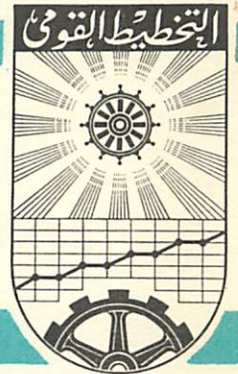


UNITED ARAB REPUBLIC

THE INSTITUTE OF NATIONAL PLANNING

6/17/63



Memo. No. 338

REGIONAL ECONOMIC PLANNING

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9th June, 1963

Index

<u>Subject</u>	<u>Page</u>
1. What is regional planning	1
2. Regional planning in advanced and under developed countries	2
3. Integration of regional and national plans	4
4. Basic problems of regions in the process of economic development.	7
a. Legal development agencies	8
b. Administrative operation of regional economic development agencies	12
c. Financial problems.	13
5. Designing and administering a regional economic plan.	14
a. Importance of practical planning	14
b. Characteristics of a practical planner.	15
c. Designing a regional economic plan.	21
A. Administering regional develop ment plans in U.A.R.	30
6. Industrialization of under developed regions.	32
7. Techniques of regional analysis.	38

1- What is regional planning ?

Regional planning is one of three dimensions which must be taken into consideration by the plan makers in planning for the development of resources in a country for the sake of reducing inequalities which may exist between its various regions. Thus regional planning is a dimension of planning which takes into consideration space and location factors.

Besides space and location dimension in planning the two other dimensions which a plan-maker considers in planning are the time dimension and the size of development dimension.

The importance of the time dimension stems from the fact that both short-term and long-term objectives of the plan compete simultaneously for existing resources. Such competition needs from the plan-maker to allocate these resources properly with regard to time. Besides, achievement of development with the help of applying new technology increases the time lag between decision-making and the maturity of investment.

The size of the development effort is the factor which determines the speed and intensity of the national development. Material⁽¹⁾ and non-material incentives are important considerations in this respect.

(1) population growth, natural endowment of resources, institutional set-up for management and development, level of labour and capital productivity, possible re-adjustments in consumption patterns.

2. Regional planning in advanced and under developed countries

The context of regional planning differs according to the stage of development a country has achieved.

In advanced countries there was no need for regional planning before the existence of federal and central governments in these countries. Before that time, local governments in states, countries, cities and districts used to be independent jurisdictions socially, financially and in developmental fields. This system of decentralized authority served its purpose well until federal and central governments came into existence. When federal governments started to rule they extended their national policies related to defence, financial management and foreign policies to the various regions of the countries. The result of federal actions was reflected in the form of advantages in some regions and disadvantages in others and so inequalities between various regions came into the picture in front of the planners.

Besides federal effects, the development of the transport system between various regions combined with the obsolescence of old industries in some highly urbanized areas led to the escape of investments from these areas to new centers. Such development was reflected in old areas in the form of poverty and unemployment and in the form of gold rush prosperity in the new centers. Accordingly the need for local decision mechanism both in old and new areas became necessary.

Thus the need for regional planning in advanced countries came to be considered an urgent problem both in national policies and in regional development efforts as a result of inequalities caused by central administration and developments of some economic conditions.

In underdeveloped countries regional planning is needed to overcome the administrative difficulties in the implementation stage of the plan to meet the local requirements. Decentralization of the planning process is important in underdeveloped countries because the development movement in such countries is normally guided by public action and hence is heavily biased by the central machinery in the capital.

In poor countries inequalities in development potential of different regions can be a serious problem especially if there are political, cultural, ethetical or social differences between different regions.

However and inspite of these differences regional plans are required in both advanced and underdeveloped countries to obtain a better fitting between local authority structures and development activities motivated mainly by technological and external effects. Conflicts between regions in planning or between regions and the nation as a whole must be solved through suitable procedures.

In both advanced and underdeveloped countries regional plans, aiming at the reduction of inequalities between various regions, have a cost in the short term, which must be paid by the whole community. This social cost is considered to be necessary as a price for internal peace and social cohesion.

3. Integration of regional and national plans

Integration of regional and national plans is necessary for planning analytical purposes. The importance of this point can be seen clearly when the regional authorities, for example, decides on the size of a plant to be constructed in a certain region. In taking such a decision regional plan-makers naturally must think of the economics of large scale production. Unless the economic development plan of the country and of each of its regions allows bigger demand on the products of this regional plant the choice of a smaller size for the plant which just depends on regional demand will not be economically efficient and costs of production will not be feasible. This means that the greater precision in estimating markets which results from a consistent set of economic development plans of a national state and of each of its regions is very advantageous in achieving lowest Unit-cost operations and in conserving capital.

