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RESERVE (832)

THE APPLICATION OF THE CONCEPT OF COMPREHENSIVE  
AND INTEGRATED REGIONAL PLANNING TO THE  
DEVELOPMENT OF LAKE VICTORIA BASIN

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ABSTRACT.

On the 16th December, 1978, President Moi, on a visit to Nyanza, proclaimed the creation of the Lake Basin Development Authority. He directed the Minister of Planning and Community Affairs, Dr. Robert Ouko, and the Vice-President and Minister of Finance, Mr. Mwai Kibaki, to work out details of the proposed regional development. This paper has attempted to provide ideas which may be useful in discussing the development project. The author believes that the best approach is the comprehensive and integrated regional development planning. The planning and development authority charged with the responsibility should be as autonomous and independent as possible to ensure efficiency of operations and for the participation of the local people in their own development. But such a plan requires detailed information of the existing natural and human resources. These resources could then be transformed into tangible useful goods and services. The framework of operational decisions was then discussed, and problems of plan implementations were briefly mentioned. The author then cautioned the readers to beware of certain serious weakness of a regional development plan. Such weakness include externalities political problems, multi-disciplinary approach and the need for cooperative international efforts.

THE APPLICATION OF THE CONCEPTS OF COMPREHENSIVE AND  
INTERGRATED REGIONAL PLANNING TO THE DEVELOPMENT OF  
THE LAKE VICTORIA BASIN

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I. INTRODUCTION

During his historic visit to Nyanza Province on the 16th December, 1978, President Moi proclaimed the creation of Lake Victoria Basin Development Authority. The visit was historic not only because it had been about ten years since a President visited the Province (the last visit was in 1969), but it was also memorable in that the crowd that turned out for the occasion was perhaps the biggest one ever in the area. The announcement was greeted with deafening cheers from the crowd. This elation was enhanced when the President directed the Minister of Planning and Community Affairs, Dr. Robert Ouko, to work out details of and programmes for the proposed authority. He is to collaborate with the Vice-President and Minister of Finance, Mr. Mwai Kibaki. Thus, for the first time in the history of the Province, an expectant crowd was given an appropriate Presidential gift at the right time. The cheers on the people's faces were a testimony to the depth of appreciation of the gift.

The significance of this proclamation cannot be over-emphasized. In the first place, for the first time in the history of the area, a regional development authority was created. Of course, in the past, there have been various plans on drainage problems, on irrigation of limited areas,

and on industrial development. But these were small-scale efforts to deal with regional problems on an isolated and individual basis. A regional development authority would have the capability to plan and develop comprehensively on an overall basis; it would also investigate the water and other resource endowments on a long term perspective. In the second place, the choice of the two powerful Ministers to spearhead the development of the proposed authority symbolised the weight attached to the directive. Indeed, the President's bold move, if successfully implemented, has the potential of literally transforming the region from a backward area into a prosperous one.

## II. THE IDEA OF WATER BASIN DEVELOPMENT AUTHORITY

The idea of promoting social and economic development of a water-basin region through a development authority is not new. Indeed, we live in the age of regional, national, or multinational development authorities based on the existence of water resources. Several cases of such water basin based authorities abound in the world. A good example of a successful water basin development authority as a national level is the Tennessee Valley Authority along Tennessee River. We can learn, from this authority, a lot of good lessons: how to harness water basin resources and transform the region into a prosperous area. Elsewhere in the world, there is the Mekong Delta Authority in Asia. This authority involves several nations which lie along the Mekong River. From their experience, we can learn the

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\* Kyle, J.H. The Building of TVA: An illustrated History  
(Baton Rouge: Louisiana State University 1958)

value of multinational cooperation in regional development efforts. The Treaty for Amazon Cooperation was signed on the 3rd July, 1978, by Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela (see International Legal Materials, Vol.XVII No.5, September, 1978). The chief aim of this Treaty is to promote the overall development of the territories by and/or through which the Amazon River passes. I believe that we can learn a lot of useful lessons from these continentally famous projects.

