace of processing payments which often leads to delays in

prompt payment to merchants and suppliers of goods will definitely improve the speed with which projects are implemented.

In a competitive environment any delays at any stage of a transaction particularly of a commercial nature results in less earnings, profits or opportunity. The accounting procedures could be made less cumbersome without compromising accountability. For a start, improving on the speed of the operations will make a very big change.

District Tender Board.

The tendering procedures are intended to ensure that the Government does not lose money through privately arranged transactions. However, over the years tenderers have learnt to exploit the tender system to the extent that prices are often high and exaggerated. It will not serve the wider public interest, of maximizing the use of the meagre Government finances, if officers were to have an open hand in purchasing goods and services at the cheapest source through private treaty. It suffices to say that tender procedures and regulations should be reviewed from time to time to make them simple but with sufficient accountability measures.

Improved market research, however, would provide the Tender Board with sufficient information on which to base its decision.

10. CONCLUSION

This paper attempted to give a critical analysis of matters that are crucial to the rapid socio-economic development of the District.

Some of the recommendations and suggestions in this paper require changes that may be beyond the ability of the District Development Committee but much will depend on the willingness and commitment of the officers and others to promote planned change. The life of KIDP as a District development programme is an excellent opportunity to lay a firm foundation for future District Planning and development.

ELEMENTS OF A DEVELOPMENT STRATEGY FOR KITUI DISTRICT

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INTRODUCTION

Africa has the largest expanse of drylands in the world. They form some 18 million km². Extended drought, during the past 10 years, has brought some 218 million people to the verge of calamity. Development in these drylands has to deal with the phenomenon of land degradation, whereby the biological and natural resources potential of the continent and its ability to support populations has severely diminished. The resultant desertification created, and will continue to create, environmental refugees. They, in turn, cause socio-political upheaval.

Some 85% of the land area of Kitui District forms part of these arid and semi-arid lands (ASAL). The drylands of Tsavo East National Park, covering approximately 6300 km² are not included in this total. The District is characterised by recurrent drought; defined as less than 80% of average rainfall. In this century alone, droughts were recorded in 1898 - 1904; 1908 - 1911, 1916 - 1921; 1924 - 1929; 1934 - 1935; 1938 - 1939; 1945 - 1947; 1958 - 1960; 1970 - 1971; 1975 - 1976; 1983 - 1984; and 1991. Devastating droughts during the previous century were those of 1832 and 1850.

Kitui has a record of food shortages. Between 1900 and 1930 food relief was required over a total of 30 years. Kitui is essentially a livestock district, as present suitability for sustainable agriculture is low. Some 67,000 ha. are excellently suited for agriculture, and 114,000 ha. are moderately suited. Most of this land is situated in the so-called rainbelt (Figure 1). With the exception of 35,000 ha. of vertisols, the remaining soils are infertile, susceptible to compaction and capping, and furthermore highly erodible. Estimated soil loss for unprotected land is 35 tonnes per ha. annually. The district is further chronically short of water for human and livestock consumption. In Kyuso Division, only 27% of water needs are met. Mutomo division has the highest met demand, 70%, although the latter figure is distorted since 64% of waterpoints are concentrated in two of the division's eight locations.

Kitui District at this moment counts approximately 710,000 inhabitants of which 53% are children under the age of 15. Net population growth between 1969 and 1979 was 3.54%. It is estimated that the current growth rate is 3.46%. Mortality currently stands at 124.8, a significant drop from 130.6 in 1986. Chronic malnutrition of children under the age of 5 is 18.7%. The decade 1970-1980 saw a 30% increase in the number of children between 12 and 23.

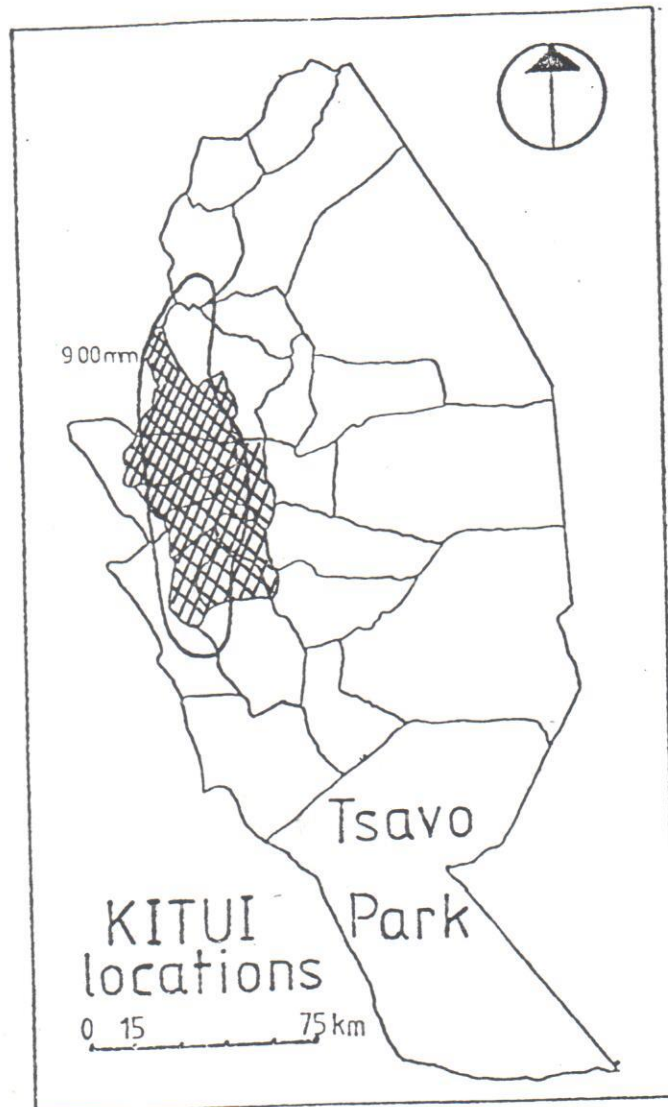


Figure 1: Climatologically most suitable locations.

Source: Thom (1980), Wisner (1978),
District Development Plan 1980

Text Figure 1

PHASE	NATURAL RESOURCES BASE	+	COMMUNITY BASE	=	ECONOMIC BASE
1. <u>BALANCE</u>	<p>Infertile, erodible soils Low, unreliable rainfall High evapotranspiration Periodic drought Prolonged riverine flooding Tana River Isc Isc Barrier Wildlife Mineral deposits Fragile ecology, low potential</p>		<p>Traditional landrights Mixed farming systems Subsistence farming Periodic famine Pastoralism, hunting Periodic epidemics Low population numbers Traditional skills</p>		<p>Subsistence Trading (Mombasa)</p>
2. <u>INBALANCE</u>	<p>Indiscriminate deforestation Flash flooding Reduced grazing land Introduction new cattle breeds Eradication Isc Isc fly Disease barrier artificial Livestock diseases endemic Accelerated soil erosion Reduction water supply Eradication wildlife Introduction new crops</p>		<p>Population growth Conservation of traditions Sedentary agriculture</p>		<p>Subsistence (agriculture) Changes to cash economy Trading (livestock) Remittance (e.g. Army)</p>
3. <u>DEGRADATION</u>	<p>Massive land degradation Soil loss 32t/ha/year Overgrazing, bush encroachment Livestock decreasing Land shortage Agricultural production static Less water availability</p>		<p>Population growth 4%/year Infant mortality 120/1000 Literacy 50% Socio-economic differentiation Slow social change Export new skills (migration)</p>		<p>Income US \$20 head cash Farm income 561 Ksh. month (1/3 = subs.; 2/3 = cash) Declining economic base Rising poverty Chronic lack of infrastructure Middlemen marketing Lack of services</p>
4. <u>BREAKDOWN</u>	<p>(Somalia, Ethiopia, Sudan scenarios)</p> <ol style="list-style-type: none"> 1. Breakdown of natural resources base. 2. No new, alternative skills acquired, no new traditions established. 3. Sale of livestock and capital goods in periods of drought (1974). 4. Massive dependence on food and medicine; displacement of populations. 5. Agricultural inputs replaced with donor aid. 6. Dependence almost exclusively on crops; new economic base too small. 7. Droughts 1984 and 1991 consolidate the destruction of society. 8. Mass starvation (18 million) - Donor fatigue. 				

Note: The Kitui droughts of 1974 and 1984 are forerunners of Phase 4. After each drought, recovery becomes more difficult. Even as future droughts may be less severe, their socio-economic impact will be progressively longer, particularly if the intervals between droughts are relatively short.

months old are stunted in their growth. Furthermore, 42% of all deaths are in the 0 - 5 age group.

Kenya has pursued an active strategy for the development of ASAL since 1979. Nationwide the results so far have been modest at best. ASALs agricultural yields have increased at an average 1.5% per annum, while the population growth rate has been around 4%. Clearly this is nowhere near the agricultural yields needed to support ASAL populations at the currently inadequate nutritional levels.

Whereas the outlook for the 22 ASAL districts in Kenya looks grim, achievements in Kitui are even less than the average. Agriculture in 1953 contributed to 77% of district's income. In 1977 this had dropped to 17%. Income from wage earnings inside and outside the district in the corresponding period rose from 23% to 82%. Today average annual farm income per capita amounts to some US\$ 20 per head. Another US\$ 20 comes from wages inside the district, while US\$ 58 per head is remitted from the outside. About 50% of all households have at least one wage earner. Forty percent of all adult males work outside the district. In effect, Kitui has been reduced to the role of a classic periphery zone, supplying cheap labour and meat to the centre, living on remittance, and receiving the bare minimum of government services.

The severely reduced role of the agricultural sector in the local economy does not imply that the ecology has recovered, let alone improved. Approximately 95,000 households in one form or another scrape a living from cultivated plots and from keeping their livestock. Through population growth pressure on the land has increased, such that not only have traditional grazing lands been invaded to grow crops, but catchment and fallback areas like Mutito Hills, Endau Hill, and others. Soil conservation efforts in Kitui have made the district a leader in Eastern Province for some years, but it is doubted if its rate of implementation can keep pace with the opening of new lands by the exploding population.

As for vegetation, the land is seriously overgrazed and over used for the purpose of fuelwood and construction materials. Though a growing population does with less individually, in absolute terms consumption increases. Kitui District, excluding Tsavo East Park, in 1991, for example, counts 550,000 head of cattle equivalent. This means there are 0.77 head of cattle per capita. In contrast, in 1919, Kitui District counted 220,000 head of cattle or cattle equivalent distributed over twice the area. Tsavo and the Eastern Statelands in those days were still used for grazing. The population at the time, incidentally was 104,000. This equalled 2.2 head of cattle per capita.

Kitui District at this moment is facing a gathering storm. A deteriorating ecology, and thus a decreasing production potential is but one side of the coin. Outside the district opportunities to

will be 14 million job seekers for 8 million vacancies.

Government offers insufficient scope for a quick solution, as funds are barely adequate to cover recurrent cost and operational budgets are limited. The overriding development question is whether a solution can be found.

TOWARDS ENVIRONMENTAL BANKRUPTCY?

The ecological destruction of ASAL lands is related to distinct environmental thresholds, each of which, when reached, generates a new balance denoting a lower potential to reproduce or produce. For example, deforestation may lead to increased overland flow. This in turn, may cause soil erosion. Hardpan formation of eroded soil leads to reduced infiltration, and adds to overland flow. Concentration of overland flow leads to scour gullying, followed by headward retreat gullying which sometimes reaches the proportion of a small canyon. One gully is the mother of many, which will continue to form until a new base level is reached. Base level is here defined as when sediment neither erodes nor accumulates. The new balance or phase (Text Figure 1) is characterised by: a. a lower groundwater table; b. shorter and more destructive peak flows of streams; c. reduced water availability in the dry season (i.e. dry seasons becoming longer for grazing); d. shorter cropping seasons; and e. replacement of vegetative species by less demanding species. The resultant reduction of biodiversity implies less food diversity and a narrower range of options for the different land uses.

This process is a possible example of many. It is however, important to note that each process is essentially one and the same, whereby injudicious intervention in one of the key components: land, water and vegetation, leads to changes in what is one system. Conversely, knowledge of the system may lead to improvements since the process is not irreversible. However, at each progressive phase of degradation, the cost of reversal becomes higher, if not counterproductive. One should further note that the limits are narrow and inflexible, due to the fragility of ecosystems in semi-arid areas.

Text Figure 1 shows the different phases in a degradation continuum. Using this figure one can discuss the ecological history of the district. One postulates that there existed an ecological balance in the district before the arrival of the Akamba around 1775 until the turn of this century. Population density was low and principally concentrated in the rainbelt of the "Kitui Highlands". A balanced ecosystem does not in any way exclude mishap or famine. According to historians, 1775 - 1850 marks the height of Akamba wealth, decline set in after 1850 as a result of drought, wars, and disease, in the aftermath of the drought of 1832. Resulting from the same drought, elephant herds moved to other grazing areas,

calamity was wiped out by the six year drought lasting from 1898 until 1904. Whilst the population in 1896 still counted 140,000 this had been reduced to 95,000 in 1910.

Ecological imbalance was directly accelerated by the colonial masters, who, from the turn of the century, structurally and methodically drained the district of its resources. Impoverishment first commenced with the introduction of the hut tax and the poll tax, followed by the forced sale of cattle at government determined prices. As an alternative the Akamba were given as an option to work for the settlers, but this was resisted until 1931. From then onward migrant labour, including recruitment to the army and police forces, became common. The forced sale of cattle continued and was accelerated during World War II, when the district produced the bulk of the meat for the urban areas and the military. Kitui trade was the exclusive monopoly of Asian traders during this period.

The previous measures were further exacerbated by dispossession of traditional grazing lands in Tsavo, Eastern Statelands, and Yatta. These areas amount to more than 50% of the district's land area. In addition overgrazed areas were temporarily closed for the purpose of recovery. Some of these later became the property of the new asomi created by the colonial administration.

Livestock policy, land policy, taxes, migrant labour, and exclusion from trade had a profound negative influence on land use and land use patterns, which far outweighed the negative effects of population growth. The population had jumped from 95,000 in 1910 to 154,329 in 1937. Shifting cultivation became sedentary agriculture under shorter fallow periods, managed by women since husbands were absent and children started to attend school. Labour limited farming households and semi-arid ecology do not mix on a sustainable basis without technological compensation. The new farming systems, as well as land clearing, deforestation, and European farming practises, set off the beginning of a new denudation cycle, or at least, its acceleration. This was compounded by overstocking of the alluvial plains (matiko), which are the traditional fall back areas during the dry season. Deforestation of these plains moreover reduced water availability, and thus their use. Inselbergs and their surroundings, because of the vicinity of springs, underwent a similar fate as sedentary agriculture started to compete with livestock and wildlife in the dry spells.

Economic impoverishment led to ecological degradation, increasingly resulting in less production, and an increasing need for food imports to combat famine. Food imports between 1930 and 1950 averaged 18,4000 tonnes per year for a population which in 1931 counted 139, 652, 154,329 in 1937 and 224,383 in 1951. The district in those years was less than 50% self sufficient in food.

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Figure 2: Location of the ALDEV measures.

Source: African Land Development 1962.

Whilst still maintaining the earlier mentioned policies, the colonial administration introduced the ALDEV scheme in 1946 to improve the ecology and to get food self sufficiency and exports. This succeeded. In 1953 export of food amounted to 2862 tonnes and 9199 head of livestock (mainly cattle). In 1957 this amounted to 5807 tonnes and 21,960 head of livestock. It is further worth noting that the production of castor oil played an important role.

The ALDEV Scheme in Kitui indirectly payed for itself, as the proceeds from the district to the colonial government were larger than what it invested. Proceeds to the government were 355,380 pounds and costs were 336,870 pounds. It is further worth noting that ALDEV benefitted principally the "Kitui Highlands", as shown in Figure 2. These are Central Division and Kwa Vonzia Division currently. They got dams, cattle dips, credit, marketing, improved tools, improved seeds, insecticides, technical assistance and extension. The "Kitui Lowlands" hardly benefitted at all. In fact, they paid for the improvements in the "Highlands".

Although a good deal of the colonial injustices were done away with after independence, ecological degradation has continued. The high rate of population growth obviously generates increasing pressure on the land. During the first decade of independence the importance to continue the land conservation component of ALDEV was not recognised, since the nationalists had campaigned so hard against its attendant communal labour. Subsequently, perceptions have improved.

However, even to this date, there is insufficient appreciation of the causes and the cure by government and donors alike. Programmes to offset or to divert present trends are therefore bound to have little or no impact. For example, in terms of appropriate technology and implementation rate Mutomo Soil and Water Conservation Project (1982 - 1990) established a record in East Africa, second to none in providing water to the population, despite waterpoints functioning to only 42% of their capacity at present. Mutomo Division has led the District and Eastern Division for the past five consecutive years in soil conservation. Yet according to local staff and the inhabitants, conditions in Mutomo have not improved. When no answer to such a question can be given, something must be amiss.

Other programmes in the District have also shown a less than impressive record. For example, an evaluation of the USAID-financed water projects constructed in the District in the period 1982 - 1987 revealed that of the 269 structures, only 12 could be considered complete and functioning when USAID withdrew support. The Annual District Reports 1969- 1979 further show that only 23% of planned projects, costing Ksh. 77 million, had been completed in 1980.

lessons from the past are not to be learnt. Judging by the contents of its Plan of Operations, it seems that the Kitui Integrated Development Programme, sponsored by DANIDA, is heading in the same direction.

Meanwhile Kitui is awaiting its fate. Government and donors are fighting a rising tide, perhaps postponing the inevitable. Real issues are either not addressed or otherwise avoided, and most likely not understood. Scarce funds are principally used to maintain the government machinery. Food imports, after ALDEV, show a steadily rising trend. The resource base is dwindling. Food output per capita is falling, and job opportunities are becoming less. Low production and a narrow range of produce, as well as poor access, have generated non-competitive market centres, where a network of middle men reigns. They buy cheap and sell dear.

The sum of the above mentioned factors contribute to the process of desertification. It is not inconceivable that Kitui over the next few decades will reach the final phase of ecological and economic breakdown as summarised in Text Figure 1.

LESSONS FROM THE PAST

1. Donors persistently equate goals of reaching self sufficiency in food with subsistence agriculture. This is a fallacy. Whilst subsistence agriculture is an important component of present farming systems and thus must not be ignored, the fact of the matter is that two thirds of what the average farm produces is sold off to pay for school fees, uniforms, and other household needs. Later in the year, food is bought back, quite often at double the price, especially in the outlying areas. Further, taking into consideration that 80% of the district's income is derived from wage earnings, approaches to development must follow the logic of intervening and developing a cash economy rather than a subsistence economy.

2. Conservation projects continue to fall short of their targets because the local population is usually more preoccupied with immediate survival than with long term problems of the environment. The population may regard conservation measures as luxuries imposed by outsiders who do not appreciate the severity and continuity of survival challenges and crises.

The previous attitude becomes understandable when considering, for example, the benefits of soil conservation in ASAL. A study conducted by Holmberg (1990) in Kalia sublocation of Matinyani Location, showed that the investment in soil conservation was repaid in five years. Recalculations of the data by Pagiola (1990), using a more realistic approach, however concluded that repayment is possible within eighteen years. Kalia sublocation is situated in AEZ IV. In agro-ecological zones V and VI, positive returns will

Similar situations in re-afforestation and range rehabilitation also occur, particularly if emphasis is put on conservation qua conservation rather than as a means to increased and sustainable production. The approach to environmental conservation should, therefore, be modified to address both short term immediate demonstrable benefits as well as long term benefits.

3. Throughout their history, the Akamba have shown an impressive tenacity to hold on to their livestock, especially breeding stock, as their only means of security, against drought in particular. Attempts by the colonial administration to find a balance between livestock numbers and a sustainable resource base failed because they were unable to provide a viable alternative to the livestock based traditional security. The impasse was later self perpetuated by the population explosion. Unless government comes up with an alternative the ecology will continue to deteriorate to the point of breakdown under the onslaught of livestock.

4. The ALDEV experience has conclusively shown that there is a direct connection between improved economic conditions and an improved ecology, as well as significant increases in food production. Furthermore, examination of the data, from the turn of this century onwards until today, shows that policy rather than drought is the determining factor in production. The most important lesson is that environmental conservation is viable only when related to income generation, and probably security against drought. Therefore, any development plan must thus incorporate these three basic elements when starting to deal with a participating community, who in the future are expected to plan and to generate their own development projects.

It is perhaps surprising that 30 years after ALDEV and 90 years after the beginning of the colonial era well recorded lessons have not been digested. A collective memory seems to be lacking in the public arena, whilst donors tend to take their data home when they leave. It is, however, high time to look back and take stock. Otherwise increasingly scarce funds keep being wasted.

5. Whilst until the end of the Second World War, Kitui District was exploited purely for economic gain of the colonial power, the ALDEV Scheme was introduced in 1946 to combat rising poverty, a deteriorating environment, and increasing political unrest. As mentioned before, the scheme cost less than it produced. Present district income should be analyzed to find ways and means how the district can partly finance its own projects. Dietz and van Geuns (1982) concluded that Kitui does not have the capacity to attain autonomous development. Donors could give the district a helping hand to become more closely involved than at present. For example, a price policy for meat export could be introduced whilst guaranteeing minimum prices for producers, and a service tax levied. Donors, in Kitui District, supporting the livestock sector,



Figure 3: Land adjudication completed in 1980.

Source: Survey of Kenya 1980
District Development Plan 1980

market. So why not finance holding grounds, abattoirs, and related infrastructure, hand it over to the district, and help them run it.

6. Ever since Kitui became part of Kenya, from the turn of this century onwards, the colonial administration, GoK, and donor services and activities have concentrated on Central Division and Kwa Vonza, or on divisional centres at best (e.g. Mutomo Location).

The concentration of ALDEV activities was already mentioned and illustrated by Figure 2. Since independence not much has changed. Changwithya Location, which includes Kitui Town, in the period 1973 - 1979 was assigned 64% of the total budget, and realised 76% of expenditure. As illustrated by Figure 3, land adjudication completed until 1980, covered almost exclusively Central Division and only some parts of Mutomo. Apart from the ALDEV dams, most of which have ceased to function, Central Division also counts the bulk of all boreholes and improved shallow wells. In contrast shallow wells in other parts are of a much more rudimentary construction. The bulk of USAID funds were expended in or near the district centre, judging from the location of the projects since no financial data are available. Admittedly Central and Kwa Vonza divisions carry 34% of the population, but allowing the other divisions to lag behind negatively affects the entire district.

Moving projects to the divisional level seems to generate the same phenomenon as above. As mentioned before, MSWCP constructed 64% of its water points in the two locations closest to Mutomo town, including Mutomo location itself. Wisner (1978) reports that in Kyuso food relief went to parts with the easiest access and with the higher ecological potential. Areas that were first affected were the last to recover. The Ministry of Agriculture has attempted to offset this by stationing a TA in each sublocation. A lack of change is presumably due to a lack of critical training to identify and formulate activities. Chiefs with more authority and political clout or influence carry the day.