The previous example points out the desirable results which flow from the integration of national and regional planning. Still another aspect of the desirability of integrating regional and national planning may be seen from the stand point of the national state.

It relates to the choices the state must make in allocating scarce capital and resources among regions and projects. For example, a multi-purpose river valley development may promise tremendous gains, yet it clearly involves government investment regardless of the river valley and region considered. So do more modest undertakings involving the construction of dams for irrigation and electric generation. And even a plant necessary to make the cement for the construction of dams and other public facilities may depend on government expenditures.

The possibilities for such enterprises in the numerous producing sectors of an economy and in the several regions of the nation are many. The government must not only select from among different types of undertakings. It must also select among locations and plans and thus regions for these development projects on the basis perhaps of agreed-upon methods and procedures of estimating social and economic benefits and costs of all sorts. To do this effectively, national state economic development plans and programmes must heavily rely on the details of regional economic development plans and programmes. Where adequate regional economic development plans and programmes are lacking, the likelihood of success of national economic development programmes is decreased and the overall gains from national investments are reduced. Hence the nation suffers, and since each region is part of the nation in general the region suffers too.

If we look to the benefits to be gained from integrating regional and urban planning and hence national and urban planning we find that a sound economic development programme for a region where a plant is constructed—should take into account the numerous stimulating forces which will come from the new plant. Certain activities using the products of the plant directly and indirectly as inputs may agglomerate around the plant. This localization of industrial activities in turn sets in motion urbanization forces. Such forces can import further stimulus to industrialization, provided they are properly harnessed.

In addition, sound urban planning has one other positive feature. It is becoming widely recognized that for many industries a high level of urban services and an efficient urban plan are important location factors, important because they can significantly lower costs of production and distribution, and raise the productivity of various enterprises. In this way far-sighted urban planning can provide major stimulus to economic growth and increases in welfare.

These statements coupled with the fact that according to best estimates the urbanization process absorbs for social overhead purposes roughly 25-30 percent of all national capital investment and roughly another 20-25 percent for housing make crystal clear the importance of wise urban planning in both regional and national economic development programmes.

Other elements involving the interrelation of national, regional and urban programmes are significant to the economic growth process. People live in specific localities. In these localities most of them find their incentives. A small number are also motivated in terms of and by the larger regional community and find additional incentives in the social, economic and political structure of that community. And a very few, relatively speaking, have still broader contacts, their behaviour is conditioned by forces and processes related to the national state. Sound economic development plans and programmes involve productive contributions from people in each of these categories and thus involve the proper motivation of people with all different kinds of perspectives and horizons.

4- Basic problems of regions in the
process of economic development.

Comprehensive and efficient schemes of regional economic development must involve co-ordinating complementary actions embracing all the activities of the region in all economic, social, demographic and human fields.

This global approach means that the agencies responsible for economic development must have

- 1) an appropriate legal structure during the preparatory period and during the implementation of the scheme.
- 2) rationally organized executive services.
- 3) special methods of financing.

a) Legal structures of regional economic
development agencies

Studies⁽¹⁾ during the preparatory period of the plan can be made by commissions which can be established for this purpose. These commissions can set up working parties to examine the different aspects of the problem or call in the services of expert or specialized firms of consultants.

These commissions may be official boards appointed by the public authorities, or free associations of citizens having no particular legal form.

They usually draw up reports which propose ways and means of dealing with the problems arising, and prepare the way for the creation of agencies to put the plan into practice.

(1) Such studies involve :-

a) an analysis of the constituent elements of the region, its demographic, economic and social situation and the problems arising there from

b) drawing up a plan indicating the objectives and main lines of action.

c) programmes for carrying out the plan by stages according to an order of priority.

d) technical and economic projects for implementing these programmes.

Besides commissions, study companies in the form of private or commercial companies can be set up to work out these plans and programmes and to establish technical projects for the works to be carried out.

According to the results of their studies and the consequent division of labour, these companies will either be wound up or will be converted into permanent executive bodies. In this case such companies will acquire rights over the plans and projects prepared by them in return for taking over the expenditure committed for this purpose.

Execution of the plan requires the formation of the bodies responsible for carrying out the plan. Here distinction must be made between economic development works undertaken as part of a single major project⁽²⁾ and economic development works consisting of a large number of projects and activities in various fields.

(1) Formed under the civil law.

(2) such as improvement of a river and river basin, or improvement of a large scale irrigation and land development system.