Within Africa, similar efforts are being made. Recently, Rwanda, Burundi and Tanzania signed a treaty aiming at the joint management and development of the Kagera River Basin (The Standard, Nairobi, November 9th, 1977, p.4). The long-term purpose of the Treaty is to promote the joint development of the area's agricultural potential, of fisheries, animal husbandry and tourism. In West and Central Africa, regional development efforts include the Chad Basin Authority, Niger River Commission and Senegal Basin Development Authority (See Louis Sohn, Basic Documents of African Regional Organizations, Vol. III, New York, Dobbs Ferry, Oceana Publications, Inc. 1972). And Sudan has recently proposed the construction of the Jonglei Canal (Weekly Review, April 28, 1978, p.24) which has important implications for socio-economic development for the region.

Kenya has also had her share in the idea of development through water basin development authority. The Tana River Development Authority, <sup>was</sup> established by an act of Parliament in 1974, (The Tana River Development Authority Act 1974, No.7). So far, it is the only major regional developmental authority which is operational. The terms of reference of

this Authority are in Appendix I. The other development authority, which is still on the drawing boards, is the proposed Kerio Valley Development Authority. The proposed terms of reference of this authority are almost similar to the one of the Tana River Development Authority, and are set in Appendix II. And now there is the proposed Lake Basin Development Authority. These water basin development authorities clearly usher Kenya into a new stage of development effort, which require new perspectives and approaches as to policy and implementation.

While it is abundantly clear that there is a need for regional development based on water resources, it is not equally clear how to approach such a development. From a careful examination of the terms of reference of the Tana River Development Authority as well as of the Kerio Valley Development Authority, it appears as if there are bureaucratic steps through which the development authorities must go before effecting any decisions. Moreover, it seems as if there are far too many Ministries involved in the operational aspects of these development projects. No doubt, the existence of such factors will cause inefficiencies and unnecessary delays in the execution of decisions. The best approach is to give responsibility and mandate to the development authority to make and immediately execute decisions, without unnecessary interference from government Ministeries.

Such an approach has several advantages. First, it enables the authority to engage in immediate and long-term



planning for the region. Secondly, it gives the authority the ability to work out a systematic development programme for the area. A good systematic plan avoids haphazard and ad hoc decisions. Thirdly, it enables the plan programmes to be less vulnerable to the whims of political changes and thus ensures some modicum of permanency of development of the area. Finally, it places the development efforts in the hands of the local people, and this ensures local and grassroots participation in the development process. For these reasons, there is a need for as much autonomy as possible for the development authorities.

This autonomy does not mean that the authorities would be completely independent of operational Ministries within the Government. Nor does it imply that the Government would not control the operations of the Authority in question. Rather, the argument here is for efficiency, unnecessary delays in executions of decisions, and grassroots economic and social participation.

From the foregoing, it is clear that development along a water basin is an idea whose time has come. What is needed is a set of corresponding concepts to transform the idea into reality.

### III. THE COMPREHENSIVE AND INTEGRATED PLANNING APPROACH

This paper argues that the most effective approach to the development of the area is the comprehensive and integrated planning approach. For purposes of clarity in

exposition, these terms need to be defined.

By development planning I mean a conscious effort made by any government to pursue a definite pattern of economic development in order to promote rapid and fundamental change in the economy and society. It is clear that planning, as thus defined, is a fairly broad concept which seeks to promote a fast rate of growth as well as influence significant structural socio-economic changes through government intervention.

A regional development plan is comprehensive if it sets its targets to cover all major aspects of the regional economy. It is partial if it covers only a part of the regional economy - industry, agriculture, the public sector and so forth.

An integrated regional development is a broad spectrum of development activities encompassing the simultaneous fostering of different aspects of progress; improvement of levels of living (incomes, employment, education, health and nutrition, housing and other social services) for the people in the region, reducing inequality in the distribution of regional incomes and economic opportunities; and the capacity of the region to sustain and accelerate the pace of these improvements over time.

I believe that a comprehensive and integrated planning is required for the development of the Lake basin.

Such planning has several advantages. First, it leads to the socially optimal allocation of resources in the long-run. This optimal allocation cannot be achieved by private

investors who are mainly interested in the short-run profit maximization. Second, rapid economic transformation would be retarded if necessary institutional and structural reforms were not carried out simultaneously. Planning achieves the necessary institutional reforms to allow for more rapid transformation. Third, planning may exert some psychological impact upon the people in the region and this impact is conducive to the attainment of the a higher standard of living. Finally, overall planning mechanism promotes the utilization of the scarce resources in the most productive way in all different sectors and subsectors of the region.