As to the recent decision of KIDP not to appoint divisional coordinators, this must be considered a retrograde step that continues present ills, preventing equitable development in the district, thereby distorting the process and slowing it down.

7. Perhaps the continued absence of a usable and practical information base, including a land information system in particular, foments a continuation of past and present ills, which permits certain groups to benefit disproportionately. The absence of such information benefits the better off, and goes against the poorest of the poor who are the purported target groups of donors, DANIDA included. Donors themselves are thus working against their own objectives.

KEY ELEMENTS

COMMUNITY PARTICIPATION

Kitui District, since the turn of the century, embarked on a road that has led to continued economic and ecological impoverishment, first caused by colonial intervention and later self-perpetuated by explosive population growth. This has been further compounded by market failure; such as lack of incentives, price distortions, property rights, and others; by institutional failure; information/knowledge base failure; and educational system failure. For example, curricula of schools prepare pupils to leave the district rather than to teach them about their environment and how to improve it and sustain its productivity.

No government or donor, however rich, can deliver development to a community. Development is only possible when governments, donors and people work in tandem. People are assisted to develop themselves and their conditions within mutually established frameworks and policies. This includes target populations bearing the major financial costs. No western European country could have developed under the conditions of Western style donor aid practised in Africa today.

Whilst recognising the overriding importance of community participation in development, the first question to raise is: "Participation in what?" Participation will only become a fact if it makes sense to local perceptions. If this criteria is not met, programmes or projects will never go beyond the status of a financial milking cow. The KIDP Plan of Operations is neither a product of participation nor does it answer to local perceptions. Appraisal was limited to a group of consultants. A baseline survey that could have helped to identify the real issues was made a part of programme implementation. Moreover, whilst ecological degradation and rehabilitation is one of the fundamental issues, the baseline survey has been confined to socio-economic parameters. The DDC never accepted the Plan of Operations but passed it on the promise of flexibility by the donor.

Participation thus became a criterion of the Plan of Operations after the fact. The Plan of Operations emphasises resource conservation as a means to food self sufficiency, but ignores the link between resource conservation, income generation, and drought relief. Consequently only the promise of water will serve as the carrot to implement soil conservation, range rehabilitation, and re-forestation. The Plan of Operations essentially reflects the donor way of thinking. It must be doubted whether it will ever find its feet in the community.

In contrast to KIDP, the Diocese of Kitui has followed every correct procedure to engage a participating community in resource conservation. But, as with KIDP, there is no linkage with income

generation, albeit assistance is rendered in times of drought. For this reason results are disappointing, also because a vision is lacking.

Whereas the introduction of short term benefits will go a long way towards achieving participation, it will not solve the present problems altogether. Continued and close interdepartmental co-operation in the field is a further condition to attain the envisaged progress and goals. No department at this level has widely trained staff or adequate numbers to form multi-disciplinary interdepartmental teams, with team members acting in complementary roles. A mere 10 days of training of trainers, who are to train others, as specified in the KIDP Plan of Operations grossly underestimates real needs, especially the fundamental requirement that new approaches and new working conditions be introduced.

Trainers and staff who are daily communicating with target groups need materials displaying a clarity of purpose as to desired ends. These must be directed at the level of technical assistants, social development assistants, and teachers. "Sustainable Agriculture in ASAL", which was produced for KIDP, is an example of this kind of training manual. Other manuals like "Trees in ASAL" should follow. Technical assistants must further be trained in aspects like the Delta Method, as techniques of participation cannot be confined to social development assistants and their supervisors alone.

Land use plans and farm plans will be needed as a basis for specific, mutually agreed upon action. The accepted medium to arrive at this stage is participative rural appraisal. However, before embarking on such an exercise prior land evaluation must be carried out, so that field staff have a firm understanding of available options, corresponding environmental impact for each, and environmental standards to observe. The same land evaluation is further to be used as a reference before drawing up final plans.

Credibility of governments and donors is of utmost importance in the participation process. Programmes that cannot deliver on promises or are habitually late in delivering, will find that participation will come to nothing if this condition is not met. People in Kitui have seen donors come and go for thirty or more years. Many left with just a ripple. Few succeeded. People therefore have a right to be distrustful, even resentful or be forgiven in saying that "the elephant only passes once".

WATER

Resource improvement is, without any doubt, the primordial condition for the desired development of Kitui District. All else comes a distant second. In the public's mind the immediate need for water, however, surpasses any other perception of development. The water problem must therefore be addressed, within a resource conservation framework, as a matter of immediate priority. This

means that water development must be limited to environmentally sustainable levels. More specifically, since waterpoints invariably increase local grazing pressure around them, their physical distribution and the availability of fodder must be taken into account. Under Kitui conditions a network of large numbers of small waterpoints are therefore more viable than a lesser number of large waterpoints.

The most important category of waterpoints are those related to the traditional fallback areas during the dry season. As a rule these areas are hills, inselbergs, riverine plains, or large natural depressions. Hills and inselbergs often produce springs, whereas footslopes are natural sites for shallow wells. Areas with many outcrops are logical sites for rock catchments. River courses and small streams in particular are the natural sites for sub-surface dams, as well as shallow wells along parts of banks that are only sporadically inundated during the rains.

The majority of the 234 identified water points and an additional 23 in Mutomo Division, of which the construction is to be financed by KIDP, belong to the category of "fallback area" or "key area" waterpoints. Initially proposed by LDC's, and subsequently approved by Sub-DDC's and the DDC, it is logical that these waterpoints are locally perceived as of primary importance, since their areas of influence may cover at times as much as an entire location (e.g. Endau Hill). Breakdown of a key area therefore has far reaching ecological, social and political effects.

Prior to increasing water availability in key areas, biomass production must be increased first to prevent accelerated degradation. Conversely, surrounding areas with low biomass production must first be provided with a network of water holes or water pans, which keep livestock away from the key areas for as long as possible after the rains. These secondary category waterpoints are easy to construct by local farmers at a cost of 10,500 Ksh. each, and at a rate of 50 per division annually. Once biomass production around them has increased, they can be correspondingly enlarged.

In view of the above a total of 73 catchment areas were chosen to coincide with key areas where waterpoints must be developed. Environmental protection was an overriding motive. However, such a high number of waterpoints is of equal importance as related to calculated needs, and in line with the targets as set out in the KIDP Plan of Operations.

The previous approach was recently abandoned in favour of a decision by KIDP's Programmes Management Unit to reduce the number of catchment areas from 73 to only 10 per annum. The supporting argument deals with community participation being more viable when the number of areas is limited, and in view of the scarce institutional support available. However, for reasons stated

previously, it is doubted if community participation is viable at all. Furthermore, if the number of areas are limited to 10 annually but targets of water development are maintained, this means that a majority of key areas remain unprotected whilst water availability, and subsequently pressure on the areas increases. Putting people before ecology is a noble thought, but it is also impractical. Ecology and people will suffer equally. If water development, on the other hand, is kept in line with the number of areas, output will be so low that programme cost can no longer be justified. In that case KIDP would be better off to drastically cut its budget, and limit its activities to two divisions at the most.

The concept of improving traditional key areas as a point of departure in developmental thinking is more readily applicable in the Kitui "Lowlands". There population density is relatively low, for it averages 19 people per km² and landforms, such as inselbergs and floodplains, are more frequent than in the "Highlands". Central Division and Kwa Vonzia Division combined have a population density of 100 inhabitants per km², whilst the population density of Mwingi Division is 80.

Running out of traditional key areas to develop as related to population density means that new key areas must be built. This is what ALDEV did in the "Highlands" for obvious reasons. The total of new key areas (dams) built by ALDEV number 400. In 1977 a total of 73 were still functional. A recent study by ASAL CONSULTANTS and NORCONSULT has shown that those about 30 are currently functioning.

KIDP or other donors' efforts in Central and Kwa Vonzia divisions should concentrate on the rehabilitation of these dams, which includes improvements of design and appropriate environmental protection. Rehabilitation and increasing water availability of traditional key areas in these divisions should have equal priority.

An absence of competitive markets and limited off-farm employment in Kitui District is a direct result of severely limited development of urban centres, mainly for lack of water. Whilst water shortages in Kitui town could be alleviated through better management, small towns like Kyuso, Mwingi and Mutomo lack piped water supply entirely. Also cattle markets cannot be expected to develop if no water is available. Donors have shown a traditional reluctance to financing water supply for rural centres, but should look again, bearing in mind that otherwise the commercial sector will remain a middle men affair and the trek of migrant labour to the cities will continue for no jobs can be created in local commercial centres without at least water and electricity.

Between December 1990 and July 1991, under the auspices of the DDO's Office, KIDP and UNICEF financed the construction of 300 46m³ water tanks at approximately 160 schools, distributed over several parts of the District. The motive of KIDP was to supply drinking

water per se, but further taking into consideration that schools may serve as points where people can collect limited drinking water during droughts. A more important motive of KIDP concerns the supply of water to schools as a pre-requisite to establish agricultural, agroforestry, forestry and grazing plots on school grounds with a view to teaching children new skills in semi-arid agriculture such as organic farming, zero grazing, making optimum use of soil water etc. The schools programme will be discussed in some more detail further on in this paper.

It appears that by the end of 1991 construction of the water tanks will be discontinued. Given the startling positive effect this activity has had on community mobilisation in particular, donors should think twice before withdrawing.

THE CATCHMENT APPROACH

The basic issues of resource improvement in semi-arid conditions are soil fertility and water availability (soil water, surface water, and groundwater). The condition of both of these depends on the hydrologic cycle and the manner in which it is manipulated. Hence the catchment approach.

The prevailing climatic conditions dictate that as little water as possible is lost through evaporation, runoff, or percolation into the groundwater table at a level where it no longer can be recovered by shallow wells. This requires careful engineering with regard to land use planning in terms of maximum returns to labour invested, and optimum environmental conditions. Planting of trees must consider their effect on conservation, their envisaged use, and their commercial investment value. Agroforestry systems need to be designed as to their best use of soil water (i.e. soil water use at differential depths) and effect on soil fertility. The selection of crops must take into account the differentiation of moisture zones in the catchments in terms of yield response to water. The planting of pasture must be related to water availability and so on. Above all, the catchment approach is really an exercise in collective self reliance. A focus on community participation is thus essential, further taking into account that target groups are supplied with all the relevant information which must be communicated in the most effective manner.

The previous condition obviously requires close interdepartmental co-operation or a so-called integrated approach. As the catchment approach became government policy in the 70's, attempts in this direction were subsequently made. However, these failed. Though departments are still paying lip service to the concept, the approach is in reality sectoral. Despite serious efforts, results are not in line with what should be. Re-afforestation is characterised by *Cassia semea* or *Cassia alliodora* on school grounds, police stations, and around residences. Government or donor financed waterpoints revert to private use, as is the case

with improved pasture. Rehabilitated rangeland reverts to its previous state within a few years. The sectoral approach precludes community participation, efforts to the contrary notwithstanding.

Reasons for failure include the lack of a development framework. As mentioned before, viable conservation cannot stand on its own. Other reasons are a lack of co-ordination and a lack of resources, including information. Co-ordination requires leadership for at least three years to establish new traditions. This further clearly needs to be backed by long term commitment by one or several donors. Perhaps understandable, but nevertheless ironic, it is against donor policy that expatriates take a leading role. In the case of a viable catchment approach in ASAL, the only alternative is that MRDASW search the land for suitable people, or even contract foreigners.

Failure to implement the catchment approach in Kitui District does not imply that it has failed in other ASAL districts. It appears that the Machakos Integrated Development Programmes (MIDP) has had some measure of success. It has, however, not been well recorded what degree of success was attained, how this was done, to what was it owed, and what were the costs. A related study would perhaps be of help to other ASAL districts trying to come to grips with the problem.

As mentioned before, the choice of catchments must coincide geographically with the key areas, which on the basis of development needs and community response rank highest in priority. As to size of the catchments (or initially catchment areas or part catchments) these should not be larger than 500 ha, or preferably less (3rd order to 5th order). If implementation of conservation measures runs at a satisfactory pace, areas can subsequently be enlarged. However, it is definitely not recommended to choose areas the size of which allows the different sectors to operate independently, as there will be no visible effect. Failure to see this invariably will affect community participation.

By and large key areas represent points of highest elevation in the landscape. One key area is thus tied to more than one catchment. The choice of catchment or the selection of more than one depends on the environmental impact of developing waterpoints. On the other hand key areas such as riverine plains present a straight forward case.

The choice of target groups is confined to the geographical boundaries of a key area and the related catchment(s) and not the reverse, although people living outside the catchment and making use of a waterpoint must be taken into account. The target group by chance may be an Utui, insofar as these still exist in their traditional form within the district. Utui is however, about social relationships, and geographically too widely spread to serve as a vehicle for structural resource improvement. The sense of working

through Mwethya groups may be questioned on the grounds that these are essentially a response to political needs or donor needs. However, Mwethya groups in Kitui have a record of being viable for the purpose. At the catchment level they should become the nucleus of forming modern day Utui.

Historically, viable resource improvement in Kenya is closely tied to land adjudication. Its introduction at the catchment level will definitely accelerate resource improvement activities. Disregard of this key element, on the other hand, will only continue the previously mentioned state of non achievement.

Land adjudication should further not restrict itself to merely private land ownership. Gazetted hills, forming part of key areas, traditionally belonged to one or several groups. The principal purpose of gazetting hills is given as to conserve these for sustained water supply, to arrest erosion, and to maintain biodiversity. The efforts of the Forest Department notwithstanding, gazetting hills has the opposite effect.

To achieve the desired results, ownership of these hills must revert to catchment groups, who as legally recognised entities use and manage resources within the limits of existing conservation laws. This also applies to waterpoints such as shallow wells, earth dams, and sub-surface dams. Similarly, grazing land that is still communally used, should be put under legal ownership by a group or several groups.

Finkel (1990) recognises the importance of land adjudication as an incentive for resource conservation, but also comments that this inevitably implies permanent cultivation, fencing, sub-division, resale, in-migration, etc., thereby generating radical changes of land use. Farming systems will also change to become part of a cash economy, which further requires a marketing system that deserves the name.

In the major part of Kitui District, and in the Kitui Highlands in particular, a cash economy has been a fact of life for years. Taking the plunge into the future already happened before ALDEV. Marketing systems set up by ALDEV continued for some years after independence, but fell down due to the high cost and slow pace imposed by the government bureaucracy, a lack of private investment and the chronically bad infrastructure, especially roads. Moreover, donors have been consistently reluctant to get involved in organised production and marketing. However, to pretend that projects and programmes can be carried out successfully whilst applying criteria fit for a subsistence economy is fallacious.

Land adjudication ever when it was started, has been closely associated with land concentration. The risk of this going on can be significantly reduced when adjudicating relatively small areas in large quantities equitably spread over the district. For this

reason the choice of 73 catchments in 40 sublocation would fit the requirements. Their completion would lead to adjudication of the adjoining areas for the law on adjudication demands finalisation of defined areas. Conversely, reducing the number of catchments whilst considerably increasing their size, increases the risk as people would flock to the few areas to acquire land titles which are needed, especially by local elites, in credit transactions nationally.

CROP DEVELOPMENT

Approximately 40% of average farm income is derived from crop production. Approximately 75% of crops produced are used for household consumption. Crop production could, however, be increased by as much as threefold, if there was a functioning marketing system for cash crops requiring less rainfall than maize.

Cash crops grown in the district in the past are tobacco, in AEZ IV only: sunflower, still grown in small quantities in Mwingi Division: castor oil: and cotton. Cotton is still grown all over the district. During the past four years, cotton has picked up considerably, partly because of an improved market, but also because of the "cash on the nose" system maintained by Kitui Ginneries. Gross earnings to the producers for the 1991 crop are in the order of Ksh. 8 million.

During the past year, conditions for the production of oil crops have considerably improved. Whereas the district has a record of successfully growing sunflower, serious consideration must be given to the introduction of sesame (sim sim) and safflower, both of which are less water demanding, thus reducing the risk of crop failure under uncertain climatic conditions. Re-introduction of castor oil has to be considered, given the fact that improved strains have been developed at Katumani Research Station.

The record shows that introduction of cash crops and their successful cultivation is not really a problem. In fact this is rather the contrary. Recent experience of KIDP has shown that farmers are the ones pressurising the programme to assist them to produce sunflower for the market.

The real problem with cash crop development lies with the marketing system. The market itself is no longer a constraint for there is effective national demand. For lack of private investors to organise a marketing system, the task is left with parastatals or co-operatives. Apart from lacking capital these have repeatedly shown to lack the business acumen to collect cash crops in the scattered farms effectively.

Although programmes like KIDP seem to dominate the development landscape in district thinking, it should not be left to these programmes to add a cash crop marketing component to their

activities, particularly if their reluctance to do so is clear. The district administration should rather formulate a complementary programme linking present KIDP resource improvement activities with marketing of selected produce from the relevant catchments and areas already conserved. Sponsors may include donors, but also investment should be attracted from the better off, offering favourable conditions.

From both ecological and economic standpoints, cultivation of the aforementioned crops is distinctly more favourable than growing maize. Even after application of the right conservation measures, the best that can be hoped for is a maize harvest in two out of three years in AEZ IV as compared to one year out of three at present for non conserved land. In AEZ V the probability of a maize harvest is less and in AEZ VI none existent. Nevertheless farmers keep trying for lack of alternatives.

Promotion of cash cropping must, however, not exclude the need for subsistence crops, especially on farms that do not have the capacity to earn a full living from cash cropping only. In addition to land conservation measures, subsistence cropping must include an organic component, preferably linked to zero grazing. Organic farming in Machakos District, in AEZ IV, has shown that yields under comparative conditions as those in Kitui, are between two to three times as high, and furthermore the risk of crop failure has been reduced to a bare minimum.

Judging from the Machakos experience one average family in Kitui can subsist on 2 acres using organic farming techniques. This includes growing vegetables as well, though the area covers only part of zero grazing needs. The technique requires three head of cattle and their corresponding daily water requirements or equivalent livestock for sufficient manure to provide the necessary input into composting. Strictly speaking manure is not essential, as compost can also be obtained from plant material only. The manure ingredient, on the other hand, gives better production results.

Fruits of indigenous species played an important nutritional role in traditional society. These were later replaced by imported species, beginning with the introduction of mango in the past century from the coast. With the extensive adoption of mango, from the turn of the century, it became a key food supplement between December and February. Its role during droughts is enhanced.

Policies to increase fruit production for subsistence and commercial purposes do not seem to have had a noticeable effect in the district. Possible explanations include different priorities of government departments perennially faced with severely limited budgets or nurseries selling fruit trees at prices beyond the means of the average farmer. Also a lack of relevant knowledge to pass on to farmers and effective extension techniques may be causes.

However, the motives of government departments must be questioned when it is found that oranges are included in the package, but that the more drought resistant macadamia nut, cashew nut, and guava are missing. It is further surprising that so far no attempts have been made to introduce improved mango varieties from the coast and to graft these on local under stems, whereas the technique of grafting is locally known by some. Similarly, some attention must be given to planting tamarind. It is by far the healthiest fruit in the world, and could play a significant role in the nutritional package of young children.

In addition to fruit trees, species of commercial value for ASAL like gum arabic, dates and neem should be included. It is recommended that a fruit tree component be included in the catchment approach, and supplied free of charge to farmers who carry out land conservation measures or to farms already conserved. Relevant extension and extension materials must be included.

LIVESTOCK DEVELOPMENT

The average mixed farm in the district derives 60% its income from the sale of livestock. Although pastoralism has continuously declined since the turn of the century, livestock production still plays an important role in the existing farming systems. This is more so in the lowlands and the fringe surrounding the lower half of AEZ IV (i.e. the Kitui Highlands) in spite of the fact that the Highlands have the highest total numbers.

Under the present economic and ecological conditions, raising of livestock is the only security for farmers and pastoralists, in the absence of food security system which takes into account frequent failure of subsistence crops, and lack of guaranteed drought relief. Moreover, breeding livestock is a far more lucrative business than earning interest on capital in the bank, particularly when referring to goat breeding.

The district is seriously overstocked. Remember that in 1919 there were 220,000 head of cattle in twice the area. Today there are 550,000 head of cattle equivalent in half the area available seventy years ago! They live off a less productive environment trapped in the downward degradation escalator. Judging from the Kitui District Environmental Assessment Report (1981) the total available land area can carry somewhere of the order of 360,000 head of cattle equivalent. This however, assumes an equitable spread of cattle, requiring a well established network of waterpoints. Zero grazing units on cultivated land are further implicitly assumed.

Reverting to the colonial approach to solve the problem makes no sense, as history has clearly shown. Therefore a strategy must include regular sales at the best prices and a structural

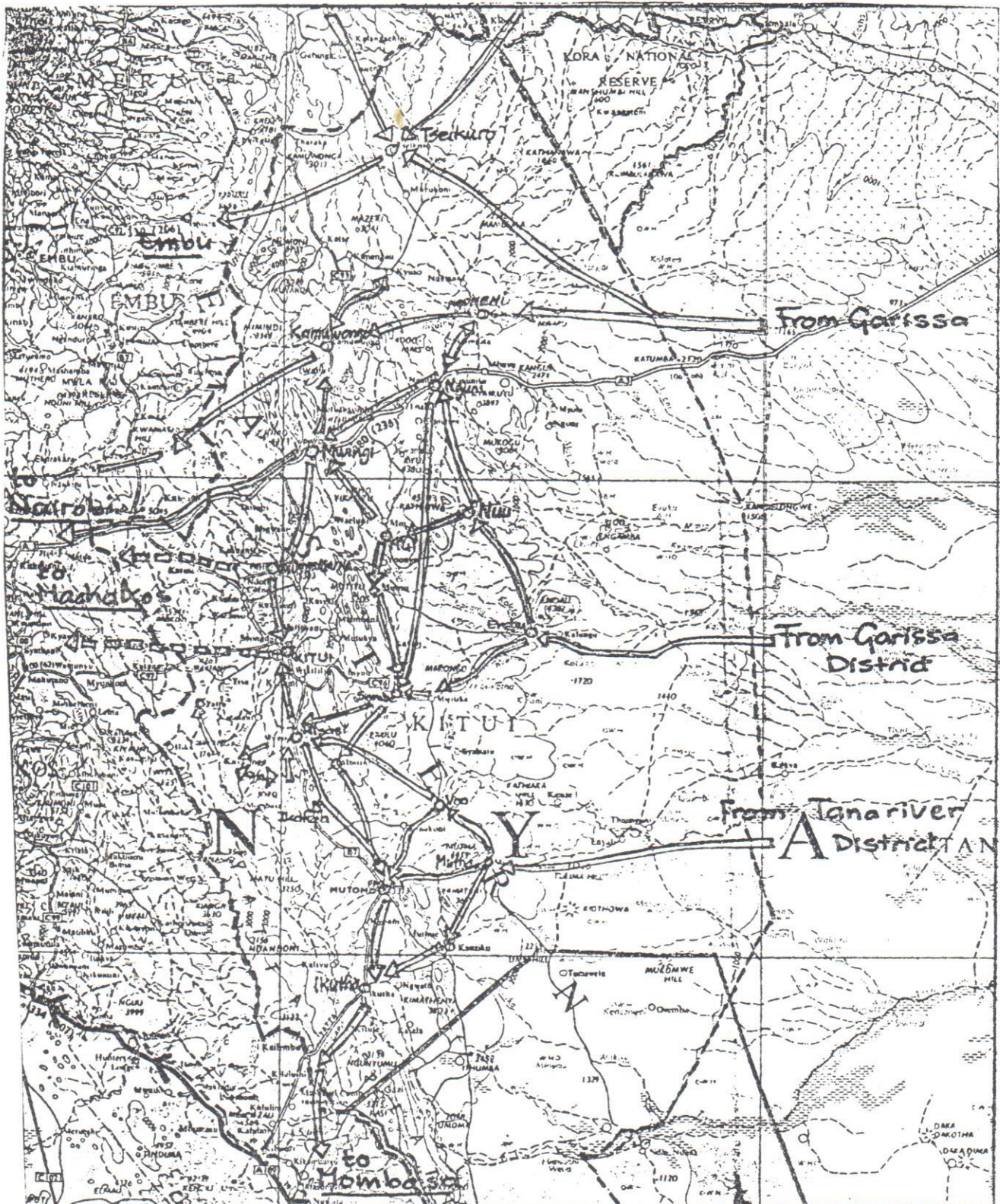


Figure 4:

Cattle movements in and through Kitui District. Entry and trade points from the East are from North to South: Tseikuro, Ngomeni, Endau and Mutha. Main other cattle markets are Kamuwongo, Mwingi, Mutonguni, Kitui, Mui, Zombe, Kisasi, Mutomo and Ikutha. (source: information supplied through the DVO, Dr. Charles Kimaru).

ecological improvement of areas coinciding with cattle movements and trading, as well as promoting zero grazing, pasture improvement, and communal/entrepreneurial raising of livestock at the catchment level.