When the economic development of a region is based on a major work⁽¹⁾, the general economic development of the region must be in the hands of the body responsible for this major work in order to maintain a permanent relation between technical investments and their economic exploitation and to modify these two factors flexibly according to the lessons of day-to-day experience. Also to avoid too great disparity between the scale of the works and the use to which they are put i.e. to save intermediate charges and ensure full employment and maximum profitability of technical investments.

The nature of this single body responsible for the general economic development of the region differs according to needs and also according to the spirit of the laws and customs of each country. This body can be the state, a state institution⁽²⁾ a mixed company⁽³⁾, a body set up by an association of local authorities or individuals according to regulations periscribed by law and made responsible for the execution and management of improvement works by a

(1) A major work which has an influence in moulding the future of the region that the entire development plan is conceived and carried out around that work.

(2) independantly administered and financed, but managed by government officials under a special decision of the government.

(3) A combination of representatives of the state and local authorities together with private representatives.

government decision, or by a private company which holds a concession⁽¹⁾ granted by the state or some other public authority. In most cases, this system implies that ownership of the development works shall revert to the state on expiry of the concession.

When the economic development of the region is based on a large number of different activities scattered over various fields of economic and social activities the agency responsible for economic development must not be an executive body but a co-ordinating one. Its function now must concentrate on bringing together the various projects and activities which contribute to economic development. Such co-ordinating bodies can be co-ordinating institutions,⁽²⁾ management boards⁽³⁾ or co-ordinating committees⁽⁴⁾ for economic development.

(1) the concession implies the existence of specifications and conditions which lay down the main lines for the execution of the plan, such as the concession holder's obligations towards the government and the conditions for governmental intervention in the preparation, use and future ownership of the development works.

(2) Whose functions are to draw up the programme of action, to make sure that it is carried out by various competent bodies and to administer the budget and finance various activities carried out by executive bodies.

(3) Whose functions are, the proposition of plans and programmes for government approval, and to supervise execution.

(4) Its function is merely consultative.

It seems that the first formula is the only suitable one for quickly and effectively carrying out the work of economic development.

2. Administrative operation of regional economic development agencies

Economic development, in whatever form it is applied necessarily involves three distinct kinds of problems technical problems, economic problems, administrative and financial problems.

The administrative methods applied by the agencies must necessarily be defined in relation to this fact, though they will be adopted to the special needs of each specific case.

An economic development agency consists normally of a council or board of management⁽¹⁾, a general directorate⁽²⁾ and special directorates⁽³⁾. This corresponds more particularly to the assumption of an economic development under-taking centered upon a major technical work.

(1) The board of management acts like the board of management of any public or private body.

(2) The general directorate is the body responsible for carrying out the decisions of the council

(3) Technical, economic and administrative financial directorates.

In more modest farms, it may be adapted to co-ordinating bodies which exercise their activities through various scattered economic development under-takings.

C). Financial Problems

The financing of economic development under-takings is as varied as their administrative structures.

A project carried out directly by the state or local authority is financed in the same way as any other public expenditure. The necessary allocations are included in the budget of the state or authority concerned either under a general heading or as a special item which enables allocations to be made to each development work.

In the case of an institution or agency specially set up to carry out an economic development work, the state delegates to that institution or agency are normally allowed to supervise the budget allotted for the project. They see that the budget is used in accordance with the programme to which it is allocated.

Semi-public companies which combine assistance by the state and local authorities with semi-public bodies and private interests also use both public and private capital for carrying out their objective. The registered capital is subscribed mainly out of public funds and partly from funds obtained by borrowing from private subscribers.

Where a concession is granted to a private undertaking the latter is responsible for financial arrangements under ordinary company law, but the state or other authorities may provide a guarantee or at least may guarantee dividends on loans from private subscribers contracted by the company.

Finally, where the co-ordinating body is a mere managing board which carries out a programme through various administrations and bodies, the board merely sees that the funds available to the administrations and bodies concerned are used in accordance with the general programme.

5- Designing and administrating
a regional economic
plan.

Planning for economic development is not just a process of designing programmes and projects according to logical sequences of development economics as it seems to some planners⁽¹⁾. Practical planning needs besides the understanding of logic and development economics a fair knowledge of administrative forces without which the effectiveness of any plan is normally impaired. Practicality of planning requires a practical planner. In the following pages discussion will cover some aspects of practical planning.

(1) Particularly technicians.

First, we are going to deal with the characteristics of a practical planner, then we shall deal with the problem of designing regional economic development plans and lastly, a brief treatment of the administrative problem, particularly in the U.A.R. will be given.

P. The practical planner

A practical planner, before designing a regional economic development plan must study carefully many points in order that his plan can be carried on effectively. He must ask himself the following questions and try to find an answer for each of them before he embarks on the designation of his plan.

Firstly: He must ask himself with whom he is going to deal in planning.