The next issue pertains to the role of government in the development plan. Government participation fundamentally affects the nature and character of the various development projects within the plan. Several types of planning do exist, and their analyses may help us in the examination of our subject. There is the totalitarian planning in which the state owns all the means of production. Here, the degree of state intervention is the highest. At the other extreme, the state does not own all the means of production. Planning here takes place through inducement rather than through control, and it is called indicative planning. In between these two extremes are cases of mixed planning where both the public and the private sector operate side by side. For the Lake Basin Authority, the question of Government participation is fundamental in the sense that the region has been a neglected area for a very long time. The Government may well decide to commit its increased resources to rectify the past weaknesses. This calls for as much state intervention as is necessary for the development of the region.

Planning horizons can vary considerably. There is the

short-term planning which would last up to one or two years, while medium-term planning would last for three to five. Perspective plans may last for twenty years. Emergency plans are drawn up for a short period to deal with specific problems arising from emergency situations.

The considerations of planning horizons raise the question: Will the regional development plan be viewed in terms of short-term, medium-term or perspective? It seems to me that we need all these plans: short-term, medium-term, perspective, and emergency. The region has problems which call for all these planning types. In the long-run, however, we need to have mainly medium and long-term planning.

Planning may also be viewed as a system of activities comprising of five interdependent phases. These phases indicate the sequence of decisions that must be undertaken in the planning process. We need to consider all of them in detail in the process. They are as follows:

1. End-planning is concerned with what is wanted: the design of a desired future. This requires specifying goals, objectives, and ideals, short-run, intermediate, and ultimate ends. This item calls for careful selection of specific goals and objectives to be attained. It also calls into attention the significance of the time factor in goal attainment.
2. Means planning deals with the question of how to get there. This requires selecting or inventing courses of action, practices, programmes, and policies. It is important to design clearly the methods to be applied

when making efforts to reach the goal. What methods and programmes will get us there most efficiently?

3. Resource planning examines what types of resources and how much of each will be required, how they are to be acquired or generated, and how they are to be allocated to activities once they are available. This question is to be dealt with later, but it is a fundamental one in the whole subject.
4. Organisational planning determines organisational requirements and designing organisational arrangements and the management system that will make it possible to follow the prescribed means effectively. The matter is not dealt with in this discussion. But I have argued earlier that we need an autonomous authority which will have the powers to make and execute decisions without undue hindrance from bureaucratic procedures and practices. Furthermore, in order to effect efficiency in the operations, we need a decentralized decision-making units in a simplified organisational arrangements and management system.
5. Implementation and Control planning deal with the question of how to implement decisions and control them. In addition, they deal with the problem of how to maintain and improve the plan under changing internal and external conditions. This matter will be discussed later.

IV. BASIC INFORMATION REQUIRED FOR COMPREHENSIVE AND INTEGRATED PLANNING

The application of the planning concepts as outlined above to the development of the Lake Victoria Basin requires specific knowledge about the region. Such knowledge is absolutely essential to planning because it provides the planner with the necessary raw materials which form the basis of decisions. It is to be emphasized here that the most important part of the basin is the water system in the region. However, since we are considering comprehensive and integrated planning, inclusion of other related areas is in order. The following is a set of specific knowledge needed.

1. Definition of the Lake Victoria Basin:
  - (a) What area does the basin cover? This question is crucial. Those adopting a comprehensive definition may consider the region as bounded by Mt. Elgon, the Cherangani Hills, the Western Mau and the Loita Hills. This area covers 46,000 square kilometres or 8 per cent of the land area in Kenya.
  - (b) What is the rationale for the definition offered? Some people limit the Lake Basin to those areas immediately surrounding the Lake: other people widen their definition as above.

It is important to note that the definition of the basin confines the region to be analysed, and for purpose of planning, this point is crucial. The definition could confine the basin to Nyanza Province only, or it could embrace Nyanza, Western and the Rift Valley Provinces.