An improved marketing system cannot be achieved without adequate veterinary intervention and supervision. Accepted standards for animal health and meat quality must be met in order for the meat to be sold in the urban market. Veterinary health facilities must be made available on markets, at holding grounds, and at waterpoints along trekking routes.

As a preliminary activity to the previous, KIDP during the past year has financed mass vaccination campaigns against endemic diseases like BCPP, CCPP, lumpy skin disease, rinderpest, and even rabies. Tick borne diseases were left alone, as continued dipping is too expensive. This fits the GOK policy on dipping in ASALs. Spraying of cattle in confined areas is the only feasible alternative. The aforementioned campaigns must continue until health facilities at the indicated strategic points have been put in place. Campaigns must further be complemented by epidemiological research to determine possible sources of diseases.

The envisaged development of the livestock sector, in line with resource improvement measures, requires dry season and drought feeding lots, waterpoints, holding grounds, sales yards, food availability, and pasture improvement as a starting point. In fact, a combination of some of these elements has already existed for a good number of years. Examples shown in Figure 4 are Endau, Nu, Mui, Mwingi, Zombe, Mutha, and others. All of these are markets and points of a trekking route eventually leading to Nairobi or Mombasa. A majority also are traditional fall back areas or key areas. It therefore seems reasonable to select these sites within the framework of the catchment approach, emphasising establishment of large areas of fodder grasses, fodder trees, rehabilitation or improvement of pasture, development of waterpoints, and development of subsistence agriculture (organic farming) and fruits.

Establishment of such areas will take between 2 and 3 years and possibly longer if done in parts. During this time a network of water pans can be established in the surrounding areas. After livestock have started to occupy (fenced) pastures/feeding/holding grounds, sales yards and veterinary health posts may be added. Small abattoirs and processing of hides and skins could further be considered. Possible consideration should also be given to mechanised harvesting of pasture (i.e. hay for the dry season).

A drawback for pasture improvement has to do with the limited range of available species. Buffel grass (*Cenchrus ciliaris*), Rhodes grass (*Chloris gayana*), blue couch (*Cynodon dactylon*), and sometimes even Kikuyu grass (*Pennisetum clandestinum*) all seem species dating back to the ALDEV period, with a focus on the

rainbelt in the Kitui Highlands. It does not seem that new species have been added since those days. Fodder grasses have done slightly better, with the introduction of Napier and Bana.

Assistance should be sought from the CSIRO Division of Tropical Pastures in Adelaide or Brisbane, Australia. Surely a carrying capacity of 2 ha per beast in the higher rainfall zone, and 4 ha in the lower rainfall zones could be reduced by half or possibly somewhat less, when introducing e.g. other species of *Cynodon* or *Stylosanthus* (Townsville *Stylo*).

Cattle improvement (bulls) and goat improvement (billy goats) have been on the wish list of the Livestock Department for some time. However, the purpose is not clear. As long as issues of fodder and water availability have not been resolved, the introduction of better breeds is of low priority. Keeping of dairy cattle in conjunction with organic farming near urban centres or markets, on the other hand, deserves a feasibility study.

Bee keeping and cockerel exchange are useful supplementary farming activities, but are not really key elements for development for they are geared to the subsistence trap. They could perhaps prove useful catalysts as part of resource improvement activities in catchments, but a close watch must be kept on their cost and time involvement of staff.

DEVELOPMENT OF SKILLS

The District administration, government departments, and donor sponsored projects and programmes, all have, within their limited means, for years attempted to reach target groups to help them implement projects, introduce new crops, and so on. Whatever the achievement of the day, the fact is that the situation in the district has remained static at best, despite significant amounts of money being annually spent. NGO's have fared somewhat better, but are limited in their scope and range.

Though other factors, some of which have been repeatedly mentioned, play a role, one of the salient problems is the structure and process of communicating with farmers. Addressing farmers barazas (mostly women) through megaphones or in small groups has little effect, particularly if concepts are new to local thinking. The problem is simply that there are too many people preaching to adults without contextual knowledge for absorption and utilisation of whatever the message is. For the knowledge to be used, it must be internalised and become part and parcel of community knowledge. Rather than trying to obtain short term effects by addressing adults in ways which are inefficient from a communication point of view, programmes must direct themselves at long term investment in people and their knowledge by addressing different audiences with different techniques.

Considering that 53% of Kitui's population consists of children less than 15 years of age, they are the obvious target group. The Ministry of Education in particular, but also the Ministry of Health must come to recognise the importance of children learning about their own environment so as to prepare them for a sustainable and productive life in the district instead of migrating to the cities, where increasingly, it is doubtful they will be able to earn a living. "Catch them young and save the band aid" should become the motto.

Children can be taught about organic farming, zero grazing, animal health, and conservation farming on the school grounds. Around schools they can be taught about trees, their uses, the energy problem, and traditional medicinal herbs. They can also be taught about the causes of infant mortality, AIDS, and other diseases. Absorbing of knowledge will be more effective if accompanied by the right teaching materials.

The role of children as communicators in Kitui households should not be underestimated. Traditionally, knowledge of local themes related to living conditions is highly regarded, and is shared irrespective of the position in the family. Children are very important sources of knew knowledge for the family as has been shown in many studies in Kenya. As young farmers, they are also more than likely to experiment than adults.

Considering the impact of the earlier mentioned water tank programme in the District, the author of this paper recently submitted a proposal to MRDASW focusing on the schools approach. The proposal includes the construction of 2,000 water-tanks and 1,600 VIP latrines over a 5 year period, at a cost of US\$ 2,966,800. Forty target schools have been selected to establish school farms for learning new skills. The school farms in addition will be able to feed 16,000 children one full meal every two days. The cost of this component over 5 years is US\$ 1,103,700. The schools will become self supporting after 5 years when not including tools and teaching materials. Incorporation of parents into the programme will cost an extra US\$ 192,000. over a 5 year period.

District polytechnics at present cannot adequately teach pupils the required skills of the different disciplines to produce fully trained artisans, for lack of means, infrastructure, and funds for recurrent costs. The importance of polytechnics has been recognised for years by e.g., the Diocese of Kitui and programmes like Action Aid. Programmes like KIDP and government departments have as yet not caught onto the same notion.

Polytechnics could be greatly assisted if they were given the opportunity to produce jembes, wheelbarrows, ploughs, ox-carts, furniture, building materials, and the like for development activities in Kitui. Polytechnics should also be given priority

consideration in building construction programmes. Utilising polytechnics should in fact become district policy. Rather than to buy expensive tools in Nairobi, these can be produced locally at considerably lower prices, benefitting all parties concerned, and enabling the polytechnics to improve their facilities and conditions. The District must also give due consideration to setting up a school for semi-arid agriculture. Donors for such a venture are not too difficult to find.

DROUGHT RELIEF

Drought relief, community participation, resource improvement, and income generation are the fundamental issues in Kitui development. For as long as economic and ecological conditions in the district do not dramatically improve, government led intervention in drought relief will remain a necessity as a pre-requisite to sustained development.

The basic problem in drought relief is not the distribution of food, but the organisation to perceive its necessity in time, and to put the machinery in motion. Farmers, of course, do not have to be warned. They usually know quickly enough in advance what is coming. Government and donors as a rule recognise it at too late a stage. Finkel (1990) recommends the following:

A network of rainfall gauges should be installed to record daily rainfall at the camps of chiefs, sub-chiefs, government offices and schools. Data is to be computer processed in Kitui, and linked with a central unit in Nairobi, with access to international satellite and remote sensing networks.

A master plan must be prepared for drought contingency intervention, which covers operational contingencies for drought occurring at the locational, divisional, district or national level. It should include a budget for interventions. The plan must include logistics for purchasing, storing, transporting, and distributing of food aid.

Plans must be designed, and annual workplans produced for works of public benefit such as roads, soil conservation, tree planting, water harvesting, and other (i.e. food for work).

Allocation must be made in the budget for purchasing large number of animals as well as developing facilities for slaughter, transport, and storage. Allocation must be made in the budget for subsidy to the distress sale process. Note that this could easily be incorporated into the proposed livestock development strategy.

A skeleton institutional framework must be set up, that will take over, assume authority, and co-ordinate operations in case of calamity. This unit should be drilled regularly.

The role of donors and NGO's must be defined to avoid duplication, competition, and inefficiency, such as took place during the drought of 1984, or amateurish attempts to assist.

Whilst considering the points above, it must be taken into account that the aftermath of droughts is usually more severe on human life and on health than the drought itself. Timing the end of relief operations is thus important.

Droughts and their consequences lately have become rather "inconvenient" issues for governments and donors. The present drought in the Sudan was interpreted by some of its government officials as being tantamount to a public admission of government failure (Newsweek, 21.5.91). Therefore the drought does not exist. A recent survey in the U.K. revealed that 60% of Britons suffer from donor fatigue and furthermore equate donor aid with charity.

Ignorance from all side will, however, not abolish droughts. If present trends in ASAL continue, droughts will become progressively worse. Solutions will be possible only if donors are prepared to face reality. This includes a realistic assessment of costs and a structural approach to drought. ASAL can do without band aids.

INFORMATION FOR A PLANNING BASE

The lack of an information base has for years proven a severe constraint on district development. The District Development Office (DDO's Office) is neither equipped nor staffed to deal with the complexities and the organisation of planning information and activities, let alone formulating coherent development strategies. The DIDC does not possess the relevant information base to make decisions on, neither is the DPU able to function as it is supposed to.

Parallel structures, like KIDP, are not much help either for they do not fit. The PMU is part of the DPU. The head of the DPU, the DDO is responsible to the DC. However, it is the ASAL Programme Officer, responsible to MRDASW in Nairobi, and not the DDO who bears the responsibility for programming, budgeting and the application of ASAL programme resources.

Donors and their incurable habit of forming parallel structures to retain control of their funds are inadvertently assisted by GoK, which is not prepared to alter the rules to suit the needs. Before the bookkeepers prevail, a good look should be taken at the consequences. Apart from real integration with the government machinery, all parties compile their often deficient information system for their limited needs, to reach project or programme objectives. For example, KIDP, Action Aid and UNICEF have all recently conducted a baseline survey, or are in the process of doing so. As to the first two organisations, government was only involved sideways. Thus no district collective memory is built up.

The District is the victim instead of being the information beneficiary.

If nothing else can be achieved, at least setting up a joint information base, with the hope that this could evolve eventually into a joint planning process, would signify a step forward. Donor assistance and money in such a venture would be well spent.

DISTRICT TREASURY

Policies like District Focus, for lack of an information base and a viable planning unit at the district level, stand little chance of coming to fruition. Whilst at the central government planning level the procedures of District Focus are closely observed, this does not apply to financing and revenue raising initiatives, which invariably are taken outside the district.

The present archaic structure of the District Treasury may have been suited for colonial times, but does not reflect the needs of the nation and problems the size of Kitui District. In this sense the District Treasury also represents a key constraint on local initiatives, formulation, and decision making, which includes designing schemes for local revenue raising.

Projects and programmes depending on the District's financial administration, as a rule, exceed budgets, or remain uncompleted. The slow pace and the lack of transparency affect programmes like KIDP in their implementation rate, as also the USAID experience has shown. Parallel structures are not the answer therefore.

Donor programmes for Kitui must seriously consider reserving part of their funds to assist in modernising the District administration. These same funds would otherwise be lost anyway through current inefficiency.

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*Note by the author

The author of this paper until recently was the co-ordinator of the Kitui Integrated Development Programme, and is still under contract by the Government of Denmark (DANIDA). The views here expressed are not necessarily DANIDA's.

PART TWO: THE HUMAN RESOURCE BASE

THE DEMOGRAPHIC TIME BOMB

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1. INTRODUCTION

At the centre of any alternative framework in development is the human dimension. Population growth and spatial distribution in a region is an important pointer for guiding the direction upon which the development strategy should focus. In many development agenda, however, this important human element is either omitted or less vigorously addressed.

Since development is brought about by man and woman, it is on him and her that us all, Government, Non- Governmental Organizations, Development agencies, should focus our effort. The ultimate purpose of development is to improve the basic social services and generally raise the quality of life in a given community. We cannot, however, attain this objective without an understanding of where the people live, their numbers, their problems and priorities, their history, their perceptions and many other socio-economic aspects.

Kitui District is one of the arid and semi-arid regions of Kenya whose high population growth threatens the future development of the area. Its deteriorating population-resource balance is set against a limited resource base and a demographically explosive growth rate. The total population in the district increased seven times between 1910 and 1989. The population growth rate jumped from 1.7% in 1932 to about 3.8% in 1989. As a result of this rapid growth, population pressure is now a major threat to agricultural productivity in the district. Like in many other rangelands of Kenya, signs of physical environmental stress and deterioration in human conditions are already evident throughout the district. Among them are land fragmentation, migrations to the more arid areas, increased soil erosion, declining crop yields and a swelling flow of urban-bound migrants.

This paper presents the demographic trends in Kitui District. It is divided into four parts. Part one traces the historical migrations and settlement of the Akamba people in Kitui district. Part two presents the demographic characteristics. In this section population growth is examined from the pre-colonial period to the present. Part three discusses population pressure and some of the major consequences of rapid population growth rates in the area. The last part presents a summary and the recommendations bearing on policy implications. All this information is considered necessary because it forms a strong base upon which more informed decisions should be built if sustainable development in Kitui district is

going to be achieved.

2. MIGRATIONS AND SETTLEMENT

Theories state that the Akamba migrated to their present settlements by branching off, into Kenya, from a group of Bantus who were moving north-eastwards along the coast of the East African region from the Shaba region of Zaire during the early fourteenth century (Ogot, 1968; Murdock, 1959; Soper, 1967; Guthrie, 1962). Archaeological evidence for the Bantu Iron age agrees well with this linguistic proposal. The distribution of "channel dimple-based" pots from the Zambezi river, which date from the beginning of the first millennium, has generally supported an eastern and northward expansion of Bantus from Zaire (Murdock, 1959:106). Soper (1967) has also revealed an iron age Bantu culture, known as the Kwale culture, extending from the hinterland of Mombasa to Pare mountains, and Mount Kilimanjaro.

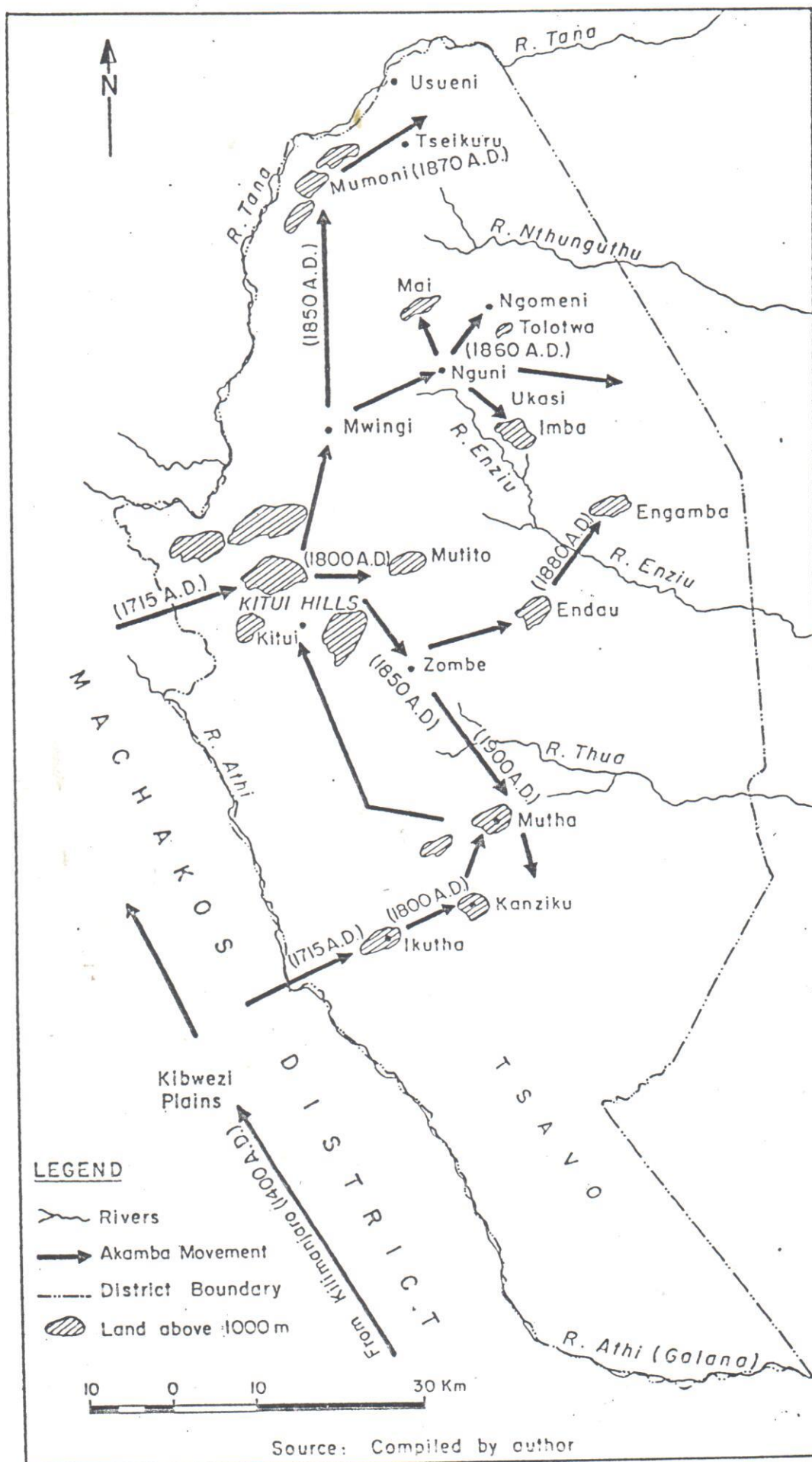
Gregory (1896) holds the view that the Akamba originated from the south of Mount Kilimanjaro. A similar argument is maintained by Fedders (1979) when he states that:

"with an exception of a small group (The Mumoni) all Akamba agree in their oral tradition that the plains around Mount Kilimanjaro were the earliest known region for them --- during the sixteenth century the Akamba dwelt in the plains "Nthi" around "Kiima Kyeu", the white mountain (Fedders, 1979:113).

The white mountain mentioned here by Fedders (1979), which is also indicated in more recent research by O'Leary (1984), is believed to be the snow-covered peak of Mount Kilimanjaro.

Oral tradition suggests that the Akamba arrived in the area of Machakos during the fifteenth century when through migratory drift they left Kilimanjaro plains for the Kyulu (Chulu) hills where water proved insufficient. Migrating across Kibwezi plains, settlements were finally established in the seventeenth century. Scholars have long suggested that the initial Akamba settlements in the hills were for protection against the Maasai, however recent investigation of both Maasai and Akamba oral traditions casts doubt on these early interpretations (Jackson, 1976:191). More likely fertile soils and reliable water supply provided the prime inducement for the emergence of prosperous rain-fed agricultural settlements in the seventeenth century.