Secondly: He must ask himself what requirements are needed to carry his plan into operation.

Lastly: He must ask himself how he will solve the problem of conflicting forces he is going to be faced with before designing his plan.

Answers to these questions can be found in the following.

First: Personell dealing with the planner.

It is necessary for planners to recognize that whatever plans are created the ultimate decision makers with whome they are dealing are either individuals or agencies whose characteristics and personalities are normally different from each other.

If a development plan is to be put into practice one must consider the prejudices which the individual decision-makers possess. If the planner operates completely in the abstract, concentrating only on logical sequences, the plan is likely to be relegated to the waste basket or to a shelf.

In order to avoid such failure a practical planner must take into consideration certain points if he is keen that his plans can be translated into actuality. These points are as follows:-

1) He must determine the prejudices of the people with whom he is dealing. This does not mean that he must necessarily adjust his plans to meet these prejudices, but just to study them so that he becomes aware of what types of planning and objectives the individuals possessing decision-making powers are seeking. He must understand their reactions to certain types of planning and administrative operations and goals, and their attitudes towards the use of certain kinds of tools for the implementation of plans. If he proceeds in ignorance of the characteristics of the human decision-makers his plan is bound to fail.

2) He must pay particular attention to the rôle of leadership on the part of the chief Executive in formulating the objectives and the desires of people. In turn, activation of the plan will depend to a large degree upon his acceptance, interpretation and forcefulness with respect to the legislature and the people.

3) He must try to understand the nature of support to or objections against the plan and their causes. He must understand that the support which may be given to a plan sometimes may not be directed to the plan but results from the desire of some decision-makers to accomplish a particular objective which is achievable as a by-product of the plan. The endorsement of the plan from certain sectors may be just one facet of the continuous battle for political⁽¹⁾ power. The practical planner must assess the opposing forces that will receive his development plan and lay the ground, in advance for its reception either by direct contract or other means.

4) He must take into account the administrative structure of the government. He must understand the allocation of authority between the legislative and executive departments of the government. Measures which can be introduced directly by the executive require different treatment from those which require authorization by the legislature. If the legislature controls the great majority of the powers required for the introduction of a development plan, the plan must contain not only proposals to the executive but also legislative background which is required in order to make a change in the existing legislation.

(1) This happens normally wherever political conflicts exist between political parties.

5) He must consider the allocation of responsibility among the various departments of the executive agencies. Plans which cut across a variety of executive agencies and which do not contain elements of co-ordination are bound to fail. If proposals are made for a particular government agency to carry out a phase of the development plan, it is necessary that this proposal must be consistent with the general approach of that agency and in general with the objectives under which they have been operating. The development plan must also consider that there are varying degrees of quality with regard to the staff and their orientation in the different departments. The responsibility for developing the detailed plan within the frame work of a general statement may be shifted rather easily to a particular agency if it has the staff to undertake the task. On the other hand, if the staff is not oriented toward a concept of planning which is consistent with the general frame work of the development plans, it may be necessary for the central planning staff to work closely with the agency and actually share in the creation of the more detailed phases of the development of the plan than might otherwise be expected. It is extremely important that programmes and plans generated with respect to the development of a particular region consider the inter-relationship of overlapping jurisdictions of national and regional authority.

Second: Requirements to put the plan into operation

It would be useless to design a development plan which requires operational authority to articulate it if powers necessary are not available for use by the administration. Thus in a democracy a plan which calls for dictatorial powers for accomplishment is of no value. On the other hand, in sectors of the economy where social injustices may develop, plans which call for a completely laissez-faire operations will be unacceptable in a society truly dedicated to social betterment of its population.

It is necessary to create a plan which can operate within the range of the legal latitude available to the administrators. This does not mean that the laws on the books must be regarded as frozen, but rather that there is no use in generating plans and programmes which would be operative only with legal changes unlikely to occur.

The financial feasibility of any plan is important. A plan which calls for expenditures of funds in excess of the potential financial resources is of course doomed. Again this does not mean that the methods of generating financial resources must be taken as unalterable, but before recommending plans calling for increased financial resources the planner should take a hard look at the possibility of raising taxes, increasing borrowing of funds and deficit financing.

Third: The problem of conflicting objectives

In creating a development plan for a region the practical planner will soon find that there are quite a number of conflicting objectives which he must study and solve carefully before he designs his plan. These conflicting objectives are the following :-

1. The conflict created by pressures for development plans containing programmes which will show immediate results in raising the standard of living of the present generation while financial, administrative and human resources do not allow to achieve such a target in a short period. A short term plan concentrating on short-term objectives will not just fail under such conditions in achieving longer-range goals but will also fail in satisfying the shorter-range measures.