2. Demographic considerations:

- (a) How many people live in the region? If the region is defined comprehensively, then there is an estimated 6.2 million people who live in the Lake Victoria catchment area; this population comprises 40 per cent of the total Kenyan population. On the other hand, if the definition is limited to a region immediately surrounding the Lake, then there are about 3 million people.
- (b) What is their age, sex, ethnic, and racial compositions? Detailed analyses of these areas are required.
- (c) What is the population density in the region? Some areas within the region are extremely heavily populated. The Kisii, Maragoli and some places in South Nyanza are very highly populated. Some regions are sparsely populated.

Since planning is for the welfare of the people, considerations of the above questions enables the planner to plan more effectively for the different kinds of dwellers in the region.

3. Ecological Zone of the region:

During the decade of the 1960s, it appeared as if the climate and the weather in the region were changing. More rains seemed to be pouring over the region throughout the year. But the current weather and rainfall patterns are different. If this observation is correct, then one may wish to know:

- (a) What kinds of weather and climate changes have occurred recently, and what do we expect in the future about these?
- (b) What are the consequences of the changing weather pattern to the region?

4. Resources of the region:

- (i) Water resources: This is fundamental to the development of the region. Since water is the key factor in this inquiry, it is necessary to acquire knowledge concerning the inflow and outflow of water into and out-of the Lake.

More specifically:

- How much water empties into the Lake daily, monthly and yearly? I understand that the Ministries of Agriculture and Water Development have made such calculations. Such information should be made available to the planners for use.



are  
- Which/the biggest rivers draining into the Lake?

A comprehensive definition of the area would consider the following rivers: Malawa, Nzoia, Yala, Nyando, Sondu, Migori, and Miriu. But this definition does not consider other important rivers in the region such as Kuja, Awach, and another Awach.

- How much water flows out of the Lake?

- What are the consequences of these to the level of the Lake?

- In the 1960s, it was clearly observed that the Lake water level was rising and hence overflooding the surrounding shore areas, thereby claiming more land areas. What brought about this? How much land has been "eaten" by the Lake water recently?

(ii) Water Resources: Fish

Lake Victoria is famed for its fresh-water fishes. Generations and generations of the Lake shore dwellers have lived on fish as their staple food. Recently, however, there have been complaints by the people around the Lake that certain types of fish are disappearing, that the big fish ("Nyamami") have eaten all the small ones, especially tilapia ("Ngege"), and that fish is becoming increasingly scarce in the region. These issues call for considerations concerning:

- (a) How many types of fish are there in the Lake and the surrounding rivers?
- (b) In what quantities?
- (c) What is the trend of the fish population?
- (d) Where do these fishes come from - from Ugandan, Tanzanian or Kenyan side of the Lake?

(iii) Water Resources: Other resources.

Apart from fish, what other resources are there within the Lake? And in what quantities?

(iv) Resources surrounding the Lake shore:

What kinds of natural resources, and in what quantities, surround the Lake shore?

The main concern here is with:

- the types of soils at the shore and their potential use; and
- the forestry and other natural vegetations;

(v) Resources in the Basin area:

Depending on the area covered by the definition of the Lake Basin, most of the major resources include:

- Agricultural resources. These embrace the following products: rice, cotton, maize, millet, wheat, cassava, potatoes, sisal, sugar, tomatoes, vegetables, oranges, coffee, pyrethrum. The question here is: how much of each of these crops are produced in the region? What types of the products are comprised of each? What is the nature of distribution of each crop within the region?

It is important to note that in terms of national production, the following crops, grown in the catchment area during 1977, were estimated constitute the following percentages:

Maize	-	53%
Wheat	-	45%
Rice	-	10%
Sugar-cane	-	97%
Bananas	-	32%
Tea	-	32%
Coffee	-	25%

These data indicate the significance of the area to agricultural production of Kenya.

- Animal resources: In these region, different kinds of animals are kept : cattle, sheep goats, being the most common ones. The question is: How many of each of these animals are there in the region, and in what localities within the area? What types of animals are they? There are pieces of information on the animal resources. For example,

There is 4.8 million cattle of which 500,000 are grade and 3.1 million small stock. These data do not answer the questions raised above.

These issues have centred largely on the question of resource endowments of the Lake Basin area. They are important questions, and the picture of the economic potentialities of the region.