It was in Mbooni hills that the social character of the Akamba developed and where the primary institutions of the Akamba society emerged. Through the creation of terraces and simple dams, the Akamba society adjusted to their highland environment. From Mbooni families migrated to neighbouring hills such as Kilungu, Mbitini, Kalama, Iveti and Kanzalu. These hill lands of Machakos became known as IULU, to be later corrupted as "Ulu" in colonial



Map 1: Pre-colonial Akamba Migration and Settlement in Kitui District

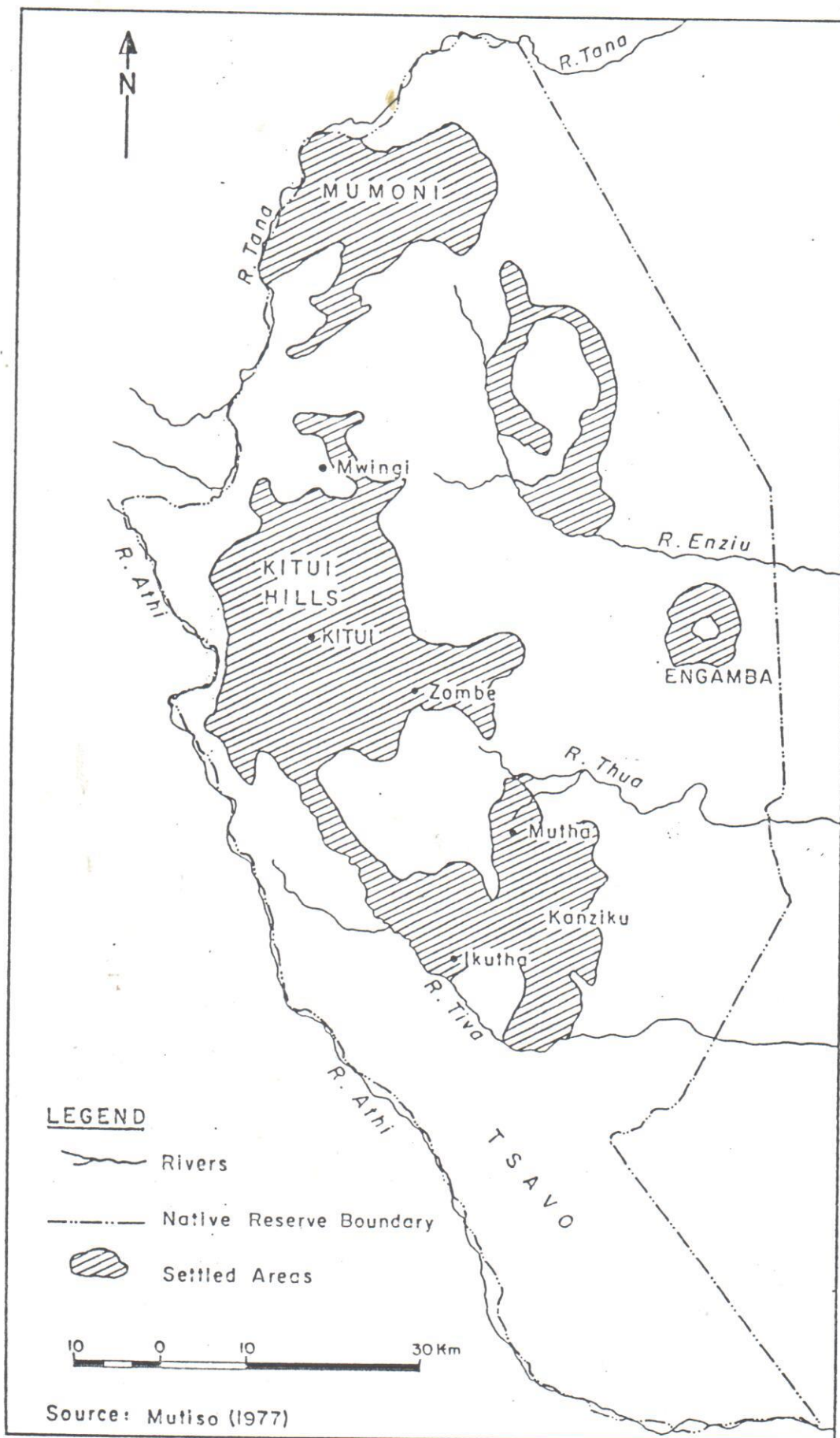
geography. Subsequent population growth and increasing denudation of the hill tops resulted in erosion such that by the beginning of the eighteenth century small groups migrated from Mbooni hills, crossed the Athi river and established the Akamba settlements in the central hills of Kitui and at Miusyani in Ikutha (Map 1). Lindblom (1920) dates the crossing of the Athi river into Kitui at about 1715 A.D. About 1740 A.D. larger groups followed into Kitui and movements continued until 1780 A.D. (Lindblom, 1920:162).

Once in Kitui the Akamba continued to migrate. From Miusyani they moved to the hill complexes of Ikutha, Kanziko, Mutha, and Inyuu, eventually reaching the central block of mountains in Kitui Central and into Mutito hill about 1800 A.D. From there migrations went south-eastwards towards Zombe. At Zombe, one migratory path went towards Makongo mountain and from there to Endau mountain, another edged southwards towards Mutha and Kanziko where there were already Akamba settlements already.

From Map 1, it can also be noted that, another migratory route from the central block of mountains went northwards through Mutonguni and Migwani hill ranges reaching as far as the hills which surround Mwingi at about (1820 A.D.). At Mwingi one migratory route continued northwards reaching the Mumoni range at about (1850 A.D.); the other followed the Enziu river eastwards. At Nguni this path split. One route moved northwards reaching the Nthunguthu complex of hills (Mail), Ngomeni, and Tolotwa outcrop about 1860 A.D. The other wave turned southwards towards the hill complexes of Imba and Ukasi (O'Leary, 1984:19).

The continued population growth forced people from the better watered hill lands into the more arid and drought prone plains. This migration to adjust to population pressure was stopped at the beginning of the twentieth century by the imposition of the colonial system and ancillary differentiation in society (Mutiso, 1977:11; Munro, 1975:125). The population distribution in 1915-1916 is indicated in Map 2. From this map, it is evident that at the advent of the colonial period, there were only three main isolated pockets of population concentration in Kitui District, that is the Central Hills, the Southern block of hills at Mutha, Kanziku and Ikutha, and the Northern range of hills at Mumoni. Another isolated pocket of population settlement was around the hills at Engamba in Eastern Kitui.

The history of the Akamba from the eighteenth century is replete with accounts of devastating droughts and famine. Historically the Akamba coped with the vagaries of their environment through a variety of traditional mechanisms. Hunting, gathering, and trade became viable options for survival. Out-migration from the devastated areas was an option in an area where land was an abundant resource. Raiding became common in times of extreme stress. It is apparent that these traditional mechanisms of coping with drought and hardship are no longer viable alternatives, yet



Map 2 : Kitul, Population Distribution 1915-1916.

drought and famine remain a persistently recurring problem.

Colonial domination of Ukambani began in the nineteenth century and resulted in the Akamba being confined to "native reserves". Continuing population pressure within the Kitui native reserve forced the Akamba into the more arid, marginal lands and the ensuing population and livestock pressure caused severe environmental deterioration. The colonial government undertook vigorously forced soil conservation programmes in the 1950's which were partially successful. Attempts to control the number of livestock, however, met with total failure. With the advent of independence much of the work undertaken by the colonial government in soil conservation was abandoned and once again environmental deterioration became an ever increasing problem as the population had grown and even more marginal lands had been brought under cultivation.

3. THE DEMOGRAPHIC CHARACTERISTICS

The demographic situation in Kitui District is one of the most alarming in Kenya. The total population jumped from 95,000 people in 1910 to about 640,304 in 1989 (Kenya, 1989). Thus, the population increased by almost seven times in only seventy nine years. From Table 1, it may also be noted that the District population more than doubled between 1910 and 1948 and also between 1948 and 1979. Table 1 also indicates that the annual growth rate has progressively increased throughout the twentieth century. The current growth rate is estimated at 3.8% per annum and the district has an overall density of about 30 persons per square kilometre. This density varies considerably from over 100 persons per square kilometre in Central division to under 30 persons per square kilometre in parts of Kyuso, Eastern and Southern divisions.

One of the major factors which has fuelled the demographic flames in Kitui District is the high fertility rates. In 1969, the overall rate was in the range of 11.97 for the 30-39 age groups to a low of 7.96 for the age group of 25-29 (Kenya, 1969). In the 1979 census, the fertility rates were still high with a mean of 9.37 for the whole district (Kenya, 1979). The current fertility is estimated at 8 (Kisovi, 1989).

Table 1
Population Growth in Kitui District 1910-1989.

Year	Total	Annual Growth %
1910	95,000	-
1932	152,759	1.70
1948	203,035	1.68
1962	284,659	2.20
1969	342,953	2.60
1979	464,283	3.50
1989	640,304	3.80

Sources: Population Census Reports. Population numbers of 1910 and 1932 are based on hut counts by the colonial government. The 1989 population figure is from unpublished census data at Central Bureau of Statistics.

A close examination of the 1989 unpublished population data at the Central Bureau of Statistics shows evidence of very little decline in Total Fertility Rate in the District.

By moderate estimates, the district's current population will exceed a million people in less than 20 years. In fact the doubling rate is estimated at only 17 years (Kisovi, 1989). This figure of a million people does not, however, seem excessive or startling, especially for a district of 22, 814 square kilometre-area, until one realises that more than 70% of the district is not suitable for rain-fed agriculture. If we also consider the fact that nine out of every ten people in Kitui District earn their living from agriculture, and if we assume that the current farming technology is to continue for a long time, which is very likely, then this aggregate is certainly high.

Unless something is done to resolve the population problem in the district there is a grave danger of a catastrophe which threatens to destroy the stability of the ecosystem upon which the local people depend for food and water. Doomsday may be an inappropriate philosophy for people seeking solutions. In fact Maddox (1972) argues that it is defeatist and overreactionary in any context. His contentions, however, seem unjustifiably optimistic, for it is certain that never before has the land in the arid and semi-arid areas of Kenya been subjected to such stress and never before have the lives of so many people in these areas been so impoverished. The emerging population resource relationships are truly unprecedented.

4. POPULATION PRESSURE AND INTERNAL MIGRATIONS

Although population pressure is a widely used term in all disciplines that deal with human-environment relations, its definition is a major problem and its measurement is quite another difficulty. Different practitioners within the same discipline and those in different fields conceive of population pressure differently. However, they seem to agree that population pressure (PPR) means an imbalance between the resources of a community and its population. They argue that population pressure may be caused by either an increase in population, a deterioration of resources or both (Browning, 1970:72; Kay, 1970:363).

Consequences of PPR function as neither discrete nor as linear variables. Instead they interact synergistically, accelerate, and compound exponentially. As populations grow and require more from a finite resource base, pressure gains momentum with pervasive impact. Man-land and man-man balances tilt. Deterioration of rural

resources progress with lasting effect. Conditions of life worsen for the following generations.

As indicated earlier, Kitui District is one of the Arid and Semi-Arid regions of Kenya with a worsening population resource balance. Its rapidly deteriorating population-resource balance is a product of limited resource base and an explosive demographic growth rate. Only about 2.2% of the land in Kitui District falls within ecological zone III, which is of medium high potential. Rainfall of about 760-1015 mm. per annum is realised in many areas within this zone such as in Central Division and around the various hills in the district. The rest of the district receives 225-510 mm of rain per year. Much of this rain is torrential and is lost through runoff and evapotranspiration.

Throughout the district, especially in more fragile ecosystems, signs of environmental stress and evidence of deteriorating human conditions have become increasingly conspicuous (Kisovi, 1989:140). However, talking of population pressure in Kitui District may be surprising to those familiar with the comparatively low population densities in the area. Nevertheless, crude density per se has been described as a misleading statistic (Hance, 1968:7). This is so since population pressure upon resources may occur where overall densities are low.

Numerous symptoms and clear signs of deterioration of environment and human conditions are now evident in Kitui. Among them are gullied and eroded hill-sides, deforestation, silt-laden rivers, declined crop yields, food shortage, land fragmentation and subdivision, use of marginal land, breakdown of indigenous farming systems and a swelling flow of urban bound migrants (Kisovi, 1989).

Results of my field work which I undertook in Kitui District in 1988-9 indicate that land fragmentation and subdivision is so severe in Central Division that now land parcels have declined to 0.5 ha per person in many parts of Matinyani, Mulango and Kyangwithya locations (Kisovi, 1989).

Increased soil erosion was reported by 84% of the 345 respondents interviewed in the field. Use of marginal areas (roadsides, steep slopes, more arid areas) was reported by 78.5% on average across the three main ecological zones (Kisovi, 1989:162).

One of the significant consequences of population pressure in Kitui is internal migrations. As pressure builds in the relatively high potential zones of Kitui Central and Mwingi Divisions, it sends shock waves down the ecological gradient and spills over into the more arid lands. Table 2 presents population growth and flows into zones of differing Agro-ecological potential. Once the migrants settle in these fragile areas they apply inappropriate technology which in time turns the areas into dusty wastes. Each year more and more people are moving from their settlement area looking for a

place to graze and cultivate. My field data indicates that migrants from Central Division are largely moving to Kavisuni and Yatta. Migrants from Kitui South, Eastern and Mwingi Divisions are already encroaching and in fact settling or cultivating in the State Lands and even in the Game Reserves (Kisovi, 1989).

Table 2
Net Population Flows into Different AEZs

AEZ.	Actual Growth and Migration Rates							
	1948 - 1962		1962 - 1969		1969-1979		1979 - 1989	
	G	M.R	G	M.R	G	M.R	G	M.R
III	4	-960	2	-1120	2	-1050	2.3	-2346
IV	31	+4100	3	-1660	4	-970	4	-3019
V	32	+3896	7	+3541	4	+2953	4.7	+2443
VI	35	+3569	2	+3050	4	+3840	5	+4231
VII	38	+4068	3	+4133	3	+4247	3.8	+5100

Key: G - Growth % p.a.

M.R - Migration Rate per 1,000

Source: Compiled by author from Population Census Reports: Kenya Colony (1950, 1962), Kenya Republic (1969, 1979, 1989).

It seems likely that as the population pressure becomes more acute in Central and Mwingi Divisions, movement into the adjacent areas will increase. Population pressure and land shortage will become an even increasing problem which must be faced without further delay. As indicated earlier, already signs of environmental stress caused by overpopulation are evident throughout the district. Even in the sparsely settled areas, environmental deterioration caused as much by mismanagement as by overpopulation, is becoming a serious threat to future productivity of the areas. While vigorous efforts to rehabilitate the land through soil and water conservation have been undertaken, and indeed should be increased, so far they have been insufficient. Unless the basic problem of population pressure is resolved in this area, and in other areas with similar ecological and demographic conditions, further efforts in development are bound to fail. This is a challenge that faces us all.

5. SUMMARY AND RECOMMENDATIONS

This paper demonstrates that Kitui District has a serious demographic problem which is likely to influence the nature, pace and direction of future development in the area. It becomes obvious that development strategies for the area need to bear in mind the mounting population pressure and should be geared not only to

increasing agricultural productivity but also decreasing the dependency on land. Population growth means increasing land shortage and a growing landless class. Only through an integrated development strategy can these problems be faced. Development strategies for the area should therefore include, among other things:

1. Emphasis on increasing farm productivity through increased use of intermediate technology. At least different techniques should be applied in different ecological conditions. There are numerous small things that can be done by the small holder that will increase not only the agricultural productivity, but also the carrying capacity of the land. For instance, at the present level of technology, sorghum yields about 700 kg/ha in ecological zone IV. If sorghum were to be cultivated more widely than maize, which yields only 500kg/ha., more people could be supported in the same land.

2. Family Planning education needs to be vigorously promoted and expanded. Increasing productivity and raising the standard of living carries with it the danger of an accelerating population growth. Unless development strategies are coordinated with the promotion of family planning, all gains will be offset by population growth.

3. Self-reliance should be stressed. Traditionally people in Kitui District have been self-sufficient and self-reliant. Within recent decades population growth and encroachment of agricultural activities onto more marginal land has made self-sufficiency more precarious. The frequency with which government has to come to the aid of the people through famine relief programmes is creating a dependency upon the government that is undermining their self-reliance. An attitude is emerging that the government will always take care of the people's problems. Certainly the government has a responsibility during times of emergency; however, dependency of the government runs counter to the spirit of "harambee" which promotes grass root initiative to mobilise local resources. Serious consideration needs to be given to "work for food" projects. Such a programme would maintain the self-respect of the individual and at the same time contribute to the sustainable development of the area.

4. Finally, local participation is the key to development of the marginal areas. The people need to feel part of the planning and implementation process. Too often planning is imposed from above with the attitude that the government or the development agency knows what is best for the people. Any project that is proposed needs to get the support of the people. The ultimate purpose of development is the unfolding of the creative potentials of the community. Strategies should be developed to explore ways and means of unleashing those talents and creativity of the local people, with an ultimate aim of incorporating them in development projects.

5. The main challenges for the Kitui Integrated Development Programme is to break the cycle of poverty, reduce people's dependence on government handouts, and provide an increasing standard of living for the local people. Within that framework, paying attention to the more marginal areas immediately is a worthy concern.

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SOCIAL POLICY AND PARTICIPATION

J. M. MULYUNGI
DIOCESE OF KITUI

1. INTRODUCTION.

Beyond Economic Development

When one is addressing an issue like SOCIAL POLICY AND PARTICIPATION, which are so close to our social set-up, one has to be aware of the social forces at the international, national and local level to situate the subject for Kitui district.

After the modernization ideology failed to deliver economic development, in the late 1960s, the next decade saw the introduction of import substitution and export led industrialization as the major international strategy for economic development. This was to be accompanied on the service delivery side by community development and cooperative development. All of these strategies to economic development were using creation of wealth and economics as their main focus.

As the eighties dawned, it became clear to development international think-tanks that impoverishment of developing nations and their people would continue unless new strategies were found. It was clear that economic development was a narrow concept of development. A new set of development thinkers were arguing that "aspiration of people in the Third World went beyond economic indicators to include political, cultural, as well as social goals....development covered complex series of interrelated change process...where the HOW of development gained is no less important than the benefits obtained at the end of the development road.." (J.Lissner: 1977:20).

Reacting to these new ideas on development, many development institutions, for example, U.N. development agencies, World Bank, O.A.U. through its charter for popular participation and transformation, and coming closer home, the HARAMBEE call, and the well formulated DISTRICT FOCUS for RURAL DEVELOPMENT, point clearly to the need for people's participation. One senses recognition of the need for participation through the policies set out in all programmes and projects formulated through these institutions. If the policies are clear, how participation is to be implemented is not. The implementation challenge from participative approach to development process demands a "way of thinking and acting development in which people, rather than economics and technologies, are the central focus... development in which people are both purpose and the MOST CRITICAL RESOURCE". It is lamentable to realize that most of these approaches seem to ignore the participation of the people as soon as the project/programme "

shopping list" is compiled.

In general, the implementation practice has been that people are needed for local labour. People appear to be a nuisance to development institutions when they demand accountability during project implementation. Excuses are given that they are not technically qualified to understand. To such attitudes the question should be raised as to whether the implementors are qualified enough to make the explanation simple enough for the people to understand.

Cornerstones of Participation

Given the background of participation in development, the following are the basic questions to its assurance.

1. What are the most effective ways to engage the grassroots communities who are mostly concerned with surviving strategies to better their lives?
2. To what extent are central political systems and development organizations able to allow, support and implement that process?

The implication of effective participation process is too dazzling to be taken abroad all at once by development agencies. It needs a systematic build-up of all social institutions towards being responsive to redistribution of scarce economic resources and political power, with deep respect for socio-cultural factors of the society. To be effective it must start, as Paul Freire would say, from what the people are, what they do, want, think, and believe. In other words - opening opportunities from below and responding to their generative themes. Participation cannot be inserted as a missing link into the style of development. The style itself must change both as a result of new forms of participation and as a condition for such participation.

The why of participation is well argued in a lot of the literature. However, the full impact of participation, in what and for whom, plus the how questions are idealistically argued for and apologetic positions are taken as concluded by in the C.C.P.D Dialogue about Participation No.3: 1986.

2. CATALYSTS FOR PARTICIPATIVE PROCESS.

Dialogue

The World Bank has identified dialogue as central in participative development. It states that dialogue will be the centre for "assessing the needs of low income population for any project, goods and services; as decisions on feasibility, active involvement of local population in planning, construction, management and selecting appropriate institutional arrangements are made" (World

Bank Staff Working Paper No: 397 June, 1980:4).

If this is taken seriously, a process of grassroots orientation in project support can be worked out bearing in mind rural poor and gender issues, ethnic and religious consideration. To accelerate this process the following questions have to be responded to:

1. What kind of non-technical training does the community need? e.g. community organization or cross cultural communication.
2. How is a continuous motivation system and maintenance of high moral, morale and task orientation to staff, so that they maintain accountability to the local people and to the agency undertaking the project, built?
3. What kind of two way (vertical and horizontal) communication and reporting procedures, required for effectiveness, can be supported and institutionalised?(Ibid: 22).

When these questions are tackled for specific communities and projects or programmes, thereby showing a commitment to participation, people start participating fully in planning, initiating and managing projects to the extent that the dictum that projects do not belong to the donors but to the beneficiaries start becoming true.

Development of Indigenous Institutions

One way of guaranteeing continuity of the participatory model will be to encourage the growth and development of indigenous institutions to continue the process. In the Kitui context, Mwethya groups and local church groups are critical for this process. However, outside support may be required to give impetus to these and other local institutions to work out a process of attempting to break patterns of poverty and dependence.

Indigenous institutions need a holistic view of poverty, especially rural poverty, if participation will not be the labour contribution advocated by the community development strategists. The groups will need to comprehend and internalize integrated rural poverty as argued by Robert Chambers when he states that the poor communities are forced into a deprivation trap of powerlessness, isolation, poverty, physical weakness and thus vulnerability (Robert Chambers, Putting the Last First: 1983).

One has to face the full implications of this poverty trap if participation and ensuing benefits will mean anything to the target groups. It is within this context that realistic intervention towards participation can be worked out. Two key aspects of an intervention process need to be worked on. One is the "social intervention capacity" which demands an understanding of the social dynamics of the community as the basis of designing

intervention to guarantee the strengthening of the community's capacity to solve their problems. This aspect has to be coupled by the second one of creating "institutional leadership" which guarantees strong leaders with personal commitment to the goals of a holistic strategy to the development process. They have to be able to redirect organizational values, energies and processes towards those goals while maintaining organizational integrity in the face of opposing forces. This is crucial since adoption of a participative strategy leads to opposition by many dominant forces opposed to that style of development process. (D.C. Korten & F.B. Alfonso: 1983).

The "Nuisance" Factor

The participatory process has its own dangers and weaknesses but these are outweighed by its potential for creating understanding and room for directing action. Even in routine projects, which have no political overtones, many find participatory process "a bit of a nuisance." It is true that at times some action has to be taken with minimum participation of the people. This is acceptable as long as it is taken with the understanding that it represents the interest of the majority and no myths of secrecy are created to hide information from the popular base. There may be activities, projects or strategies, which may not be of direct concern of the popular base. As Galjart & Buijs point out, from efficacy and efficiency points of view, it is undesirable, and one would argue counterproductive, that all members participate in all matters at all times. For an organization to function well, there must be delegation of responsibilities to representatives. (Galjart and Buijs: 1982: 14).

Empowerment

Participation has to have an objective. The one argued for in this paper is for popular empowerment. Participation must have support of effective institutions who are sympathetic to their cause, if not working for the same cause, to guarantee long lasting effects. It must be fuelled by active groups of a movement to nourish and keep alive the objective. If this is missing it will be hijacked to serve other interests. It is important to build linkages to maintain plurality and local, national and international visions.

3. DEVELOPMENT EDUCATION PROGRAMME.

The National Context

Having argued about participation and its role in social development, especially in favour of the poor in the community, it may suffice to look at a programme which tried to organize church related development projects around participative leadership.

It is a well known fact that churches and religious organizations

were involved in health, education, relief and social development in Africa in general, and in this case in Kenya in particular. Through these services the churches were acknowledged by the communities as trusted providers of these and other social services for a long time, and at times, they were perceived by local communities as doing a better job at it than the public sector. As social differentiation started taking root within Kenya society, the church had to re-examine its style of serving those in need. It was around 1974 when this need for re-examination of her style of service was mooted. Around the same period, the themes of popular participation, decentralization, and focus of services to the poor was becoming the dominant mode of thinking on social development for the church among others. Her social services ministries had to be expanded to include community organisation and popular empowerment if she were to maintain the position of "being the conscience of the nation" (President Jomo Kenyatta to Bishops Conference 1972).

The Community and Church Context

It should be mentioned here that the outreach services provided by the churches had no religious discrimination. Hence all the villagers were receiving full benefits from them. Within these services, as observed by J. Tindler, it was true they were following "service delivery" model rather than "participatory" model. Now the mood was around for inserting the participatory model into the church's development agenda. The parishes and the outreach groups represented a valuable network for effecting the participatory model to reach the poor effectively.