2. The conflict created from the opposition of regional objectives to national objectives. It may be in the interest of the national objectives to try sometimes to concentrate on particular areas which can most fruitfully be developed. However, if one is charged with planning the development of a particular region it may be difficult to obtain special assistance from the national government required by the area.

3. The conflict between the economic, social and physical planning objectives. For example, if one were given the opportunity to create a development plan which would have as its prime the most rapid economic growth, the type of planning, the

concentration of human, physical and economic resources available to the government would be directed somewhat differently. Later it will be shown how this conflict in the social, economic and physical objectives cause great difficulty in creating a priority system and is the principal reason why an automatic system of allocation of resources cannot be achieved.

4. The conflict between the objectives of the individual and the society as a whole. A practical planner when developing his plans must consider the degree of freedom which the society is going to allow individuals and the degree to which the government is willing to take over decision making with respect to the disposal of most of the resources.

5. Finally, there is the conflict between the relative rôles of the public and private sectors. A practical planner has to attempt to mix them in a way which results in the maximum efficiency.

C- Designing the regional economic plan

Steps required for the designation of a regional economic plan can be summed as follows

1. Resource inventories

The first step that a practical planner must take is to make a quick survey of the characteristics of the society and the economy with which he is to deal. The inventories that concern him are the natural, human and financial resources, also the market and service industry potentials.

Each regional economy and each society is endowed with a varying amount of these resources with respect to quality and quantity.

a) Natural resources:-

In the case of natural resources availability of minerals such as energy, minerals, coal, petroleum and other materials which can be used for fabrication, such as forests, ores.. etc. will partially determine the nature of potential economic development. Accessibility and conversion possibilities also must be considered. Are good hydro-electric power sites available and where are they located? Are they located far from the urban, human resources and transportation centers? What is the likely cost of these potential power developments and how long would it take to put them into operation, what type of subsidies would they require? Initially, surveys covering these resources do not have to be in great detail but merely need to provide a general idea of the possibilities of obtaining power at different levels. Next comes the resources of agriculture, which is generally one of the most important economic sectors of an underdeveloped country. There are usually available surveys of land resources, and relationships between the number of people on the land, which will enable the planner to gain at least a rough idea of the potential for agricultural development. The nature of the human resources available for the development of agriculture must also be considered.

The ability to convert the potential of agriculture into actual output frequently depends upon the nature of land tenure. If there is a considerable amount of idle land in the hands of individual owners these resources may never be put into operation unless the estates are broken up and converted into current production use. On the other hand, one of the greatest dangers to the development plan is the goal to break up land holdings into plot sizes which are far too small for efficient operation. However, such dangers can be overcome easily.

b) Human resources:

Human resources must be investigated. Investigation must cover two main aspects, the quantity and the quality of these resources.

With respect to the quantity sufficient information must be gathered about the amount of human resources which can be diverted from present uses to new occupations. The relation between wages and productivity must also be studied.⁽¹⁾

Mobility of labour from developed areas to new ones under development must be considered. Also expectations about labourers deserting their jobs in the new areas and moving towards older and more highly developed regions must be studied to evade their repercussions.

(1) If labourers wages are low the possibility for local products to be exported to competing countries is great and Vice-versa.

With respect to the quality of the human resource, educational attainment is probably the most important feature. Achievement of a level of education which is necessary for the level of productivity required to attain feasible rates of growth is necessary.

Health, too is an important element which affects the productivity of labourers. Strengthening the health of the working population must result in an increase in their productivity.

Besides, the social structure of the region must be studied too, social conditions have great effect on development plans.

c) Market resources

Market potentials to absorb goods and services which are going to be produced must be assessed. Assessment of these potentialities is important because if there is no market for the produced goods and services there becomes no need for creating a productive capacity for producing these types of goods and services.

Thus, the construction of a hydro-electric dam in an area which cannot consume the power produced or water for irrigation for many years to come, will add nothing to the economy of the region.

In considering market potentialities local and foreign consumption must be assessed. From a national point of view the economy of a country can be a closed⁽¹⁾ or an open economy,

(1) when there are trade barriers.

but in the case of regional planning-one may generally consider that the economy from a market standpoint is open and that no artificial barriers are created which tend to exclude goods of one region from another.

d) Service industries:

Another important resource the development plans may overlook, is that of the service industries which must support the growth of the economy. Thus, there may be a lack of power, telephone maintenance service etc. which will create inefficiencies in the production of the region. Also skilled personell must be considered whether to be imported or to be trained locally.

E) Financial resources:

Potential financial support available to the government and private sectors for the development of the plan must be assessed. Assessement of financial support must include available local resources and foreign funds which can be borrowed.