But resources have to be transformed into actual products to fulfil the human needs. Therefore, it is important also to consider other factors that facilitate the exploitation of these resources. Without them, the natural endowments would remain idle. Hence, it is necessary to explore the degree and extent of the existence of these other factors.

5. Infrastructure:

The existence of the communications network determines to a large extent the degree by which the resources can be explored. Roads, railways, waterways, airways, telephones are absolutely necessary for the efficient production and distribution of the region within and outside the region. Hence, it is necessary to know:

- (a) What roads, railways, waterways, telephones, airways, and other means of communications exist in the area?
- (b) In which quality and quantity?
- (c) How are these distributed in the area?

6. Financial and Credit Institutions.

The actual exploitation of the resources depends a great deal on the availability of the funds which could be used to buy factor inputs such as machines and equipments, labour inputs, and land including office space. Therefore, it is necessary to know:

- (a) How many banks there are in the region?
- (b) What kinds of banks are they?
- (c) What other credit and financial institutions exist in the area?

7. Patterns of Trade:

Trade does play a major role in the overall development of the resources. Where there are lucrative markets for products, there will be vigorous and energetic efforts to increase the production of the traded goods. Where markets do not exist, there will be a concomitant relaxation of production. Therefore, we need to know something about the nature of markets in the area.

- (a) What does the region produce and consume internally? What is the nature of the internal markets?
- (b) What does the region export to other regions and to foreign countries? And in what quantities?

- (c) What does the region import from the rest of Kenya and from abroad? And in what quantities?

Institutions for Human Resource Development:

Human skills play a most important role in resource exploitation. These skills are usually acquired formally through education and training. Formal education does provide people with the capacity to absorb knowledge, but informed education equips people with specialized skills. Both are needed for resource exploitation. Therefore, the development of the area is limited only by the extent of the available human skills. Consequently, it is important to know:

- (a) How many primary, secondary, and Teacher Training Colleges are there in the area?
- (b) How many students attend these institutions:
- Colleges of Science and Technology?
  - specialized institutions?

9. Health and Medical Facilities:

A healthy population is necessary for development. People who are healthy are not only more productive than the sickly ones, but they are also more creative and energetic. It is important therefore to know what health and medical facilities exist in the area:

- (a) What are the major diseases in the region?
- (b) How many hospitals and other health facilities are there in the region?
- (c) How many doctors, nurses, and hospital assistants are there? What is their professional composition?
- (d) How are these medical personnel distributed within the area?

10. Industrial Establishment and Distribution:

It is important to know what industries do exist in the region. This knowledge forms the basis of decision on what industries to strengthen or add. Therefore, the following questions are necessary to address ourselves to:

- (a) What kinds of industries are there in the region?
- (b) Who owns these industries?
- (c) What proportions of raw materials based industries are there?

11. Employment in the Region:

Any development effort must concern itself as much as possible with the development of the people.

After all, development itself is meaningless unless it aimed at improving the living standards of the people. Employment generation is the most important consideration in any development effort. As a starting point, it is necessary to know:

- (a) What the major industries employing most people in the area?
- (b) What is the proportion of wage/non-wage employment in the area?
- (c) What is the rate and level of unemployment in the region?
- (d) What are the patterns of migration within the region and outside it?
  - rural-rural
  - rural-urban
  - urban-rural
  - urban-urban.

12. Facilities for Tourist Attraction:

Tourism is needed because it increase the demand for the local natural resources and products. It therefore brings external money into the area. But tourist have to be attracted through several means. Hence the need to know what facilities exist for tourists:



- (a) What tourist attraction sites have been developed in the area?
- (b) What hotel and other accommodation arrangements are there for the tourists?
- (c) What is the level and nature of tourists to the region?

V. FRAME-WORK OF DECISION

Knowledge of the existence of resources alone does not constitute the development of those resources per se. What is required is the transformation of those resources into tangible goods and services which satisfy the needs. But it is not possible to tackle all the development problems at once and simultaneously. We do not have enough resources to do that. Therefore, the sensible approach is to be selective and to deal comprehensively only with the most important issues. The following is a list of important considerations.