Such a programme had to bear in mind existing community, church and donor relationships. In affect, it had to have conscientizational content and organizational potential to facilitate social empowerment for the beneficiaries. It had to bear the hallmarks of creating institutional partnerships with the church, the village groups and the donors. The state accepted it as a development model with a christian vision of development.

The conscientization content was an adaptation of Paul Freirean method of adult education. That content had to be relevant to the Kenyan situation. It had to facilitate a process through which the groups make decisions about what they want and how to go about getting it. The challenge posed by the approach was not the one of implementing projects planned from any centre but implementing a process to allow the groups to learn to take control of their lives by learning how to plan and initiate the plans. This was to be achieved by a process of dialogue as a people to people working relationship was encouraged and made the core of the programme.

This strategy required building of a style of operation in all projects which had special ability and commitment to work with, as well as to strengthen local self-help groups. This procedure was

hoped to create pluralism in the groups, their communities and finally make the state apparatus more responsive to popular needs and services.

The organizational aspect had to face the style of participation which paired "bottom up" approach through organized groups and the normal church structures which are "top-down". This was further complicated by "outside in" approach of the missionary societies and other donor agencies. The three approaches had to be confronted by the reality of either empowering the representatives of the groups or to keep the church top-down structures and make them more sensitive to the local needs as articulated by the groups. The local elite decision making mechanisms were still in place but needed systematic erosion not overnight elimination. Within these dynamics, the programme was advocating for a strong commitment to open ended process of decision making. This was strongly contested by community activities which were characterized by historic non-representative decision making mechanisms through local elites, resident religious missionaries, pastors or parish priests. The programme facilitators had to work within these structures as well as working with groups who had controls coming from chiefs, parish councils and a male dominated social setting.

These organizational contradictions had to be faced in a dialogical process. Dialogue was the cornerstone of the programme as it was being inserted into the community. The three key operative groups: The church, the village groups and the donors, were being fused into a witness which Paul Freire defines as "consistency between word and action, ...faith in people.. daring and loving witness that serves as the end of organization where discipline is required but not regimentation" (P.Freire 1970:144).

Being one of the key facilitators of the programme I was fully aware that the process needed freedom to be creative. However at times we needed authority to get things moving and legitimized. A match was necessary: Freedom and Authority. The programme had to accept that responsible organization needed to accept that freedom and authority cannot be isolated. Freedom and authority had therefore to be considered in relationship to each other in all important issues which affected any section of social fabric. To face this combination, both the conscientizational content and the organizational framework had to have in them a thirst for creativity, critical spirit and a trust for a better future. Awakening consciousness was central to critical thinking. This had to be nourished by creativity in taking action planned by the people in their efforts to direct their future. To the various structures, including the men in many of these structures, it involved risking new ways of action and new styles of affecting it. Risk is involved in any of these new approaches. As Paul Freire would put it, it is only in risking that new modes of action and thought can be developed. The creation of the spirit to allow new modes of doing things and accepting the risk of trusting people to

take their own action was the core and essence of the process, content and organizational framework of the programme.

A look of at the programme in operation may clarify some of the points above.

Getting Development Education Programme Working

Questions were being asked as on how to get Development Education going. What is Development Education? Why focus on it in this stage of the development process in Kenya?

Answering these questions was part of the process of development education programming. Dialogue was central to this process. The answers had to be owned collectively by the communities and their leaders. With the network of church services already in place, development education would start. The programme was put in place as both a process and a goal of development activities.

The programme started in 1977 with scattered workshops on development and leadership training but eventually started realizing itself in organized groups at the village level. By 1981, it had started being a movement composed of women groups, youth councils and all various village development groups who would utilize church development facilities. In the same year, during an evaluation workshop, where most of the key leader were represented, the cooperate vision of the programme was stated as "working towards a society based on human values which are found in authentic gospel values, a society which is just and self-reliant, where basic needs are met in mutual care and concern. It is a society where there is just sharing of resources, where men and women share equally and participate actively in decision making. (Christian Development Education Service Team: Report No.6, 1983)

The impact and the implication of this vision, when seen from the angle of the church hierarchy, and, the Kenyan rural societies, who are male dominated, is not only challenging but radically inclined. It is more so when it comes from rural, mainly male, leaders who have not gone to higher institutions of learning. However, these leaders, faithful to their communities, themselves, their church and to their state, saw this vision as central in their work,

Key aspects of translating this vision into operation included:

1. Accepting that development process is part of an ongoing social transformation and has to begin with awareness raising, which leads to action and is followed by reflection as a path to break the "culture of silence" (Paul Freire:1970).

2. The sequence above takes place in teams, where group and human relations skills for life in group work, plus effectiveness of the action, is central to the formation. Paul Freire's method of adult

education and liberation theology are central to the training.

3. Social analysis which focuses on action, is systematically introduced in very early stage and in simple terms. This equips groups with simple tools for judging the relevance of the planned action for it was realized that as soon as people start code discussion, action plans are imminent. People have to be ready to confront and decide on the action plans. The dialogic process teaches organizational models used to strategize as communities confront economic, political and cultural realities, which at times are affirming the root cause of their current situation.

The unique aspect of the development education programme approach is the use of leadership skills in teams as part and parcel of psychosocial method of adult education. This is particularly so in codediscussion. Since the code discussion is done in groups, each person is encouraged to participate actively. Through this process, each individual gains the courage to start facing the implication of the discussion the group is involved in.

The action planned is geared to move people in the direction of service to themselves and to promotion of structures for justice and participation at least at their village level.

Results of Training and Group Process in the Village.

To guarantee effectiveness, training is done with teams from active groups or from specific project benefitting village communities directly. These teams need to be linked to a development support structure which would help to create nourishment and coordination of their action. Whatever the nature of the group activities, once the group's teams got involved in the training, development education had to be included as a key component of their plans. The national or regional training had to be done with national trainers plus experienced grassroots facilitators to balance reflection and action.

All issues are analyzed through a three dimensional approach. Action is planned in tune with the dominant force which is catalytic for better living conditions at the village level. The three dimensions are:

Cultural: which looks at the belief and value system in the community,

Political: which looks at the decision making and organizational aspect of the community, and

Economic; which looks at the production and reproduction aspect of the community.

These would be the key tenets of any programme designed to improve the lot of the people. (A. Hope & S. Timmel 1984).

As various groups/communities go through this analysis process, many and varied concrete action proposals, related to small scale

socio-economic projects or new models of getting organized are articulated. At the same time, the church becomes more politicized. Most of the pressure comes from groups and their leaders working at village level.

These groups are actively involved in organizing their community independent of church structures. Groups have required contact with church hierarchy for necessary protection from powerful forces in the society, who are often opposed to their style of social action. In a way, the activities of these village groups are following a style of political participation which accepts the reciprocal limitation of their action and would, more than likely, follow the rules of the powers that be. Groups tend to strategize to move the powerful towards serving those in dire need. In the process, groups move the political operators to sensitiveness of rural community poverty. This is not always easy. Groups often get hijacked into issues which do not serve their interests and needs.

The groups, who have leaders under training all the way to national level are:

- Women groups
- Literacy groups
- Food production/land use groups
- Primary health care and community health care groups
- Basic Christian community groups
- Village based self-help groups
- Parish leaders as an organized group
- Religious education and awareness programme as a group

Coordination

It is through these assorted groups that regional consultations are organized to ensure coordination and support. At the community level, groups keep each other challenged. As projects are identified and implementation starts, it becomes evident that coordination is central to focus on the transforming actions. Ongoing formation is important to ensure focus on long term effect of the community.

Most of the village groups range from 12 members to 45 members. At times they start a project but it eventually is turned into a village undertaking. One diocese would have an assorted mixture of between 150- 400 groups. The challenge for organization is immense but most of the activities are carried out by the groups irrespective of the co-ordinating structures. The process of group formation is slow but bears fruits. Through group formation villagers get the discipline of systematic examination of issues and focus on the system of implementation to ensure that relevant issues get acted on.

The Catholic Church was one of the institutions upon which the education programme was based. It bore 80% of the projects affected

by this style of development education. There are 18 diocese in the country, each has a full time Development Team. Each team aspires to reach 320 village groups. The immediate beneficiaries, for lack of a better word, would be in the region of a quarter (1/4) million families. The extended outreach of these families is enormous within the population of 21 million Kenyans.

At the group level, themes are identified, then through coordination of various groups in the diocese, themes are turned into codes which facilitate discussion. The discussion of these codes is carried out in group meeting or diocesan or parish workshops. These meetings combine the analysis of the codes by taking into account the local knowledge of villagers and the technical knowledge of the specialists aspiring to serve the village through the identified socio-economic undertakings. The following are the five steps used to analyze the chosen theme or code:

1. Simple description of the situation.
2. On the surface analysis of the coded situation - why are people doing what they are doing?
3. Movement to real life situation. Does this happen in our situation?
4. Deeper analysis of the situation. Why and what are the related problems. The root causes of the problem which can be either from the village or the wider community.
5. Action plan. A look at the resources, alliances which will facilitate effective action. What is relevant and effective? (A. Hope & S. Timmel : 1984).

Through these simple discussions in the workshops, the ultimate aim is to create capacity for relevant social intervention and capable leadership in indigenous institutions.

4. ENTRY POINTS FOR BUILDING INDIGENOUS INSTITUTIONS

The Global Contexts

This process requires sensitivity from the donor community level in the developed world to those agencies having projects in the Third world. Checks are required for the intermediary agencies to guarantee professionalism in accountability. These agencies have to develop faith in people's needs and work, in dialogue with the communities, towards responding to those identified needs. Several factors have to be borne in mind in the developed countries as well as in the Third World. In Lissner's words " development agencies must do their technical homework competently and know their trade well because the days of well meaning amateurism are gone.. hard choices have to be made, opportunity costs assessed and compromises reached.." (J. Lissner: 1977: 270).

The challenge for both partners is to nurture organizational

potential in their institutions. Both donors and communities face the challenge of whether they can see things differently from the public sector and have the courage to voice them differently. This will require purpose of action and consistency in that action. In the case of the church institutions and related agencies, the move towards participation represents a challenge and even a threat to their lifestyles and inherited institutions. Many individuals are willing to take the risk but silence on how to move forward is deafening.

The path is engagement in responding actively to popular demand identified through conscientization process. Immersion in it will lead to active involvement in social economic projects/programmes with a thrust for justice where participation surges to challenge unjust structures. Most of these actions demand pluralism in institutions serving them, including church structures. Action must be organized to enhance institutional capacity which at the same time face pragmatic arrangement in the mode of operation. The mode of operation must have a lasting effect on the donor agency, local development agency or church and ultimately the village community. In short the structures serving a community which is working towards self determination must reflect that fact itself.

This operations mode must strike a balance between the legitimate interest of the donor community and of the beneficiary community with the understanding that the development of people is a continuous process and an involving one. Accountability in projects, funds, personnel must be reflected in all undertaking of any agency aspiring to enhance indigenous institutional growth. At the end of the day, self-help must be evident otherwise, paternalism and dependency which are perennial instruments of domination become strengthened.

A development agency which creates dependency between itself and the community it aspires to serve, has not only failed in building indigenous institutions, but, has failed fundamentally. To avoid creating that situation, a system of creative support is required. A possibly workable system has been called by K. Verhagen self-help promotion and defined as a system of assisting in finding ways and means of pooling resources, identifying viable, gainful and meaningful economic activities and developing systems of accountable leadership and management of funds. (K. Verhagen: 1987: 21).

Since development agencies are service agencies to groups, through government or church structures, who aspire to carry out their own self-help activities, one must take account of the fact that these activities suffer from the fact that they are often understaffed and short of trained manpower. Despite this problem, the goal of self-help promotion, needs to be pursued with all perseverance. A dilemma which has to be faced is stated by K. Verhagen as that the "most critical issue in self-help promotion is that the poor, while

they remain poor, cannot afford to pay in full their own promotion". Hence development agencies supporting this ideal must continue receiving finance from outside the communities. (Ibid: 30). He suggests eight instruments for systematic promotion of self-help, but I will mention five. These are: identification of target population and target group, participatory research and planning, education and mutual training, resource mobilisation and resource provision, monitoring and on-going self-evaluation.

Careful combination of these instruments brings about fruitful results for self-help promotion. These instruments have interrelationships which must always be reflected in implementation:

Identification of target population and target group.

If we follow the logic of self-help, it is useful to call this a mutual identification of development actors and their promoters. This process allows for group formation and mutual trust to develop within groups and between individual members within the group. As this is facilitated to happen, one should take special note of divisive tactics employed by parties who may want to keep the poor as they are.

Participatory research and planning.

It is important to nurture the potential in people to identify problems; diagnose them, by using the problem solving approach; to plan how to overcome constraints and thereby improve people's economic well being.

Education and mutual training.

This must be a commitment to synthesis of knowledge from experts with the experiential knowledge from the poor which produces relevant knowledge for the local situation. This is a commitment to two-way learning process called knowledge sharing and knowledge generation.

Resource mobilisation and resource provision.

Commitment to the fact that it is through group formation and action that the poor achieve economies of scale, which are beyond each individual, is mandatory. Proper tuning should be done so that resource provision does not strengthen the vicious circle of self-perpetuating poverty which is often caused by outside assistance which erodes self-help potential.

Monitoring and on-going self-evaluation.

Dialogue in action, as stated in Porte and Clarke, is central. This is dialogue over time and not a static picture at one point in

time. (Porte and Clarke: 1985). This is achieved through a long term view of strengthening operational plans and reaching specific short term objectives which contribute towards the long term objectives. Action on this is required at the three levels:

Micro-level - i.e. grassroots groups' level

Facilitators level - i.e. staff responsible for animation and routine enabling of group activities.

Development agency structure - i.e. coordinating structure of the programme/projects.

ALL THIS DEMANDS THAT DEVELOPMENT AGENCIES GO THROUGH TRUST BUILDING WITH THE COMMUNITIES, A NEGOTIATING PHASE, PROJECT ACTION PHASE, EVALUATION PHASE WITH CLEAR REFERENCE TO THE NEGOTIATION. THIS SHOULD BE DONE WITH FIRMNESS AND COMMITMENT TO SERVING THOSE IN NEED AND NOT PLEASING POWER HUNGRY LEADERS WHO COULD BE EASY DESTRUCTORS OF AGREED PLANS.

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PARTICIPATIVE RESOURCE PLANNING

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KIDP

1. INTRODUCTION

Mr. Mulyungi's paper covers social policy and participation. My topic is participative resource planning. KIDP is about resource management, and the approach we want to follow is one where people's participation plays a central role. That participation is understood to be not merely in the field of implementation, but in planning as well. In other words, we are looking for ways to involve the supposed beneficiaries of the programme in the decision-making process. The beneficiaries, by the way, are the rural households of Kitui district, especially the poorer groups. Thus, whereas Mr. Mulyungi has spoken about fundamental issues regarding people's participation, this paper will be more on the particular approach which KIDP intends to follow and the practical problems I think we have to face. I must emphasize at this point that this approach is only a tentative one at this moment. One reason for presenting it here is the hope that this forum may comment on it.

2. PROBLEMS IN PARTICIPATION

It has often been said, and again in Mr. Mulyungi paper, that participation cannot be just the contribution of labour. Yet, in spite of all our noble intentions, it is still common practice that government officers or foreign experts design a project which is thought to be of benefit to a community, and then the members of that community are asked to provide free labour. In this way the community will become more self-reliant and get the feeling that the project really belongs to them. It is also believed that participation reduces the cost of the projects. This is often not true, but I shall not elaborate the point - after all, in KIDP we are committed to participation, so there is no reason to discuss its disadvantages.

Rural communities are often quite willing to contribute labour to a project; and in those cases where they are not, a little pressure applied by the chief will usually do the trick. Many rural development programmes have had positive experiences with this, including the former ASAL programme in Kitui, the Mutomo Soil and Water Conservation Programme, and the Development Programme of the Diocese of Kitui.

Yet there is also a snag; there is a universal lack of maintenance of the projects once they have been completed. After having shown such eagerness to have the project constructed, the community is apparently unable to muster the resources to operate it effectively. This is certainly the case in the Mutomo Soil and

Water Conservation Programme, where a quite successful construction phase is followed by a dismal performance on the score of maintenance. Either the communities are not willing to maintain the water points (because they regard them as government or Danida property) or they are unable to (because they lack the organization for sustained management). I think both of these reasons apply to some extent. Let me explain. By the way, this is just my personal interpretation of what I observe; if you think I am wrong, I stand to be corrected during the discussion afterwards.

3. SURVIVAL STRATEGIES

First, the supposed unwillingness. Outsiders may be very knowledgeable about how to conserve the environment, but it may be doubted whether they also understand the problems as seen by the villagers themselves. It is realistic to suppose that rural people have their own agenda which does not coincide with that of a government or a foreign donor. Not only do they have their own perception of problems, they also have their own strategies for dealing with them.

If an outside agent, represented by you or me, for example, turns up with a project proposal, this proposal will be evaluated by the people according to how it can foster those strategies. If they think they can get something out of it that they can use for their own needs, they will probably accept the proposal. We may then think that we have now persuaded the villagers to adopt our strategy, but that is not so. They may construct the terraces because we have promised to give them wheelbarrows and ploughs if they do, not because they feel they need the terraces. After having constructed these terraces, they may allow them to fall into disrepair - indeed, this may even be advantageous, because some day they can be reconstructed and a new plough will be given. In other areas the local people themselves want to have terrace; they will construct them without needing any incentives, and maintain them too. Are those people smarter than the others? I think not; it is more likely that their ecological and economic situation is such that they derive more benefit from soil conservation.

We must understand also that it is unlikely for villagers to simply accept someone else's ideas on how to improve their lives; after all, they have survived in their way for a long time, but often they only just manage. What if this novel strategy turns out to be wrong? They cannot afford to take a big risk in trying something new. Plenty of projects in the past have turned out to be ill-conceived, so there is good reason to mistrust the expertise of outsiders.

How can we improve the sustainability of our undertakings? I think we need to spend a little more time in achieving a dialogue with the community, in understanding their problems as they see them. This does not mean we simply ask them what they would like us to

do, and then do just that. We also have our priorities, and they do not have to coincide with those of the community. Also, respecting the expertise of farmers does not mean your own expertise is of no value. What we should aim at is, firstly, to complement our knowledge with theirs and vice versa; and secondly, to arrive at a compromise between our goals and local priorities. We may then be able to formulate a joint strategy, in which the local people do not just cooperate because they expect to obtain some goodies.

So much for the unwillingness, now to the question of inability. This is very evident in water projects. Taps are used carelessly, the immediate environment of a well is not kept clean, cattle are allowed to drink from drinking water points, and when a pump is broken there is no one to repair it. This cannot possibly be a matter of unwillingness: after all, the availability of water is known to be a high priority in most villages, and they have made an effort to get the water point built. Nor are they physically unable to do the things expected of them: great efforts have been made to design projects in such a way that local people are capable of operating and maintaining them. The trouble lies in the organizational setup, and this we must investigate.

4. WHO ARE THE PARTICIPANTS?

The vehicle that has mostly been chosen for participation is the groups which have been formed under the auspices of the Ministry of Culture and Social Services (self-help groups and women's groups). The existence of these groups is very much in line with the philosophy of *harambee* and is considered to be based on traditional forms of mutual assistance. In Kitui, such traditional cooperation is known as *mwethya*, and often the modern groups are also referred to as *mwethya* groups. They have functioned quite well as work parties in a number of programmes, as I already stated. Their record in looking after projects, however, is not very impressive as far as I have been able to ascertain.

This can be easily understood when we look at the traditional role of the *mwethya* group: it used to be organized only for a particular, short-term goal: to build a house for someone, to clear a plot of land, and so on. It was, however, more of a short term work-party than a permanent organization. That does not mean that the present-day groups have no potential to become such organizations - in a way, they already are; but it is good to bear in mind that there is no basis for such groups in local tradition, a fact obscured by the use of the term *mwethya*. Such permanence as they have is largely based on prodding from the outside: the need to register, the promotion of group shambas (for which any economic justification is hard to find), and the expectation that tools or other inputs may be provided through registered groups. Again, much of group activities are a response to outside intervention in the hope that something positive will come out of it for the villagers' own survival strategies.

How can we improve the organizational capacity at local level? I think there is no easy answer. What we can do is to recognize the limits of the groups we work with. Also, it would be worthwhile to pay more attention to traditional leadership structures that do exist at the local level. In Kitui, these are centred as far as I understand on the local neighbourhood known as *utui*, which corresponds with the term village used for denominating the territorial units below the sublocation. Thus, there is a need to involve village elders as well as groups in our planning.

5. THE KIDP APPROACH AND HOW IT RELATES TO PARTICIPATION

If we succeed in getting a realistic picture of people's needs and the strategies they have evolved for satisfying them, it would be wrong to expect that KIDP will go about providing the assistance demanded by communities. KIDP is not aimed at satisfying just any needs of the target group, but at contributing to the solution of a particular set of problems which are perceived to exist in the district. These problems are: low income of farmers (both in terms of cash and in terms of low food security), and a depleted resource base. Other papers cover these issues and how a systematic approach to environmental management may not only arrest the rate of land degradation, but at the same time increase production of agriculture, livestock and forestry significantly - not to mention the improved water supply.

Participation is important to this catchment approach in several ways. First and foremost, most of the activities can only be carried out by the farmers themselves; KIDP's target is not so much the completion of highly visible projects as rock catchments (although these will also be undertaken) as changes in land-use practises which alone can help to achieve its ultimate objectives. Therefore, mobilizing the community participation is even more essential than in the past Mutomo Soil and Water Conservation Programme.

Secondly, it is only a sustained effort on the part of the population that could yield the desired effect. It will not be good enough if people are coaxed into terracing, tree-planting or fencing of rangeland. Soil conservation structures have to be maintained and followed up by biological methods of soil conservation and yield increase; tree seedlings have to be cared for; rehabilitated rangeland must eventually be used for grazing again but in a sustainable way; and water catchments have to be protected permanently. Such efforts can be made only if the people see the benefit for themselves, and if they are sufficiently organized to sustain the activities. In other words, if these activities are part of their own strategies- or perhaps, if the programme has been able to adapt to those strategies.

Thirdly, if we work on the basis of small areas, this means automatically that the planning of activities takes place with the

requirements of that area in mind. This naturally lends itself to participatory planning, as the local people can easily be consulted. It also means that a situation can arise whereby it is no longer the government officers who try to mobilize people for participating in their (the officers') campaigns, but where the local people approach the departments to assist them in what they (the people) have decided to do.

In a sectoral approach, on the other hand, it is the departments that make plans for their district-wide operations; there it is very difficult to take local wishes into account. Thus, the catchment approach and participative planning go very well together - it could even be argued that the former is impossible without the latter.

6. HOW THE KIDP APPROACH IS CARRIED OUT IN PRACTICE

The starting-point of the catchment approach is the outstanding requests for water-points as approved by the District Development Committee. The first step for KIDP must be to assess what community we are dealing with, and what was the basis for the request: does the water committee that supposedly made the request actually exist? If so, whom does it represent? What is the area it covers? Are prospective users likely to come from within that area only or also from outside? What villages exist within the area, and what leadership do they have? These questions must be answered through a preliminary visit by a KIDP officer. At the same time, local leaders are given some initial information on KIDP and on steps that will follow.