2. Utilization of the resource inventories
in planning.

The inventory of various resources serves two purposes for development and planning:-

1. It represents a preliminary diagnosis of the situation and enables the advisors to indicate to the decision-makers which sectors-functional and geographic-have the greatest potential for growth.

2. It enables the quantitative forecasting of growth potentials in such a way that the other three functions⁽¹⁾ of planning may be implemented with continuous guidance given to the decision-makers in an integrated planning process.

Estimation of potential growth:-

- a) The need and nature of a quantitative model of potential growth.

Actions arising out of decisions must take place sometimes in the future. The time period covered by an action resulting from a decision varies in length.

Generally the actions taken by a government, particularly with respect to the utilization of financial, natural and personal resources, cover periods varying from weeks to decades. Not only does the execution of a decision occur in the future, but so will the impact of the action on related phases of activity.

Therefore, if there is to be an effective basis for government decisions, it is necessary that the decision maker has knowledge

(1) Economic planning performs four functions :-

- (a) evaluating potentials
- (b) translating objectives into programmes
- and actions (c) choosing among alternative programmes in the light of limited resources
- (d) Co-ordination.

of the future government programmes and actions which will have an influence on the changing structure of the economy and society.

b) The basic approach to the model:-

There are two basic approaches to the building of economic and social models and projections:-

1. The first approach is to draw a picture of what is desired for future time without paying too much attention to the feasibility of achieving such an economic and social model. This approach is based on the belief that with economic and other forms of planning it is possible to accomplish most of the desired objectives. This procedure involves and attempts to find a series of incentives and programmes which will accomplish the goals.

2. The second approach is not to start from a priori picture of the end result but to analyze the developments which have been occurring and to estimate the potentials of growth which are likely to exist. The incentive programmes are then tailored to fit the present and foreseen circumstances. They are used to foster the probable developments which are considered more desirable. If the economic and social projections reveal developments likely to occur, but which are not considered desirable, then an analysis of forces which are required to alter the course of development must be developed.

Once this is known, the programmes and incentives to accomplish this alternation can be brought to bear on the future progress of the economy.

The weakness of the first method is that it requires, for purposes of implementation, more authority than is generally possessed by a government.

It tends to generate claims on scarce resources far in excess on the available supplies. The result may be a misallocation of scarce resources to the point where inefficiency and loss of output may occur. In addition, confusion tends to prevail if the desired goals become accepted as a forecast and if hopes fail to materlize. Decisions are then made on the basis of fictitious possibilities.

The second method has a greater chance of success because it's built can be forseen. It is the responsibility of the government therefore to provide the setting which will enable the desired growth to take place. Feasible rates of growth have already been built into the model to the extent that it is possible to understand the nature of the forces which are operating. The danger of this method is of course, that it will be too conservative.

It is believed that planning of government programmes is best served if the profile of the future is based on the second method, namely a forecast of the nature of the changes which are most likely to occur.

C. The details required.

The projection of the future social and economic profile must be related to the time period during which the action and impacts resulting from the decision occur. This will vary depending upon the decision involved and upon the impact the decision will have upon the use of resources and the structure of the society and economy.

Not only is the choice regarding time periods involved but also a choice must be made of the various phases of economic and social activities to be projected. It is better to start from the central core of more or less universal social and economic indices and gradually spread out from the central trunk rather than attempt to cover all sectors of the economy and society in one grand model. The underlying knowledge required to make more elaborate projections may not be available. The coverage of various sectors of the economy and society in the model will depend largely upon the particular uses to which the projections are put. If the projections are found to be useful in economic, social and physical planning the pressure for more and more elaborate forecasts will be brought to bear upon the agency responsible for making the projections.

For example, the physical planning personell engaged in regional and physical planning activities will soon demand forecasts by small areas and thus expand the requirements of the model.

The extension into space of a projection requires considerable amount of statistical data and knowledge of the interrelationship of one geographic area of the economy with another and the reaction of people with respect to mobility.

d) Socio-economic projections
as a central scaffolding

Economic and social projections represent the forecast of a troop strength and the plan of action which the general military staff develop during war-time for winning the war. The first set of economic projections although may not be based upon elaborate studies but should perform the functions of laying out in broad terms the strategic plan for gaining the goals and objectives which the government desires to achieve.

e) Model Preparation

Preparation of a model is beyond the scope of such a study. For those who are interested reference is made to other studies in Econometrics.

Administering the plan for regional
economic development.

In a sense it can be said that the entire governmental structure of the U.A.R. is dedicated to the creation of the economic, social and physical development. However the ministry of planning is concerned primarily with planning and allocation of resources.