- (i) Development of Resources:
  - (1) What resources in the region are to be developed?
  - (2) Which ones are to be given priority?
  - (3) How are these resources to be developed?
  - (4) What is the time frame for this development?

(ii) Development of Human resources:

- (1) What institutions should be developed for the purpose of developing the resources?
- (2) What specific skills should be developed for utilization in which industries?
- (3) How are these skills to be developed: Through practical or academic (or both) training?
- (4) What is the time frame within which to develop them?

(iii) Development of Fisheries:

- (1) What types of fish to develop;
- (2) How are these to be developed?
- (3) What resources are required for this?
- (4) What markets are to be developed internally and externally for the fish products?

(iv) Development of the Infrastructure:

- (a) Which roads are to be improved or built: and where?
- (b) When are the railways extensions to be made?
- (c) What new waterways are to be established?
- (d) Is the Kenya Airways going to extend its regular

services to the Western area of Kenya? When?

(e) Other forms of infrastructure: telephones and the posts and telecommunications.

(v) Development of agriculture:

(a) What agricultural crops are to be developed first: cash-crops or food-crops?

(b) How are these crops to be developed?

(c) What internal and external markets are to be cultivated for the agricultural products?

(vi) Development of Mineral Resources:

(a) Which mineral resources are to be developed?

(b) How are these to be developed?

- through private individuals

- through government machinery?

(vii) Financial and Credit Facilities:

What programmes are there to strengthen the existing financial and credit facilities or to create new ones in order to promote the regional development programmes?

VI. PLAN IMPLEMENTATION

1. Monitoring the fulfilment of the plan objectives:

(a) Who takes the responsibility to see that the plan is implemented?

(b) Who retains the final responsibility for the overall development of the region?

2. Creation of a permanent body which will see to it that plan objectives are attained regardless of political changes or differences in political views in the country and the region.

(a) How can that be done?

(b) What machinery is to be developed to ensure that the development of the basin remains as much apolitical as possible?

VII. LIMITATIONS OF THE PLANNING APPROACH TO REGIONAL WATER BASIN DEVELOPMENT

Although planning approach is considered the best approach, it has several weaknesses. These weaknesses may cause problems to the development itself. The following are problem areas which need careful thought:

(1) The Multidisciplinary Approach to Development Planning:

The development planning, as we have outlined above, is a purely economic exercise. It does not consider other equally important disciplines. For example, the process of developing a region may carry with it social changes in social attitudes and relationships which may themselves be considered detrimental to the healthy existence of the very society. What do economists know about social change? What about cultural changes emanating from regional development? Clearly, the need for a planning team comprised of economists, engineers, sociologists, health officers, lawyers political scientists is a necessity. Economists alone cannot do it effectively.

2. Political Consequences:

The comprehensive and integrated regional development plan incurs the shifting of scarce resources from one use to another, and from one sub-region to another. What are the likely consequences of these resource use and shifts? Again, there are problems of political jealousies among the politicians; these may emanate from the successes of the development projects. What do we know about the consequences of political battles to the healthy existence of the development efforts?

3. Adverse Environmental Effects:

It is quite possible for a regional development effort to have an adverse effects on the region. For example, the Jonglei Canal in Sudan is being opposed by environmentalists because they believe that the project will have an adverse environmental effects in the region. (see The Weekly Review, April 28, 1978, p.24). What ecological and other environmental con-

sequences will the region have as a result of comprehensive and integrated development plan?

4. External Adverse Consequences Emanating From the Development Plan Itself:

The success of the development project itself may cause various problems that were never foreseen at the time of drawing the plan. Or they may have been seen, but were ignored as being inconsequential. These external factors, considered before or not, may be detrimental to the society itself and may outweigh the benefits gained through the successes of the plan. Several examples of such cases abound. For example, the Kenya fisheries authorities introduced "Nyamamis" (the "Nile perch") into the Lake Victoria in 1960's. They were introduced because they are said to multiply faster and are bigger. And indeed they did multiply. As a result of this action, the small fishes have disappeared from the Lake. Rumours have it that these "Nyamamis" have eaten the small fishes out of existence. Rumours also have it that the Fisheries Department is now introducing some more crocodiles into the Lake to eat the "Nyamamis" so as to enable the small fishes to increase in the Lake.