The report of this preliminary study will permit a decision as to what area will actually be considered as the catchment to be covered by KIDP. Once that decision is made, a land evaluation study can be fielded which will identify land units for the purpose of resource management as well as alternatives for water development.

The next step is a social study of the area: to assess present land-use practises; to compare the land units identified by the technicians with local perceptions; to discuss problems experienced in agriculture and animal husbandry; and to collect some basic social data. The important point of these studies is however, that they are aimed not primarily at the collection of data but at initiating a dialogue with the community on what can be done in environmental management. These studies will be carried out jointly by KIDP and the implementing departments, in teams of about seven persons. Field officers at local level will be trained to undertake them, using a methodology called rapid rural appraisal.

The report of such a study will contain proposals for activities to be undertaken by the line departments and by the community itself. These proposals then have to be agreed on by all concerned, after

which implementation can begin. During implementation, a mechanism must exist whereby a representative from the community can report to KIDP on any obstacles encountered. KIDP itself will evaluate catchment activities, in which the community will also be asked to give its assessment.

7. CONCLUSION

The approach described above may be difficult to implement. It is not certain that it will work - although there are examples of it having worked in other areas. It requires also a spirit among government workers that differs from present attitudes. Rather than telling people what to do, we may arrive at a situation where they tell us what to do. I would like to hear your comments on this and any other matters raised in the paper.

PART THREE: THE CATCHMENT APPROACH

THE CATCHMENT APPROACH FOR COLLECTIVE SELF RELIANCE

JAAP VAN DER ZEE
KIDP

INTRODUCTION

An idealised logical framework for the development of Kitui District can read as follows:

Long term objectives (20-25 years)

1. Food security has become an established fact. Furthermore, the District is a net exporter of food and livestock.
2. Agro- and livestock industry, as well as a related services sector, offer employment to the landless and those unable to derive an income from farming alone.
3. Kitui District has become a full participant in the affairs of the national economy, which includes decision making in aspects of rural policy and protecting the interests of the district and its people.
4. Dependence on income earned outside the District has become an item of local history.
5. Land adjudication has essentially been completed.
6. The population knows the limits of the physical resources base and is well trained on how to use the environment to its best advantage and how to cope with the contingencies of recurrent droughts.

Short term objectives (10-15 years)

1. One third of necessary land conservation has been completed and another third is in the process of being carried out. The effects of land conservation on increased production are clearly visible and measurable.
2. Definition of land use policies and land use limitations, based on sound ecological principles, have been completed, accepted and adopted by the population.
3. Farmer groups routinely carry out their own planning and implementation of plans with assistance from the government.
4. A system of organised production and marketing managed by farmers principally.

5. Land adjudication and collective ownership of key waterpoints is well in progress.

6. Local workshops produce and repair tools and farming implements at tax free prices. The system of purchasing these in Nairobi and distributing them through the government has been abandoned.

Near term objectives (5 years)

Farm production, the potential of the resources base in general, and farm income have increased significantly through:

1. Organised production and marketing of cash crops and livestock, guaranteeing fair prices to producers, and utilising profits to improve community interests and beneficial public works, including infrastructure.

2. Systematic rehabilitation and improvement of the resources base, with emphasis on water availability, soil conservation, and biomass production.

3. Rehabilitation and improvement of the resource base closely follows the criteria of detailed land use planning and farm planning, jointly worked out between the community and government staff.

4. Government staff and key community members are adequately trained to identify resource improvement strategies and to plan.

5. Implementation strategies and schedules for land adjudication are carried out.

6. Community groups and committees actively pursue organisation and implementation of development activities agreed upon by all.

Outputs

1. Training of government staff and the community.

2. Training of school going children (School shambas).

3. Production of manuals (technical, participation, etc.).

4. Land information system (land evaluation, etc.)

5. Market information and marketing channels.

6. Crop-, pasture-, forestry-, agroforestry trial results or indicative results.

7. Viable procedures for coordination and organisation of government departments in development activities.

8. Land use plans and farm plans produced by communities in conjunction with government.

Inputs

1. Political will and institutional arrangement.

2. Technical know how.
3. Preliminary consultations with the community.
4. Participative baseline survey.
5. Plan of operations and workplan(s).
6. Technical assistance.
7. Operational funds.
8. Equipment and materials.
9. Buildings and transport.

The above presented logical framework contains three basic elements. These are people, economy and resources. More succinctly:
 $\text{People} + \text{Resources} = \text{Economy}$

Increasing people's knowledge, skills, by making information on effectiveness of communication, rights, independence, awareness, and consciousness about themselves, their needs, each other, their environment, their heritage, etc. available to them, options for expand the economy become available to local communities. Similarly, increasing biomass production (crops, pasture, trees) and water availability creates new and alternative options for communities.

It is important to note that the sum of these elements and their attributes, as well as their potential synergy, is contained in a system which is in equilibrium. Injudicious change of one single attribute may lead to dysfunction or a downturn in performance of the system, and eventually to poverty. Poverty both causes and results from environmental problems, which are defined as a system out of equilibrium. Conversely, attempts to improve conditions cannot be limited to any one attribute for this creates instability. Adjustments have to be made to each and every one.

The present situation of Kitui is the result of past (colonial) policies and explosive population growth. Notions that improvement can be limited to soil conservation, construction of waterpoints, and community organisation alone are fallacious. A host of simultaneous activities and policies must be carried out to achieve envisaged objectives.

Resources, the corresponding ecology, and by extension the environment, within the confines of climate are all largely shaped - directly and indirectly - by the hydrologic cycle and the way in which it is managed, and vice versa. Manipulation of the hydrologic cycle serves different purposes in different environments. In the ASAL conditions of Kitui, there is only one purpose. This is to slow down the processes of runoff, evaporation, and evapotranspiration in such a manner that scarce rainfall, ranging from 350mm to 1400mm a year, can be used for production, preferably using the available water more than once. As the margins between production or lack of it under ASAL conditions are extremely small, careful intervention in the physical part of the system and its hydrologic cycle is a basic requirement. In other words the

objective of all development is to intervene in the physical system, particularly the hydrologic cycle to increase production. Of course such intervention is by people and thus it assures participation.

Hydrological cycles take place within geographical boundaries. These are the catchments (English), watersheds (American), or simply drainage basins. The order (or Strahler order) in the hierarchy of the drainage network determines the size of the catchment in the particular basin. A catchment bordering an inselberg in Kitui District or the crest of a hill may be of the 1st (8 ha), 2nd (20 ha), or 3rd order (80 ha). A catchment the size of the Tana River drainage system, in which all the (sub)catchments of Kitui drain, is somewhere of the 14th order, covering more than 10 million ha.

The system, including the hydrological cycle, contained within a catchment, determines the amount of biomass produced. Biomass is needed for people and their animals, as well as to maintain soil fertility. In Kitui approximately 40% of biomass production must be returned to the land to sustain production. Striking the right balance (or producing the required amounts) between the needs of human populations, animals, and the land for biomass is called land conservation. Soil conservation is a component of land conservation. Land conservation and the catchment approach are synonymous. In the Kitui scenario land conservation also means raising the potential of the land beyond its original state before settlement by the Boran and later the Akamba, to cope with the needs of a manifold increases in population.

Catchments that are of importance to the development of Kitui District are seldom larger than 500-800 ha. Perhaps this seems little, but they are numerous. They are mostly situated on sloping land near hills or inselbergs, coinciding with soils of moderate fertility (as opposed to soils of low fertility on the plains), higher rainfall (orographic effect), and the presence of portable water from springs, or groundwater at shallow depths, or rivers. Naturally these areas are also the most densely settled. Their development indirectly benefits the lower lying areas because of better water management and their function as fallback areas during dry spells. The logical framework is primarily meant for the communities living here.

GENERAL CONDITIONS FOR A VIABLE APPROACH

1. The link with income generation

In Kitui District, the link between income generation and resource improvement was clearly established during the ALDEV days. Options to generate income principally from crops are, however, limited. Extensive research by the UNGA Group (pers. comm.) since 1985 in agro-ecological zones IV and V has shown that of all the oil crop

trials that were conducted only Sesame (sim sim) gives an adequate return to the farmer and an acceptable oil content for industrial processing, further taking into account the prevailing ASAL conditions of small-holdings, low technology, and low input. Supplementary income can possibly be derived from Castor Oil, Cashew Nut, and Aloe (Aloe vera).

Maize must be regarded as a subsistence crop only. In AEZ IV a regular harvest requires at least terracing. In AEZ V terracing must be combined with water harvesting (ratio land to crop is 3:1), and in both zones regular ploughing and organic farming must be introduced to minimise the risk of crop failure.

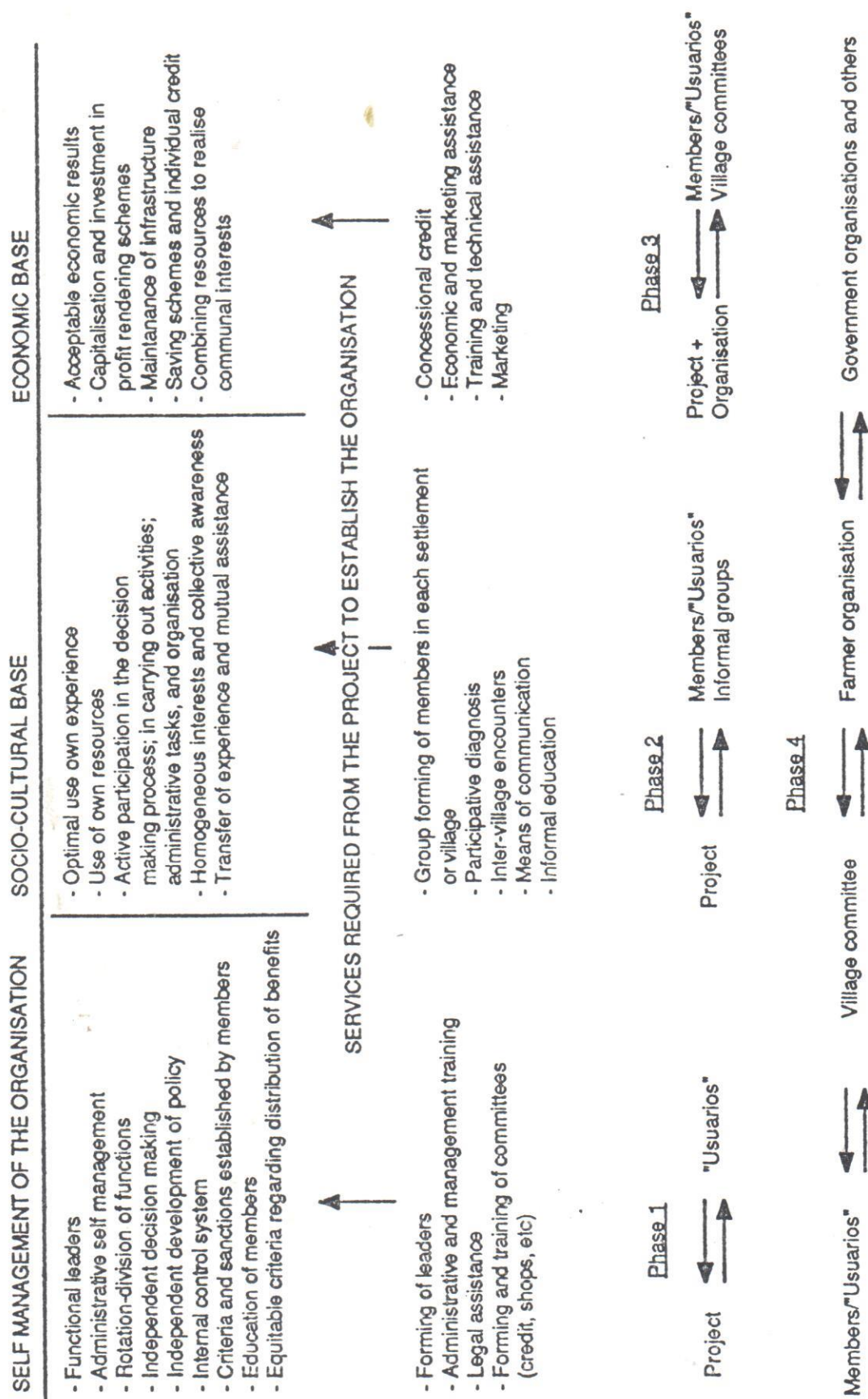
Millet (in AEZ V in particular) during the previous seasons has proven a significant income earner. Degazettement of this crop means that its price will no longer be in step with inflation signifying that it will gradually drop, unless a major new utilisation process is build up nationally. Pigeon Pea and Green Gram, on the other hand, have profited from this policy, as there is a ready export market to the Indian subcontinent and Middle East.

The basic message for ASAL regarding farm income outside the livestock sector is to diversify as much as conditions permit. This includes growing trees for timber, fruits, fodder, construction, and energy, and to combine these uses with land conservation practises, including water conservation, soil fertility enhancement, and erosion prevention measures.

Traditionally mixed farming denotes security against drought and cash income. Mixed farming, although not indispensable for crop production, is an important component so as to increase the fertility of the land. Farmers should however, change from using manure directly to preparing compost, which is more effective and covers a larger area.

Considering that farmers need to receive a fair price for their produce, organised production and organised marketing by groups at the catchment level is a necessity. It must be the intention from the outset that eventually these groups form organisations. As shown in Figure 1 the required steps and elements leading to this automatically generate community participation. With further reference to Figure 1 the author of this paper personally witnessed the rise of a farmer organisation from Phase 1 to Phase 4 over a period spanning 7 years. The said organisation represents 30,000 Afro-American, largely illiterate farming families, who are also an ethnic minority, in Colombia - South America. Presently they are a political force to be reckoned with at the provincial level.

FIGURE 1: KEY ELEMENTS TOWARDS RURAL ORGANISATION



Note: The term "Usuario" signifies a non-member making active use of services offered

2. The livestock factor

Livestock, historically and presently, has been the principal source of income from the land. Given the potential of Kitui District, raising livestock will continue to play a dominant role provided large scale land conservation is carried out. However, if present trends of ecological degradation continue, both livestock and people face a bleak future. People during the past centuries have shown an impressive tenacity to hold on to their animals, especially their breeding stock. Livestock provides a buffer against drought, cash at a moment's notice, and is highly profitable in years of adequate rainfall and a low incidence of endemic diseases. The present crossroads at which Kitui finds itself is characterised by a "nothing or all" situation. Land conservation must lead the way to a viable future.

Livestock development strategies designed by government and donors traditionally concentrated on creating grazing blocs to replace the pastoral system. The technical options came from the range management traditions of North America with their emphasis on rotation. The scarcity of land and massive social changes during the past 40 years, have led to a complex farming system in which this traditional approach to livestock production does not fit. What appears good for the Maasai and other primarily livestock producers does not necessarily apply to Kitui Akamba for crops are significant in their farming system.

The lack of freely available land and the necessity of land ownership as a condition for viable resource conservation and improvement dictate that raising and keeping livestock at the farm level must take priority rather than to continue with past practises. If in this sense the needs of the population can be met, and if this is further implemented in conjunction with animal health care and improvements on the present marketing system, any kind of development programme will have a built in foundation for success and a handle to exercise control over matters concerning resource management.

Obviously the limiting factors for such an approach are water and fodder. In practice this means conserving soil and water run off. Careful farm planning is therefore a pre-requisite. Measures to be taken include terracing of land for crops, fodder grass and fodder trees to enhance the production of each, as well as developing waterpoints at every opportunity. (Pruned) fodder trees also serve to establish a micro-climate. Mutiso and Mutiso (1991) describe a case study of this nature in Machakos District in AEZ V on a farm raising Friesians, a phenomenon that defies conventional logic. There are nevertheless other farms in the same district with similar results which demonstrate a healthy return on capitalising the AEZ V land.

3. Land adjudication

The colonial land policies and the socio-demographic upheavals during this century have generated a breakdown of the traditional land tenure system. This, in turn, has caused the present insecurity regarding land ownership which lies at the root of ecological degradation. Rather than to point the finger at overgrazing, one of the major solutions to continued ecological degradation concerns land adjudication.

Land adjudication in ASAL over the past 30 years has been painfully slow, lagging consistently and significantly behind the Kenya Highlands where, for socio-political reasons, the issue has been considered of higher priority. However, land adjudication must be recognised as a key element in the ecologic and economic survival of ASAL.

Land adjudication was incorporated in the package of KIDP activities in May 1990, but has recently been abandoned, as it was regarded more as a "sweetener" for farmers implementing conservation measures than an essential component of land development.

ASAL development is concerned with the management of a system consisting of catchments and including land conservation, land adjudication, people and their characteristics, income generation, and others. Instead of approaching land adjudication as a sectoral activity it must be incorporated as part and parcel of the catchment approach. Moreover, adjudication has a key role in achieving collective self reliance. In this sense organised groups, with a little help can undertake the first steps towards adjudication of their land themselves, which also is indirectly conducive to joint land use planning. Furthermore, under normal circumstances, government grants priority treatment to people helping themselves.

4. A district planning base

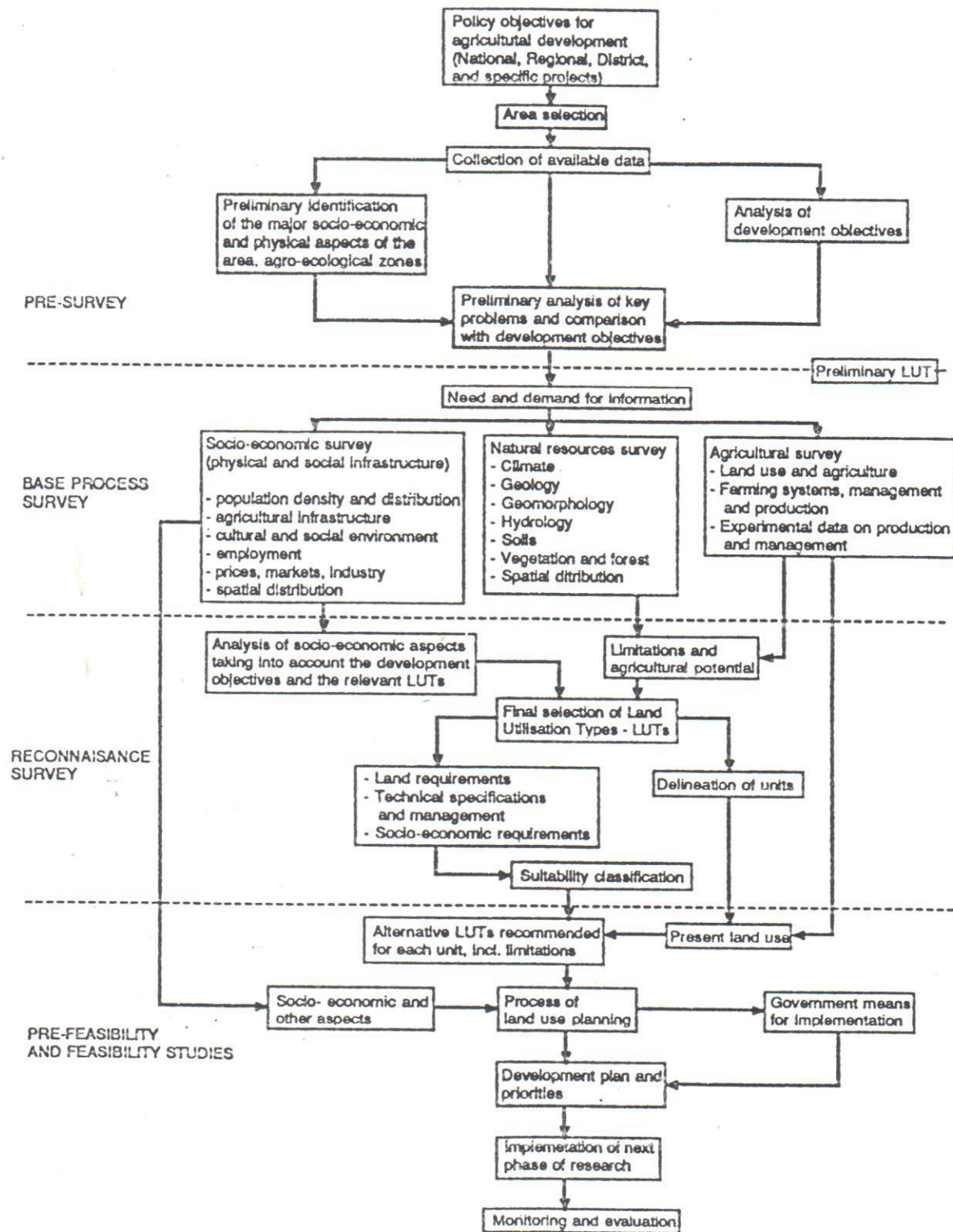
The absence of a planning base has allowed the rich in the district to benefit disproportionately as from early this century until today. It has allowed political interest to prevail at the expense of considerations of equal weight. More important, it has severely inhibited a structural approach to development. Successive donors repeatedly spend small fortunes on collecting pre-requisite information for their intended activities.

The district at this moment lacks a basis for rational development decision making. The main component of the desired planning base is a land information system to provide answers as to the potential of the district and the available development options concerning the different land uses and sectors. It also needs to provide a framework for considering alternative policies, and in each case to

ensure rational ecologic management. Obviously the facility of priority ranking in the decision making process for given options is an indispensable tool.

Within the land information system, the first and paramount step deals with land evaluation. Land evaluation basically determines the potential, the limitations, and the management norms of land and the available land use options (i.e. the different suitabilities). Land evaluation is preceded by human and natural resources surveys, and followed by land use planning. Land evaluation is also indirectly concerned with matters such as land adjudication and land reform, valuation of land (i.e. land taxation), controlled settlement, as well as serving as a tool for land administration by central and local government.

FIGURE 2: FLOWCHART OF ACTIVITIES
(INTEGRATION OF SOCIO-ECONOMIC AND PHYSICAL ASPECTS)



Land evaluation of Kitui District will take 17 locally trained persons approximately 5 years to complete at a cost of some 33 million Ksh. A summary outline of the undertaking is provided in the KIDP Workplan 1990/91. Figure 2 shows the parameters forming part of the study. Although the cost may seem high and the required time drawn out, once completed the district will possess the means to coordinate development activities in a structural, effective, and economic manner. As exemplified by Figure 2, it is further worth noting that present development activities, including those financed by donors, are based on knowledge that seldom goes beyond the pre-survey stage. From the same figure, it can be shown that at the base process level, preceding the early planning stage, a significant amount of information (e.g. USAID) is already available. This, however, needs to be put in a framework, and supplemented by other surveys to be useful.

5. Institutional arrangement

Government implementation of development is by definition slow, expensive, and inflexible. Government at the district level in Kitui is further hampered by a lack of operational funds, modern day facilities, and staff untrained to meet the present development needs. The private sector cannot possibly fill these gaps without outside assistance. NGO's faced with these constraints inevitably and inexorably turn into parallel fiefs in (largely unsuccessful) attempts to achieve their ends. Donors (USAID, DANIDA) work by some arcane rules preventing any significant output that does not justify the cost. Self imposed restrictions consequently make them pack up and leave at the earliest opportunity, whilst being blamed for their ineptitude in the bargain.