Other ministries and public organizations are engaged in generating economic and social development.

Besides the rôle which the above central government agencies play in regional development, the local governments started to play an important rôle too, since the law establishing the local rule was issued in March 1960. Under the auspices of this law special councils of different levels were formed⁽¹⁾. One of the main functions of these councils is to look after the execution of the projects assigned for each region and to plan too for the future development of these regions both socially and economically. In executing the projects assigned for each region local resources are always given priority in use. It is expected that regional surveys which may be carried on by the regional planning authorities will be a great help to the central plan-makers in designing future development plans of the U.A.R. on sound basis.

(1) The governorate council level

The city council level.

and the village council level.

Industrialization of underdeveloped regions

1. Industrialization programmes in under developed countries

a) Process of industrial development

Industrialization programmes in most under-developed countries are normally based on the idea of providing a proper framework of social over head capital to which⁽¹⁾ some agricultural investments as well as housing are added in the hope, that, once such a framework is created, spontaneous private industrial investment will follow.

The principles on which this idea is based on the following:

1. on the supply side

To create a minimum quantum of social over-head capital to encourage productive investments to take place.

2. On the demand side

To create additional employment and income through investment in social overhead capital activities and in this way increase the demand on the new manufactured goods. If the demand increases new investments in industrial activities will be attracted and development of industry takes place.

b) Disadvantages of this process

Demand created on industrial goods is a result of the created employment and additional incomes generated by the investment in social overhead capital.

(1) in some cases.

Since both jobs⁽¹⁾ and additional incomes will come to an end when the projects⁽²⁾ are completed, demand on industrial goods will decline. Accordingly, there is a risk that the process of development will not continue.

C) A suggested pattern of large
and small scale enter-prise
in a new industrialized area

observations of the sequence and ease with which new industrial units are established in formerly non-industrialized area seem to suggest that the pattern of industrialization in the twentieth century is markedly different from that observed in past economic history⁽³⁾. At present, many successful industrial ventures in non-industrialized areas are subsidiaries or branch establishments of a large enterprise in a developed industrial area. Such large units bring with them skilled management, a detailed production plan involving assembly line techniques for labour, few skilled workers and capital.

(1) most of the jobs.

(2) For example electric power stations, roads, harbours ..etc.

(3) Industrialization in the past started with handicrafts then small industries which grew later to medium scale, then large-scale industries and lastly giant corporations.

The particular feature of this process of a well-established management and of advanced techniques of assembly line production is that even workers who had no former industrial experience at all can be easily taught on the job to make the few required movements in the proper rhythm at the proper time without great difficulty. Many experiences suggest that workers who never held any industrial job before engaged in such undertakings acquire within a few weeks of operation labour discipline and technique to such an extent that they have ratings of productivity per man-hour as high as, and rates of absenteeism as low as, these of experienced workers in old industrialized areas. In this case the labour training problem is so much easier than the long round about way via producing training teachers first, then establishing vocational training schools and only then proceeding to industrial employment of the workers seems unnecessary.

The establishment of such big branch units with advanced labour techniques is thus the easier step and may, therefore, in marked contrast to the past, be the first step in an industrialization of a new area. Unfortunately this is confined to the small number of big factories⁽¹⁾ only, and does not apply in equal or even similar measures to the large network of medium-scale and small-scale enterprises which must grow around the big units.

(1) branch or new.

If the growth of small and medium-scale enterprises does not supplement the establishment of the few large industrial establishments of the few large industrial establishments then these will remain like islands in the sea without any economic diffusion and radiation effect in the area and may not induce additional industrial growth. In many other cases, however, such large units may place subcontracts and orders for some small spare parts or intermediate products to other firms⁽¹⁾ in the new industrializing region and thereby induce investment in small industrial enterprises dependant on and centering around the big unit. In such cases the diffusion effect of industrial investment may be considerable and the big enterprise gives rise to the establishment of other units around it by creating the market for their output; it induces industrial investment which, without it, would not take place.

Incentives to encourage the inflow of big industrial units must be taken then if it is desired to industrialize an underdeveloped area. In such a case it can be noticed that this pattern of industrialization is a reverse of that observed in the past: big units come first and induce the subsequent growth of small industrial units.

(1) small and medium-scale.

d) Industrial zones or estates

establishment of industrial zones or estates has proved also to be a most effective instrument to induce the inflow of small and medium size industrial units. Effectiveness of industrial zones can be attributed to the following factors:-

1. Industrial zones can save a great deal of effort, trouble and expenses in erecting a factory; they can realize considerable economies of scale in construction of factory buildings and in the installation of public utility services.