Another example is the success of the Aswan Dam. This dam has indeed succeeded in helping Egypt irrigate its dry lands. But it has also caused serious problems for Egypt. First, it has reduced drastically the number of fish to be consumed in Egypt. This is because the

Dam withholds all the necessary food for fish. Secondly, all the soil that was needed for brick-making has also been withheld in the Dam. As a result, there is a serious shortage of bricks in Egypt. Thirdly, the Lake Nasser made by the Dam has been overflowing its banks, thereby covering the railroads passing by the Dam. This has implied re-building of the railroad. Finally, the waters of the River Nile and of the Mediterranean Sea have been eating into the land increasingly because the silts which used to prevent this have been retained by the Aswan Dam. These are serious adverse consequences for the society.

What adverse effects are there likely to be as a result of the success of the Lake Basin development?

5. The Need for Cooperation from the Surrounding Countries:

It is important to involve other surrounding Countries in the regional development of the Lake Basin. Tanzania and Uganda should be involved in some way. For example, Tanzania is now considering to build an irrigation scheme in Central Tanzania. What likely effects is this scheme likely to have on the development of the Lake Basin? Furthermore, the Mara River empties into <sup>the</sup> Lake on the Tanzanian side, while one of the major rivers in the Lake Basin empties into Lake Kyoga in Uganda and thence into the White Nile. This means that decisions made on the use of these rivers will affect all the three countries. Moreover, the Lake fishes migrate from one region to another, without considering territorial limits. For these reasons, it appears as if it is necessary to have some cooperative agreements

with these surrounding territories.

#### VIII. CONCLUSION

The idea of development through a water basin is the idea whose time has come. But requires new approaches in its application to tangible economic realities. The best approach is the regional comprehensive and integrated development planning which has short-term, medium-term, perspective, and emergency horizons. Such kinds of planning require detailed information about the area and its resources. Without such knowledge, meaningful planning cannot exist. Since it is impossible to implement all the various objectives at the same time, it is necessary to select some major areas for consideration. Such selections must be systematic and thorough. Plan implementation must be considered in detail. This is to ensure that the plan objectives are attained. Development plan failures and other external adverse effects must be considered during the planning process.

In the whole exercise, the emphasis is placed in the need for autonomy of the Development Authority. Such an autonomy will lead to efficiency, greater mass participation, and immediate plan implementation. All these factors are necessary for the success of the plan.



The other important consideration is the degree of Government involvement in the whole development process in the region. It is my considered opinion that the Government should be involved in the scheme fully in order to remedy the poverty situation in much of the region. The region has been a much neglected area, and only massive Governmental aid can rectify the situation.

APPENDIX I

TANA RIVER DEVELOPMENT AUTHORITY:

This Authority was set up by the Tana River Development Authority Act 1974, No.7. The initial team composition was:-

Executive Chairman  
Team Leader  
Water Resource Engineer  
Hydrologist  
Agriculturalist  
Agricultural Economist  
Ecologist (Sociologist)

The terms of reference for the TRDA are:-

- (a) to advise the Government generally and the Ministries of Economic Planning, Agriculture, Natural Resources and Power in particular on all matters affecting the development of the area including the apportionment of water resources,
- (b) to draw up, and keep up-to-date, a long-range development plan for the Area;
- (c) to initiate such studies, and to carry out such surveys of the Area as it may consider necessary, and to assess alternative demands within the Area on the resources thereof, including electric power generation, irrigation, wildlife, land and other resources, and to recommend economic priorities,

- (d) to co-ordinate the various studies of, and schemes within, the Area so that human, water, animal, land and other resources are utilized to the best advantage, and to monitor the design and execution of planned projects within the area,
- (e) to effect a programme of monitoring of the performance of projects within the Area so as to improve such performance and establish responsibility therefor, and to improve future planning;
- (f) to ensure close co-operation between all agencies concerned with the abstraction and use of water within the Area in the setting up of effective monitoring of such abstraction and use,
- (g) to collect, assemble and correlate all such data related to the use of water and other resources within the Area as may be necessary for the efficient forward planning of the Area,
- (h) to maintain a liaison between the Government, the private sector and foreign agencies in the matter of the development of the Area with a view to limiting the duplication of effort and to assuring the best use of technical resources,
- (i) render assistance to operating agencies in their applications for loan funds if required.