Without radical changes to the present structure and with a view on breaking the aforementioned impasse, consideration should be given to the following recommendations:

- District headquarters of the relevant ministries and ministerial departments should be trimmed down. Significantly reduced numbers of staff should concentrate on administrative chores, supplying technical information and materials to interested parties, conducting workshops and training courses, and participating actively in the DPU.

- Wherever possible (e.g. veterinary services) aspects of government should pass to the private sector, though it must be recognised that outside help for quite a number of years is a requirement, taking the form of subsidies to farmers who cannot afford to pay the full price.

- Bearing in mind the overriding importance of developing waterpoints in the district and the inability of MoA and MoWD to keep adequate numbers of artisans on their payrolls to meet demand,

it is essential to set up an organisation (NGO) to keep a core of these in the district. Otherwise they will move elsewhere, with KIDP and others suffering the consequences.

- At the divisional level ministerial staff must be moulded into multi-disciplinary teams who are answerable only to divisional coordinators appointed or delegated by MRDASW or the DDO's Office. Also, staff must be significantly graded.

- The present national system of regularly rotating staff must be reviewed. In addition, rotation must be limited to a system from ASAL to ASAL, with a view of building up necessary expertise. The formal education system should consider setting up a school or institute (including short post-graduate courses) with a sole curriculum on ASAL development.

- The DC's Office (Treasury) must be modernised, whilst the DDO's Office must be modernised, upgraded, and expanded to take the leading role for which it has been designed. This also include the DIDC. The DPU must fulfil its designated role in all aspects of planning. Financial planning, work-plans, building of a planning base, and the like of all departments and programmes (including KIDP) must be passed by the DPU prior to going anywhere else.

- The DPU must have its own full time planning team. The earlier proposed land evaluation must be carried out under the auspices of the DPU or directly by the DPU.

- The DDC cannot approve projects or activities that have not been scrutinised and commented upon by the DPU.

- Under the previous setup the role of KIDP does not need to be reviewed, with the exception of transmitting plans and recommendations through the DPU before reaching the DDC.

- The role of the DC remains unchanged, but becomes more closely involved. Though the designated role of the DDO also remains unchanged, in practice this will be finally enhanced, in line with District Focus.

6. Training and qualifications of staff

Ogongo (1991) comments: " One of the major constraints among some cadres of district personnel is the apparent lack of basic knowledge and skills, and low level of commitment in the discharge of their functions. In the circumstances even the best of policies and programmes cannot be effectively implemented to realise that intended policy or programme objectives....

...Adoption of new attitudes could be achieved through a new set of incentives for all cadres of personnel. The present level of performance, care and handling of public tasks and resources is not

a manifestation of full utilisation of the existing potential".

These comments reflect a general lack of knowledge by government personnel regarding the potential of ASAL, a lack of challenge, and a widespread perception that appointments are second rate as compared to those in high potential districts. Moreover, there is a prevailing thought, shared by various donors, that development of ASAL is a waste of resources, and it holds no future. Generally there is as yet no understanding of the crucial role of ASAL in the overall development of the country. Apathy rules. If nothing is done on ASAL development, the country will face continuous crises. Solutions require all out effort and not some sector piecemeal approaches. Personnel must learn that they are part of a mission rather than a routine exercise.

Personnel and key actors in ASAL development process must be first made aware of the scope and perspective in other ASAL areas and the surrounding countries to gain and insight into the present conditions, including the process of desertification, the (mis)management of drought, and other factors. Awareness should be followed up by visiting farms in ASAL, who with their own approach and experience have made a success of their undertaking. This must be accompanied by analyses regarding time and effort, farming systems, cost benefits, etc.

An important part of the business of government is to supply information. Donor sponsored programmes must assist the DIDC in obtaining journals and relevant literature, so that staff are kept up to date and able to broaden their view. Staff must also be made to publish on a regular basis. This should not be restricted to personnel with academic qualifications only. Stimulation of peer groups must take place through regular seminars where papers are discussed.

Personnel at all levels are inadequately trained in their own field. Rules of thumb are used in activities that require closer assessment, whereas general aspects where this does apply are not considered. For example, some knowledge about rainfall erosivity, erosion susceptibility, and soil erosion hazard can be broadly applied. Decisions to build soil conservation structures merit due consideration in view of production systems farmers are opting for rather than a uniform approach. In this sense the soil conservation handbook must be upgraded to a standard commensurate with Zimbabwe or Australia.

Whether the above can be achieved through in-service training is only part of the issue. Other members of the Commonwealth maintain an examination system prior to promoting personnel to the next job group. It is highly recommended that the same be done in ASAL to obtain the desired quality.

The catchment approach signifies a collective effort from all

parties, and thus by its very nature is multidisciplinary. Also any individual farmer prefers to discuss a range of topics than to be subjected to one specific issue. For these reasons multidisciplinary training must supplement sectoral training. Personnel must be selected on merit, and those who are chosen be given the proper incentives.

As to qualifications of TA's and SDA's, there is an insufficient basis to build on through in-service training. Present personnel should be gradually phased out, and replaced by personnel with higher qualifications.

REQUIRED INPUTS

1. Selection of sites and optimum size

For lack of a planning base, objective selection of catchments with regard to priority ranking and maximum impact on the surrounding areas is difficult. However, a minimum of basic rules already justify the choices to be made. These are the coincidence of key areas with population density, further taking into account to start from the top downwards. The choice further deals with the vicinity of (cattle) markets, holding grounds, zones of above average production or potential (crops and/or livestock), and miscellaneous areas rich in water. Priority must also be considered with regard to communities/groups generating high input and organisation.

The initial size of catchments should not exceed 500 ha. for reasons of methodical and structural application of the envisaged system. There are also a limited amount of farms or families staff can deal with at any one time. About 80 farms a year is a reasonable limit for experienced personnel. Approximately 20 to 30 farms are ideal for the first and second years.

2. Catchment planning and farm planning

Catchment planning and farm planning ultimately are the product of the community, groups and individuals. Community input is obtained through participative rural appraisal, whereby the staff must draw extensively on local knowledge and lore. For example, the Akamba have their own soil classification system, including the potential and the limitations of the land.

Catchment strategies, plans and maps must be compared with similar plans, previously prepared by consultants of programme staff themselves in order to determine their fit with ecological and environmental rationality, as well as serving as a basis for further dialogue with regard to superior development options. Catchment plans (Scale 1:10,000), prepared by Groundwater Survey Kenya Ltd. for KIDP, are an example of the latter, representing the physical aspects of land evaluation at the pin point level, and are

well on the way to becoming ideal for the purpose.

Subsequent land use planning must include a production strategy and a plan for each farm, which is discussed at the individual level and later with the groups. With reference to communal land, waterpoints, hills, and rivers the issue of their status must be resolved to ensure their long term self sustainability in the rehabilitation and resource improvement process..

3. Legislative options

With reference to Figure 1 farmer groups may eventually develop into organised bodies for the purpose of production and marketing, joint ownership of waterpoints, land credit, ownership of infrastructure (buildings), equipment (tractors), shops, environmental management, etc., provided that conditions permit this development.

Avenues to formalise these aspects into a coherent legal framework must be explored at an early stage for maximum benefit. Legal bodies may be cooperatives, public companies, and a host of alternatives and combinations.

As with land adjudication, it is not important (not even advisable) to immediately establish/implement a legal framework. The desired product must be the result of elaborate community discussion, whereby tangible results of sustained community organisation are evident in the process (i.e. in all activities) of development. Also, in designing a product, relevant traditional law must be blended with the best of civil-, commercial-, and environmental legislation as a basis for new traditions.

4. Research

Research is usually conducted at the national level in isolation by the different institutes. Improved strains, new crops, exotic trees, agroforestry systems, or alternative methods are brought ready made to farmers who have a limited idea what is behind the way of thinking that led to these novelties in the first place. Furthermore, farmers may have different priorities. The adoption of a new crop, species, or technique therefore more often than not rests on coincidence or external factors.

Participative research must be made a major theme of the catchment approach, where farmers, assisted by government, define their own perceived needs and priorities. Broadening their frame of reference by seeing what others are doing (travel), of course, helps. Government should supply groups with information on how to set up trials and how to interpret results, as well as making inputs and tools available. If applicable, guarantees must be given on buying the produce, which has the added advantage that government and programmes no longer need to concern themselves with the time,

cost, and effort of seed bulking for their own demonstration plots and trial. The latter practise should actually be eliminated.

5. Services

For reasons of access during the rains as well as cost, locating nurseries within the catchments is recommended. More important, farmers and groups should be able to select the species of their choice rather than to have others make decisions for them. This includes tree species of any kind (i.e. fruits, timber, legumes, etc.). Government must supply inputs and facilities (water), and should further consider making available some funds to a limited number of people who are fully employed in the nurseries. This should further be extended to planting trees for public benefit.

As part of the present KIDP programme vaccination campaigns in the district are conducted free of charge. As part of the campaigns, priority must be given to the catchments, and combined with regular checks and information supply regarding animal health.

Although farmers currently are awarded a plough after building terraces (1 km) on their land, very few are using these for lack of draught animals. These are either too expensive to maintain or funds for their purchase are not available. Findings of a socio-economic profile of Kitui District show that only 3.5% of farmers own a plough.

The easily compactable soils in the district, however, require regular ploughing to make the difference between obtaining a harvest and being faced with crop failure. Moreover, animal traction is not sufficient. Deep ploughing or even deep ripping (soils permitting) is a periodic necessity to enlarge the soil water profile (i.e. to increase effective rainfall). Deep ripping may only be needed once every ten years. Deep ploughing (in excess of 8 inches) must be done at least once every three years.

6. Technical inputs

Technical know how of ASAL dates back to early this century (Australia, South Africa, USA, Zimbabwe, Israel, Kenya), and has become considerable since the 1930's. Yet smallholders in Kenya's arid and semi-arid lands to date have only been marginal beneficiaries of this knowledge, based mainly on the notion that related techniques of high technological inputs are unsuited for subsistence based economies, and that the considerable efforts required thus do not justify the cost. This attitude is reflected in the present day extension messages that are too simple as well as fragmented to have the desired impact, despite "packing a punch".

The above mentioned view may have held currency in the 1950's, but must be re-examined in the light of the 1990's and the prevailing

trends. Also because of this view, development of appropriate technology, relevant research, and adequate supply of information have not merited the attention they deserve. Some examples are as follows:

- There is no reason for uniform application of soil conservation measures. If a farmer in AEZ V on a 2% slope with a sandy loam wishes to grow maize under conditions of minimum risk, he has a right to be told how this can be achieved if he is prepared to bear the cost.

- Knowledge of the production of species introduced for the purpose of re-afforestation is sketchy at best. Comparative data with regard to local and exotic species under different conditions are hard to find. Performance of local species under conditions of improved soil water is not known. There are no guidelines for the best species or combination of species to plant under given conditions, at a given time, and at a given place.

- During the past 40 years no new pasture species have been introduced in the district, Napier- and Bana grass excepted, and perhaps *Panicum maximum*. Adaptive trials to introduce semi-arid pasture legumes (e.g. from Australia or South Africa) are, however, a matter of urgency.

- Individual farmers at their own initiative have experimented by combining pasture and fodder trees or bush in general, with a view on increased biomass production, as well as adding different soil and water conservation measures. Though results are clearer to see, no adequate official notice is taken, and no data are available, the potential importance of such a component in an AEZ V production system notwithstanding.

- The introduction of organic farming is as yet to come. In combination with terracing and ploughing it could probably reduce the risk of crop failure to a minimum, in AEZ V included. It would further enhance the widespread acceptance of zero grazing, thus improving the environment and farm income in the bargain.

7. Training of target groups

Training of target groups may be compared to in-service training with reference to an agreed development strategy, as for example set out in this paper, in order to have the desired effect. A training curriculum must be in accordance with a given sequence of activities and steps denoting the achievement of recognised objectives. Training must be conducted in the field in conjunction with carrying out related activities by specialised personnel, as distinct from the facilitators who are engaged in community participation.

Training covers a range of themes ranging from administration,

marketing, environmental management, legislation, land adjudication, technical know-how and others. Although initially managed by qualified training officers, it is gradually taken over by the community facilitators and members of the communities themselves, as it is a process of years.

As mentioned in an earlier paper (van der Zee, 1991) training of target groups is most effective through the schools approach, since more than 52% of the present population is under 15 years of age. A significant percentage of these children will remain on the land to take up farming. It is also recommended that adult education focus on the catchment approach.

8. Training materials

Present training materials generally cover a limited range of topics and reach an insufficient number of households, apart from being too simple and fragmented. Materials must be changed in accordance with viable development strategies that farmers recognise, and which reflect their own input and perceptions.

The preparation of current materials is further hampered by allocating a minor proportion of development funds to this exercise, and is characterised by underestimating the ability of farmers to absorb complex ideas. Communication is neither simple or inexpensive. Changing farmers consequently first requires changing the attitudes of educators and the priorities of financiers.

The recent production of a manual entitled "Sustainable Agricultural Production in ASAL" for KIDP is a step in the right direction. This must, however, be followed up by a host of similar manuals (cropping, trees, agroforestry, livestock, production systems), the themes of which are comprised in this chapter but also including health, nutrition, construction, and others.

9. Community participation

Community participation erroneously suggests that the initiative to change comprises a set of activities undertaken by government and/or donors. This is exacerbated by community perceptions about the role of government as a leader, which in turn is re-enforced by the attitude of the government's officials.

Community participation is about establishing new traditions (hence ideology), self management, and self reliance, on the part of target groups and communities it requires trust, a sense of being in charge, an equilibrium between liberty and authority, leadership, courage, and an awareness of the political, social, and economic dimensions of identified goals to mention but a few. On the part of government and the donor community, it requires people who know what they are talking about, a full commitment right down to the individual level, a natural ability of facilitators to

communicate, and personnel presenting themselves as servants of the public interest rather than members of a ruling class. All parties must be aware that the products of community participation more often than not clash with the political interest, and at times even with the interest of government.

A successful participation methodology is not easy. It is a process of mutual learning, whereby mistakes are inevitable and where the above mentioned conditions are hardly ever present in the beginning. Furthermore, what is good for Sao Paulo most likely is not suited for Kitui. It is therefore not surprising that places where participation is seen to work, are few and far between.

The foundation of a viable model must originate with government at the district level, involving all departments under the leadership of the DDO. It requires a joint vision, incorporating a knowledge of the district's potential and limitations, about all facets of development. Apart from lacking a planning base the most difficult part in such an exercise concerns an understanding between the different disciplines and individual ideologies. Not everyone has an appreciation of ecology or the wish to alleviate or eradicate poverty.

Presuming that designing such a model is indeed a possibility, this initially (as e.g. also this paper) only serves as a frame of reference for the facilitators in their dialogue with the identified groups at the catchment level. The mutual exercise of fitting perceptions into an agreed strategy will generate a logical framework, a plan of operations, and subsequent workplans. As from then onwards projects or programmes can embark on a road loaded with pitfalls, guided by Freire, and applying the necessary modifications (evaluation and monitoring) on the way.

TOWARDS COLLECTIVE SELF RELIANCE

Figure 3 shows a number of steps that have led (and are still in the process) to development of an area and its people in the province of Choco, Colombia. With some modifications it can be imagined that a similar process may apply to the catchments of Kitui, and eventually the district.

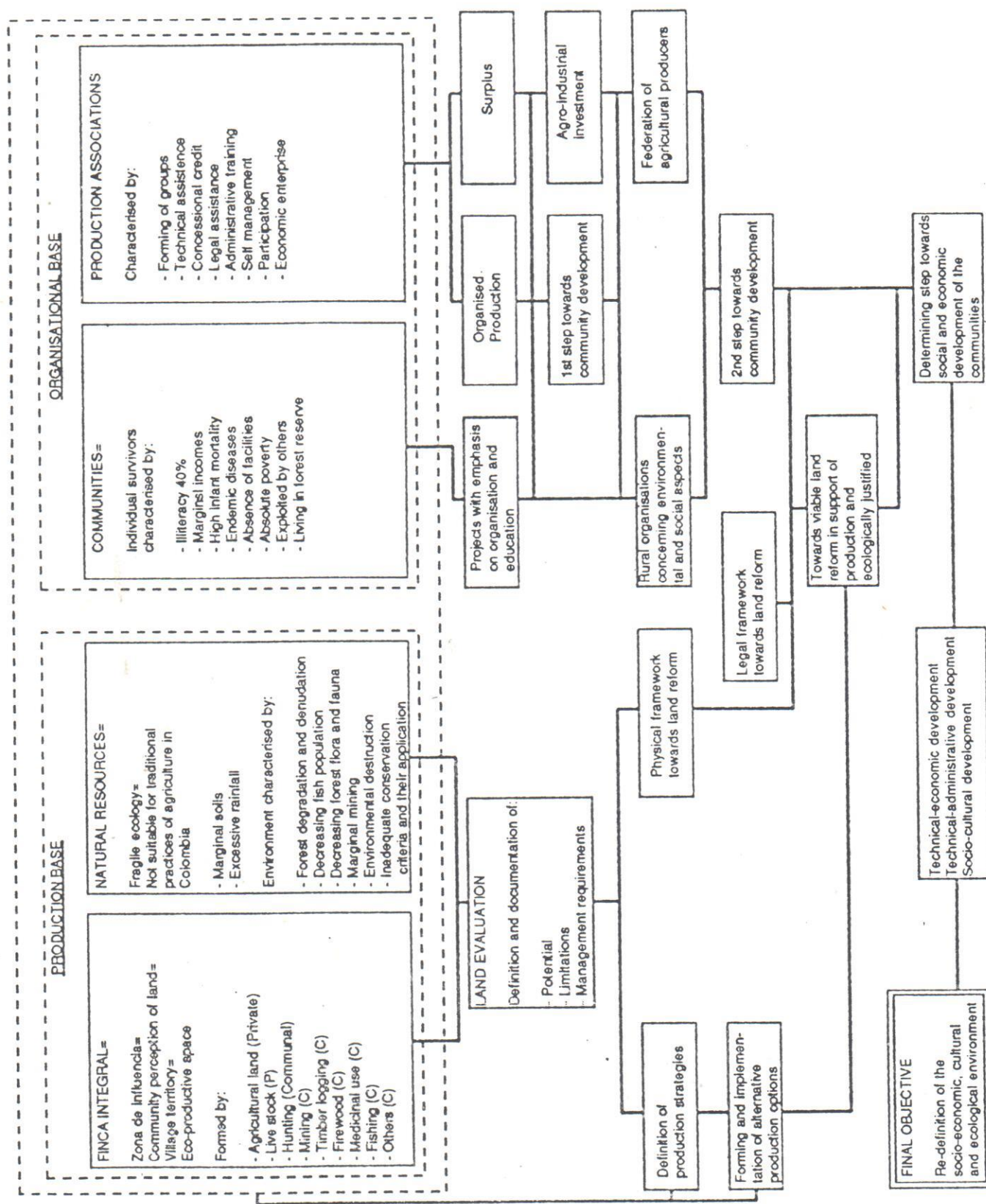
From this figure it can be seen that the final objective is to generate definite changes in the socio-economic, technical, administrative, and socio-cultural climate. With reference to the organisational base the first step towards this goal is the formation of cohesive groups, with their own ideas about development. Pre-requisites concern an organised production and marketing system, obtaining surplus, investment in agro-industry, and the development of ancillary activities which pertain to training and community organisation. It must be noted however, that in Kitui there may be a different scenario, although this is doubted. Underproduction and underemployment are issues of

paramount importance to the community and need to be addressed.

The second step is dictated by the formal organizations of different kinds growing out of the first step. These organisations most likely will be production oriented, but may also deal with the environment, land, or education. Investment of surplus in shops, health, or other needs serves to strengthen the organisations.

The third and determining step to reach the ultimate objective, is the final push towards economic and social development. This may generate, for example, creating a water authority, land use authority, or a catchment authority comprising tens or thousands of hectares. As to the management of land and water catchment authorities actually transcend the present laws.

FIGURE 3: REQUIRED STEPS TO REACH THE DESIRED DEVELOPMENT



COSTS AND BENEFITS

A minority of people, mostly engaged in the technical aspects of ASAL, claim that development of Kenya's arid and semi-arid lands is a financially viable proposition. A majority of economists, policy makers, and donors with little experience in the relevant field, claim that generally ASAL holds no future. With a view on the latter philosophy it appears that funds for ASAL are made available on the same grounds as the permanently employed in the developed world receive their benefits. However, half hearted attempts are self defeating, and furthermore cause donor fatigue.

Presently neither opponents nor advocates are capable of presenting a valid case. Analyses based on the past and present poor ASAL performance and present trends implicitly ignore a lack of vision and poorly formulated programmes as some of the root causes. Positive experiences like ALDEV in Kitui are also ignored. There are few case studies in the developing world regarding the cost benefit aspect of soil conservation (Pagiola, 1991), which, moreover, are largely speculative as well as subsistence oriented. Without discounting their value, cost benefit analyses are needed for an improved system, of which terrace building is but a component. If no data are available, at least drawing up a number of scenarios will help to obtain an idea of inputs, costs, and projected benefits.

Calculations of costs and benefits must further give consideration to three scenarios with regard to trends. The first of these is the "Ethiopia scenario", which under the circumstances is a probability if present Kitui trends continue. The cost of social upheaval, political unrest, and resettlement must be included.

The second scenario concerns present inputs in ASAL and the returns these are yielding, i.e. basically the sectoral approach. The third scenario concerns a cost benefit calculation by taking the systems approach. Undoubtedly the costs will be high. But what is at stake are the benefits and not what donors are willing or can afford to pay.

Farmers and nations in general are prepared to go to great lengths for the sole purpose of feeding themselves, and defying any monetarist's comprehension in the process, whilst achieving results no one imagined. The case study of Kambiti Farm in Machakos District as described by Mutiso and Mutiso (1991) is a local example. Israel and the Netherlands are full of similar examples. They flourish. Kitui can also flourish.

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PART FOUR: THE NATURAL RESOURCE BASE

LIVESTOCK IN KITUI

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IAC

1. INTRODUCTION

Kitui district has a long history of livestock production. In the days past, when the human population was low, many areas of the district were used for pasturing cattle and goats. Nomadic pastoralism is now left only in the Eastern parts of the District. The general livestock situation and its relative importance vis-a-vis crop agriculture has been changing with time. This paper is written with the intention of stimulating discussions on the future development of this important industry.

2. THE NATURAL RESOURCE BASE

The two most important natural necessities for livestock production are water and feed. Both depend on the climate which also influences vegetation on which livestock thrive.

Kitui is a large district (31,000 sq. km.) which has large flat areas. The rainfall varies with relief and is highest in the hilly areas of Central, Kwa Vonzia, Eastern and Mutomo Divisions. The average annual rainfall realized in these hilly areas ranges between 850 and 1000 mm. It is however, subject to variations. The flatter areas vary in altitude also and they receive not only much less rain but the rainfall itself has a very low reliability. Although old rainfall records show that the district has a bimodally distributed rainfall, the short rains have tended to be more reliable than the long ones. The rainfall in the lowlands ranges from 450 mm. in the dry eastern rangelands to 800 mm. in the sunflower maize zones.

The vegetation, as in other areas, is dependent on rainfall and soil types. The original vegetation of most parts of the lowlands was grassland with a few trees mainly along the water courses. This has now changed through man's influence (cultivation, overgrazing etc) and what we see today are grasslands with lots of bush and little grass cover. The denuded grasslands still retain the capability to recover if rested but the current population densities do not permit such rests. Soil conservation measures will need to be applied and in some cases (on private land) re-seeding will need to be done. As is mandatory elsewhere, protection of the land being rehabilitated from livestock will need to be effected or else all the reseeded efforts will come to nought.

Kitui has many important grass species e.g. *Chloris roxburghiana*, *Eragrostis superba*, *Cynodon dactylon*, *Cenchrus ciliaris* and *Aristida* spp. Its woody species include various species eg. *A. mellifera*, *A. tortilis*, *A. senegal* and others like *Balanites* spp, *Grevia* spp and *Commiphora* spp. Most of these range species are browsed by goats and grazed by cattle and are the basis of livestock industry in Kitui.

Kitui district can be divided into seven agro-ecological zones (see table 1). These zones are based on rainfall, its reliability, altitude and other aspects e.g. length of growing season. They indicate the agricultural potential. According to this classification, about 85% of the district is suitable for either livestock alone or in combination with drought resistant crops like millet. The better zones (15 % of the district) are suitable for food and commercial crops. In these areas, livestock are also kept but they face a lot more competition from food crops like maize and beans than from coffee and cotton which have of late been bedeviled by marketing problems. The budding Kitui dairy industry is also based in the same favourable zones. Cultivation for food crops has been extended to the less favourable zones and although it is seen as a food security matter, the reality is that the crop failure rate is so high that it would have been better to leave the grass for livestock. In the lowland ranching zone, cultivation except in flood plains is useless. Water for livestock is scarce during the dry season and the only advisable land use is what the people are doing, namely nomadic pastoralism.

Table 1
Agro-ecological zones of Kitui District.

Agro-ecological zone	Area	%
Um 3-4 Transitional coffee zone	69,000	0.34%
Um 4 Sunflower - maize zone	275,000	1.37%
Lm 3 Cotton zone	25,000	0.12%
Lm 4 Marginal cotton zone	2,553,000	12.71%
Lm 5 Livestock millet zone	9,380,000	46.70%
L 5 Lowland livestock/millet zone	786,000	3.91%
L 6 Lowland ranching zone	6,996,000	34.83%
Source: Olang and Maritim (1986)		

3. THE PRODUCTION SYSTEM

Due to rainfall limitations, the district has a very limited number of systems of livestock production

1. Mixed farming

Most Kitui farmers can be regarded as mixed farmers since they grow crops and keep some livestock. The number of livestock kept by these farmers is variable and it depends on the agro-ecological

zone which is also correlated with the size of holding.

In better endowed areas, farm sizes are small (about 2 acres per family) and the land set aside for grazing is very small. Cattle kept are few (usually 1-2 cows, 1-2 oxen for ploughing and a few goats. Both cows and goats are tethered.

In the drier areas of the "mixed farming zone", farm sizes are larger (up to 15 acres per family) and the herd sizes are accordingly bigger. Livestock are herded during the wet season, but during the dry season they are let to pasture on their own. This practice called "Kulekya" is a problem to fruit tree growers and farmers using bench terraces as soil conservation measures. It is also a hinderance to good livestock disease control.

An important subset of mixed farming is dairy cattle husbandry. This has started picking up in the parts of Matinyani, Mulango, Changwithya, Mutonguni and Migwani locations. Dairy cattle are fed fodder from planted pastures (napier grass mainly), allowed to graze natural pastures and also fed crop residues e.g. maize stover ("mavya").

2. Ranches

Kitui has 15 ranches (4 co-operative, 1 DAC, 1 private, 1 individual, and 8 group). Although most of them are large (greater than 1000 acres), the official stocking rates in most of them (except B2 Yatta and Mwakini) are low. The unofficial stocking rates (composed of member's stock and illegal grazing) are high and in some cases e.g. Mwakini have led to general overgrazing. Livestock and pasture management, as well as illegal grazers, are big problems.

There are other smaller ranches owned by a few people in Kitui (in Kavisuni/Kanyangi/Mbitini) but as a land use, ranches are owned by a minority.

If well managed, ranches can be an important source of meat animals. They are mostly established on the western frontier with Machakos district and need protection from disease carried by livestock.

With the general collapse of group - ranches elsewhere in Kenya, it is debatable if the Kitui group ranches will stand. At any rate it is highly unlikely that more ranches will be created.

3. Nomadic Pastoralism

In the Eastern, North-Eastern and Southern parts of the district, farmers practice a form of nomadic pastoralism. These areas are used during the rainy season when water is found in depressions and in the seasonal rivers. When the areas dry up, the animals are moved to areas where water can be found. These areas used to be

pastured by all people but of late, some people have started settling. Insecurity from bandits and general water shortage (aridity) limits the use of this area and we may start seeing localized deserts around areas with permanent water.

In common with other communally grazed areas, pasture improvements and water facilities are not developed. It is a serious environmental question as to whether such areas should be settled or worse still whether water should be developed.

4. LIVESTOCK TYPES KEPT AND POPULATIONS

The inhabitants of Kitui district keep virtually all the common rangeland livestock types i.e. local cattle, sheep goats and poultry. In the wetter areas, dairy cattle are also kept and in the areas near towns, exotic poultry are kept. These exotic livestock are, however, a small minority.

Estimates of livestock populations in Kenya are made by the officials of the Ministry of Livestock Development and are usually projections of and earlier estimate basing the increases on predetermined growth rates e.g. 5% for cattle. These estimates can be erroneous, but since it has not been possible to conduct censuses often, we have no more reliable estimates than these.

Table 2 shows livestock population estimates of ruminants and donkeys. The only data set for which credibility can be attached is the 1986 one. During this year, as was the case in many other Kenyan districts, a livestock census was carried out with the aim of estimating the effects of the 1984/85 drought and to provide a situational picture.

The data presented in Table 2 shows that the district has:-

- a) A relatively small population of dairy cattle.
- b) A sizeable population of beef cattle
- c) A large population of goats
- d) A relatively small population of sheep

Table 2
Livestock Population in Kitui District

Year	Dairy Cattle	Beef Cattle	Goats	Sheep	Donkeys
70	158	500,000	400,000	300,000	-
71	170	500,000	328,297	300,000	-
72	186	498,000	450,000	350,000	-
73	238	503,000	451,200	352,000	-
74	250	300,000	450,000	235,000	-
75	275	405,000	700,000	405,000	-

76	86	269,369	305,074	77,706	-
77	235	251,945	350,000	80,000	-
78	300	280,300	450,000	70,800	-
79	-	300,000	400,000	115,000	-
80	-	207,717	284,043	78,296	-
81	1,000	202,000	298,000	82,000	-
82	500	221,000	297,000	81,500	-
83	-	220,800	285,000	79,000	-
84	-	288,678	373,880	80,000	-
85	730	192,145	289,765	47,100	-
86	4,970	293,670	427,932	60,070	38,600
87	5,800	304,300	534,500	68,500	47,080
88	6,700	327,900	621,755	75,403	49,434
89	7,000	363,290	516,690	64,800	34,960
90	7,735	344,040	660,047	64,899	56,100

Source: Gitu et al. 1986. Annual Reports, MoLD Kitui.

a. Dairy Cattle

The data on dairy cattle population before the 1986 census were unreliably estimated and as such they cannot provide a trend in development. The data from 1986 onwards is reliable, according to the D.A.P.O. (Kinoti, personal communication). It shows that dairying is picking up slowly but steadily. Dairy cattle are now found in the wetter parts of Central, Kwa Vonzia and Mwingi divisions while in other areas, (Kyuso and Mutomo), farmers are now making important strides in preparations of their land for dairy cattle.

Considering the land potential, the high milk prices (about Kshs. 7 per litre) the dairy population should be higher. Reasons advanced to explain the low adoption rate include problems with tick-control and small size of holdings. A lot of interest has been indicated in obtaining material for planting pastures but this has yet to be translated into action since even when the planting material is taken nearer their farms the budding dairy farmers do not use all of it. It is likely there is an issue of prioritization and this will be sorted out with time.

AI is unlikely to assist in the dairy herd expansion and since earlier bull schemes have also failed, private farmers will have to co-operate to operate their own schemes as bull stations.

Dairy extension should continue to be supported as dairying can improve incomes of the small scale farmers. AI runs are making no impact due to the very poor response of the farmers. The AI vehicles should be used in extension. Some ranches e.g. B2 Yatta should be encouraged to breed crossbred dairy heifers for sale to local farmers. Co-operating farmers should be encouraged to form groups of friends and share bulls and to cleanse them of ticks.

b. Beef Cattle

It is apparent that the beef cattle population has been going down and this drop occurred before the 1984/85 devastating drought. The reasons for this drop are likely to include droughts which have been hitting the district quite often, devastating diseases and the dwindling sizes of holdings. Droughts are likely to have been the most important cause and livestock are more likely to have been reduced through either sales for food and school fees or sales to save the investment for total loss that drought can cause. As is usual with people of low income, the money from sales is spent on other necessities and when the drought ends there is no money to restock the cattle. There are many unconfirmed stories that many farmers who had no alternative sources of income sold their cattle when they sensed that the last drought would not abate soon and are now without livestock.

A serious problem related to the dwindling cattle population is the shortage of oxen for ploughing. This has reduced the chances of poor families' providing food for themselves since they have to wait for others to plough even as the short and unreliable Kitui rains progress.

c. Goats

Like beef cattle, the numbers have also been reduced although as expected, from their high reproduction rate, they are rising again. Goats are easily devastated by CCPP, Anaplasmosis and ordinary pneumonia, but even without disease, they are the most sold livestock thereby acting like a "current account". Droughts are likely to have affected them through sales to get money for food purchases. Farmers in the higher potential areas keep very few goats and as the holding sizes have been shrinking due to subdivision, the goat population is also shrinking. Restocking after drought is normally based on goats as they are more affordable than cattle. When the goats increase they are sold to provide money for purchasing cattle. Goat populations include the famous white Galla types which have a larger mature body weight than the ordinary small East African goat.

d. Sheep

Sheep for social reasons which include "witchcraft" are much fewer than goats. Their population has also been going down and one wonders if the population ever reached more than 100,000. Promotion of improved types e.g. Dorper may not be effective as sheep are not a highly preferred livestock type. An exception is made for the large Christian communities but these unfortunately are in the high potential areas whose grazing land is small.

e. Poultry

Kitui district has a significant local poultry population of 1,200,000 birds. These birds provide eggs and offspring which are sold for cash. Although individual flocks are never very large, the income generated compares very well with that from goat sales! Poultry keeping is done by women generally and besides providing independent cash (from their husbands) it is important in kinship bonding through donations of pullets to young relatives and slaughtering birds for visitors. Of course family members also eat the birds.

Improved poultry forms a small but significant proportion of the total poultry in Kitui. There are about 5000 hybrid layers and many more products of the Cockerel Exchange Programme (CEP) of the NPDP project of the Ministry of Livestock Development. The results of the CEP programme, fast growing crosses, have been demonstrated in the field Kitui. Mutomo, Central and Mwingi divisions have benefited from the Mutomo rearing unit. Mutito division is about to start a rearing unit.

There is a current shortage of eggs in the district and as such poultry development should get assistance.

f. Donkeys

These are the most important beasts of burden in the district. Almost all families in the dry areas yearn for a donkey for drawing water. Donkeys unlike other livestock species do not suffer from any devastating diseases and as such their population can be expected to increase, but unlike other livestock, their parturition intervals are long.

5. CONSTRAINTS AND POSSIBLE REMEDIES

Size of Holding

The normal increase in population due to births coupled with immigration had resulted in too dense a population for a relatively dry area. This pressure is highest on the Kitui hills which are wetter than the lowlands.,

The first production priority for a family is to provide food. this is usually maize, beans, cowpeas, pigeon peas and millet. The land is used for crop growing and if some portion remains, it can be used for grazing. Spare land has been difficult to come by and this land shortage is constraining dairy and other types of livestock production.

A short term solution is to intensify livestock production. While family planning attempts to contain the current growth rate, farmers will have to intensify using low cost techniques and using their own labour as much as possible. Intensification will lead to more tethering of livestock and stall feeding in some cases.

Water

Kitui is the source of important rivers like Tiva, Thua and many other smaller ones. The Tana and the Athi rivers, the largest in Kenya, form the boundaries with Embu, Meru and Machakos. The water table in parts of Central Division is shallow. The big water courses are however, far apart and the areas between them have hardly any water during the dry season. It can be said that there is enough water in all the water courses in the district but the major constraint is affordable technology to tap and distribute it.

Water shortage is very common in the rangelands and this affects livestock husbandry as watering during the dry season has to be done every 2-3 days in some areas. The same water shortage has made it very difficult to establish dips for tick control. Exotic livestock which require water more frequently than the local types cannot be acquired and maintained in many areas. It is therefore necessary to develop water facilities to assist livestock development.

Kitui has a long history of water development using rock catchments e.g. Ngomeni dams and weirs, but most of these are in a state of disrepair. It may be about time that farmers were encouraged to make their own hafirs and be shown how to maintain them since most public water facilities tend to be neglected by beneficiaries. Assistance in siting dams should be given by experts. Proper surveys to allow livestock access to public water sources e.g. dry river beds, dams etc should be done as without these, livestock in future may have no access to rivers. Co-operation among all the agencies involved is vital.

Bush Encroachment

The original vegetation of most of Kitui plains was savanna with lots of grass and few trees except along the river courses. When properly utilised, burned strategically, bush does not constitute a big problem. However, when overgrazed, bush starts taking over from grass and it has to be cleared taking much energy and or expense. Most of the ranches in Kitui have a bush problem and even the small farms are not spared.

A number of solutions can be proposed. One is utilising of browsers like goats and camels. Goats handle bushes upto their "extended heights" beyond which they can do nothing. This is evidence by the fact that there is bush even in the areas keeping goats. Goats can do a good job but they will need to be assisted by man to prune or to selectively clear the bigger, taller trees in order to allow grass growth.

Camels, like goats are good browsers. They can control bush to a certain degree, but their browsing habit is such that they feed on very many plants and never browse on a particular plant to the

degree that the plant can die. They can be adopted in areas with large farm sizes e.g the Eastern rangelands where they can also fit better due to their ability to stay without water for up to 10 days.

For other areas, man has to clear the bushes before they become trees. This can be done by using fire judiciously. Some of the big trees can be used for charcoal burning. The current laws do not permit tree felling, and will have to be modified or else bush will be so perfected that it swallows all the pasture and tsetse flies come to the farmers' doorsteps.

The ultimate solution is to control grazing pressure by destocking overgrazed areas. This can come through a long term extension/education programme. Excess woody species will always need to be cleared early. The current low livestock populations may be a blessing in disguise and the extension services should take the advantage to extend range improvement messages,

Livestock Diseases

All major livestock diseases such as Anthrax, Black Quarter, Trypanosomiasis, CBPP, CCPP, East Coast Fever, Anaplasmosis Foot and Mouth disease and Lumpy Skin Disease have been reported in the district at various times in the recent past. Some of the diseases can be prevented through vaccinations (CBPP, Rinderpest, LSD, Anthrax) while other cannot be prevented in the same manner.

The control of diseases through vaccination is successful if:

- a. All the animals are vaccinated.
- b. Animals in the neighbouring districts are also vaccinated.

In the case of Kitui, there has never been enough funds and possibly personnel to allow a coverage of all the animals (or even cattle). The funds available have allowed a coverage of 2-3 divisions per year at most. This has reduced the effectiveness of the whole exercise as the animals in the unvaccinated areas keep on mixing with the vaccinated. The neighbouring districts of Tana River and Garissa are the sources of some of the livestock traded in Kitui. It is known that vaccination in these two district is even more problematic than it is in Kitui. The result of this poor state of vaccination is that many Kitui animals are attacked by many diseases which can be prevented. It would be advisable to give adequate funding to cover all the cattle against all notifiable diseases or else the current piecemeal coverage may not be worth the effort.

Immunisation of goats against CCPP is also problematic since, unlike cattle, there are usually no crushes that can be used to restrain them. Besides, the attitude of the pastoralists is to protect cattle rather than goats. Before enough extension has been done it may be a futile exercise to immunise goats.

Tick control is a complex problem in Kitui because of the lack of water for dips. Spraying against ticks is the only viable solution. Spray pumps and acaricides like Triatix^R are expensive. Farmers will need to co-operate in the purchase and use of spray pumps and also share labour. There is also an opportunity for local enterprising young men to buy spray pumps and spray farmers' cattle at a fair cost. Such men already exist in parts of Central Division where they help in tick control of goats owned by women's groups.

There is a tendency for pastoralists in Kenya to treat their animals usually with the miracle performing terramycin and berenil. This tendency is known to create resistance to disease due to underdosing. Veterinarians should keep on instructing on the correct dosage through group meetings or demonstration. Some local people should be instructed further to act as "village doctors" but also to maintain contact with AHA's and Vets for difficult cases.

The status of disease reporting especially where epidemics are involved needs to be improved. Provincial administration should be able to assist in passing this information as well as assist in the law enforcement relating to quarantines. Vets need to be fully prepared to cope with epidemics and for this reason support in form of transport, fuel, drugs, etc should be availed. The support should be related to livestock populations and the vastness of the district. There is a current shortage of vets and other livestock disease prevention staff. This shortage is caused by reasons beyond the district control and is even an important reason why vehicle, fuel and drug support should be intensified. KIDP is assisting in the construction of offices and labs with facilities. These will be utilised better if transport to reach the foci of disease outbreak can be improved. Other government departments can also assist with vehicles when there is a disease outbreak.

Livestock Marketing

Although livestock marketing is generally a constraint to livestock development in other parts of Kenya, there is not sufficient quantitative marketing data to show that it is a constraint in Kitui. We have, however, verbal reports indicating that it may be so and we are aware of the market organisation and problems which we can discuss under this heading.

A number of questions can be posed and their answers, if known, lead us to the knowledge of the situation pertaining to livestock marketing in the district. Those questions include:-

- a) Are there any livestock for sale in the district?
- b) Do Kitui livestock keepers sell livestock in excess to their needs or are they such lovers of livestock that they cannot countenance selling?
- c) How are livestock marketed in the district, how is the marketing organized and are there enough marketing places and other support

facilities to enable producers and sellers to get fair prices?

The answer to the first question is not straight forward. The livestock populations indicate that if we assume a normal off-take rate of 10 - 15%, we can expect between 34,000 and 52,000 beef animals to be sold in a year. Such numbers cannot be regarded as high enough to attract many buyers in the year but are high enough to warrant an efficient organization to benefit producers. The numbers are too low to warrant the construction of elaborate sale yards for if the cess per animal is about Kshs 30/=-, the expected revenue would be Kshs 1.5 million if they are offered in the first markets. Assuming that half of them will be resold at the secondary markets, the gross revenues are likely to be about Kshs 2.3 million per year. Not all the cess payable is paid and hence the realised cess could be about Kshs. 1.5 million.

There are many more goats than cattle. With an off-take rate of about 20%, about 130,000 goats can be sold through the markets. Assuming a cess of about Kshs 5/=- each, about Kshs. 0.5 million can be realised in cess. With the combined estimates of beef and goats, it would appear that the district has livestock for sale.

Kitui livestock keepers have a sale custom and if the prices are fair, they sell their livestock readily. The sales are prompted more by needs than by prices. These needs are in form of school fees (Kitui farmers value education) and food purchases (the unreliable rainfall necessitates lots of livestock sales). Mixed farmers usually sell their mature ploughing oxen and buy younger ones to train for ploughing. The excess cash generated is used for other family needs. Some of the young bulls offered for market are not sold out of the district but to other farmers, who buy them in the markets. During drought or when threatened by epidemics, Kitui farmers sell a lot of livestock and are usually unable to replace them after droughts or epidemics.

Marketing Channels and Organisation

Kitui livestock is marketed through both official and unofficial channels. Livestock, especially in the areas far from market centres, (and there are many such areas in the district), are first offered to local or itinerant traders who buy at the farm (boma) level. If the price offered is acceptable to the owners, the traders buy them and trek them to either the scheduled market areas or to other areas where they may have orders. If no trader offers an acceptable price, the farmer normally treks the animals to the nearest scheduled market centre unless they have prior information indicating that prices at another market are better.

The district has 14 scheduled market places at Nguni, Tseikuru, Mwingi, Migwani, Kabati, Tulia, Mutito, Zombe, Nuu, Endau, Kalundu, Kisesi, Kavisuni and Mutomo. These markets may appear many but considering the vastness of the district, one can see that some

parts of Yatta plateau and in the southern division (Mutomo) are quite far from the scheduled markets. These scheduled markets serve as primary, secondary and even final markets depending on the location of producers and sellers.

Wealthier traders tend to concentrate on a few important markets like Nguni, Kisasi and Kalundu. They, however, have contacts with small scale traders who buy animals at the smaller markets. Livestock is also moved from one important market to another important market depending on prices. Butchers also buy slaughter livestock from both farms and markets. They also form an important channel. Purchases made in the final markets can be transported in lorries or be walked to their destinations. Lorries are usually preferred by disease controllers.

Final Destination and Stock Routes

Kitui livestock usually ends up consumed in various areas including Nairobi, Meru, parts of Central province and even in Mombasa. The stock routes are generally two, one from Tana River through Kakya-Mutha to Kisasi and another in the northern side, Garissa, Bangale, Nguni, Meru or Nairobi/Central Province via Thika. The livestock sold in Kisasi can be resold in parts of Machakos district including KMC, Athi River or be slaughtered in various Nairobi abattoirs. Some may also end up in Mombasa. As mentioned already, the routes taken by the traders are many and in some cases livestock move from Nguni to Kisasi and then to Nairobi or Mombasa.

Stock routes in Kitui are known but no facilities like water points are developed. This lack of water results in excessive weight losses which are in turn reflected in poor prices.

Marketing Facilities and Organisation

Most markets are underdeveloped. There are neither auction rings nor places to restrain livestock during sales. The collection of cess and the examination of livestock for diseases are very problematic. It is estimated that the Kitui County Council collects only 20-30% of all the livestock cess due to it, owing to poor marketing infrastructure. No price information is given to sellers and this results in exploitation by middlemen.

Price Determination and Levels

Virtually all the marketing is by private treaty as no functional auctions exist. Prices received depend on seasons and more on whether there is a general food shortage or not. School fees also tend to depress prices. The levels received are considered low for the sizes of animals and it is felt that the markets should be better organized to assist the producers.

Some Estimates of Offtake