APPENDIX II.

ESTABLISHING AN AGENCY FOR KERIO VALLEY DEVELOPMENT:

The establishment of a suitable organisation to more fully develop the potential of the valley and to tackle the constraints as outlined above is made easier by the precedent of the Tana River Development Authority (TRDA). As mentioned in the introduction a smaller catchment may prove to be better served by a Development Authority and the original terms of reference for the T.R.D.A. may be as applicable if not more so to a Kerio Valley Development Authority (KVDA).

A. Terms of Reference:

Based on the terms of reference of T.R.D.A. which are at Appendix I but modified by experiences and changes since then, draft terms of reference for a K.V.D.A. are set out below:-

- (i) to advise the Government generally and the Ministries of Economic Planning, Water Development, Agriculture, Natural Resources and Power in particular on all matters affecting the development of the Area including the apportionment of water;
- (ii) to develop and keep up to date a long range development plan for the area in consultation with Government Departments dealing with the Arid and Semi-Arid land Development Programme and the National Master Water Plan.

- (iii) to initiate such studies either technical, economic or social and to carry out such surveys of the Area as may be considered necessary by Government or itself, and to as alternative demands within the Area on the resources thereof including irrigation, electric power generation, mining, wildlife, land and other resources, and to recommend economic priorities;
- (iv) to co-ordinate the various studies of, and schemes within, the Area so that human, water, animal, land and other resources are utilized to the best advantage, and to monitor the design and execution of planned projects within the Area;
- (v) to effect a programme of both monitoring and evaluation of the performance of projects within the Area so as to improve such performance and establish responsibility therefor and to improve future planning;
- (vi) to ensure close co-operation between all agencies concerned with the abstraction and use of water within the Area in the setting up of effective monitoring of such abstraction and usage;
- (vii) to identify, collect, collate and correlate all such data related to the use of water and other resources and also economic and related activities within the Areas as may be necessary for the efficient forward planning of the Area;
- (viii) to maintain a liaison between the Government, the private sector and other interested agencies in the matter of development of the Area with a view to limiting the duplication of effort and to assuring the best use of technical resources;

- (i) render assistance to operating agencies in their applications for loan funds if required.

B. Membership of Authority:

It is proposed that K.V.D.A. be established with the following members of the Authority:-

P.S. Planning (VI)  
P.S. Water Development  
P.S. Agriculture  
P.S. Natural Resources  
P.S. Power and Communication  
P.S. Works  
P.C. Rift Valley (V)  
Representative of Chairman of local authorities  
2 representatives of private industry  
1 representative of financial institutions  
Executive Director

The members would be expected to ensure that the terms of reference given to the Executive Director with professional team supporting him would be carried out and that major decisions would be taken by the members regarding planning and investing in the Kerio Valley.

In addition it may be necessary to constitute an executive committee composed of the Director the team leader, the District Commissioners, representatives of Key Ministries and representatives of the District Development Committees. While the members of the Authority would establish policy, this committee will be the main channel for linking with local participation and technical expertise.

C. Composition of Team of Professionals:

In order to carry out this work a team of professionals will need to be established. There are many disciplines involved but some can be served by specialist consultants while others will require permanent members of the team. A first tentative list of team members under an Executive Director is:-

1. Team Leader/Regional Planner
2. Water Resource Engineer
3. Resource/Agricultural Economist
4. Hydrologist
5. Irrigation Agronomist
6. Civil Engineer
7. Soil Specialist
8. Geologist

The list could easily be added to, for instance an ecologist, a sociologist, livestock specialist etc.

Composition of the Executive Committee

In order to carry out the work of the Executive Committee, it is necessary to have a certain number of members. These members should be chosen from among the members of the organization who are active in the work of the organization and who are capable of carrying out the work of the Executive Committee.

The Executive Committee should consist of the following members:

Chairman

Secretary

Treasurer

Members-at-Large

Members-at-Large

Members-at-Large

Members-at-Large

The Executive Committee should be elected by the members of the organization at a general meeting.

The Executive Committee should meet at least once a month.