2. They can provide for a better division of labour by securing common, technical, repair and information services which could not pay for one industrial unit alone but do pay for a series of industrial units.

3. They can organize housing, transportation and social amenities for workers which no single industrial project could do effectively.

4. they can offer inducements sometimes by building factories and offering them for rental to prospective industrial entrepreneurs, thus reducing the risk of single industrial projects by transforming the stock of capital required for the building into the flow of expenses for its rental, which reduces the risk of capital loss, if the investors were to abandon the project and move out.

5. Finally industrial zones are effective instruments for a natural policy of industrial location. This leads to the avoidance of overcrowding of certain areas which might cause increasing costs and an undue dispersion⁽¹⁾ which may reduce the volume of industrial investment in the area.

E) Supplementary incentives

A series of indirect incentives are necessary besides the direct ones-to induce a sufficient inflow of industrial investment. These incentives are sometimes a substitute for an infant industry protection. Examples of these incentives are:-

1. Purchasing the products of the new enterprises in advance through long-term contracts⁽²⁾
2. Offering credit facilities of various kinds
3. Exemption from taxes for new industrial investments
4. Exemption from customs' duties on equipment imports.

(1) because of non-optimum location.

(2) five years for example.

Techniques of regional analysis

In regional planning there are several techniques and methods which can be used to advantage in planning and programming work. Out of these methods and techniques the following can be nominated.

1. Regional social accounts.
2. The benefit - cost analysis.
3. The regional input-output analysis.
4. The comparative cost analysis.
5. The industrial complex analysis.

Details of the use of these methods are beyond the scope of this study. For this reason while we shall only mention the importance of the first three techniques in regional planning explanation will only cover the last two techniques briefly. For those willing to study comprehensively these methods and techniques reference is made to "Regional Economic planning-Techniques of analysis" (1)

1. Social accounting on a regional level

Social accounts on regional level is needed as a basic tool of analysis in regional planning as it is needed in national planning.

(1) Published by the European Productivity Agency in July 1961.

2. The benefit cost analysis

The benefit cost analysis is of little value in indicating the choice between projects. It's main value stems from it's role in the identification of the best of many possible designs of a particular development project.

This contribution can be maximized if along with the engineer, the economist participates in each stage of design formulation, rather than simply calculate the economic feasibility of a project after the design has become determined and fixed.

3. The regional input-output analysis

Regional input-output analysis is recognized as a tool of general applicability, especially when designed to be used in combination with regional social accounting systems.

4. The comparative cost analysis

The comparative cost analysis is a partial approach as a method which can be used for selecting optimum industrial location patterns for economic development. It's limitation is represented in it's inability to measure interrelationships between industries.

5. The industrial complex analysis

The industrial complex analysis is a new powerful economic tool designed to deal with the most advanced technological processes in economically advanced countries.

In the same time it has been adapted to use in newly⁽¹⁾ industrializing areas. Successfully in selecting a number of interrelated industrial processes which individually would have been marginal or uneconomic, but which, when combined resulted in the design of a major new profitable grouping of industries.

Before illustrating the use of the last two techniques i.e. the comparative cost analysis and the industrial cost analysis the following example is going to be used to develop the points to be made with regard to the method of comparative cost analysis.

A team of experts reaches a conclusion that within a national state there exists a sufficient demand for basic steel products and that the size of this demand justifies the establishment of a major steel works.

How does this team decide about this problem?

It seems that the first question to be asked is whether the steel operations are better concentrated in one integrated work or distributed among several geographically separated plants.

To answer this question experts must think first that:

a) Distribution of steel operations among separated plants leads to the loss of the advantages of economics of scale.

(1) Petro-chemical industries in Puerto Rico.

b) integration of these plants in one location has the advantage of a more equitable distribution of new plant facilities, new employment and new income.

This in essence, is the issue of one highly efficient mill N.s. several smaller less efficient mills, an issue which is faced in many industrial operations. Since sociocultural values are strongly involved in this case i.e. the value of equal regional distribution of benefits, there is no general solution applicable to all cases.

However, the team of experts can indicate the net costs through less efficiency of having geographically separated operations against which people can contrast such social gains as they may foresee.

But the situation is not as simple as this. If a decision is made to integrate all operations at one locality, the costs of integrated operations will vary from region to region. The best location can be indicated by comparative cost analysis. In this analysis the major factors which lead to differences in costs of production among regions are identified. In the case of steel production some of these factors are :

1) Transport costs in shipping raw materials from its sources.

2) Transport costs in shipping the product to the markets

3) Labour costs.

4) Fuel and power costs.

Hypothetical data of the following table might portray 1970 conditions in a hypothetical national state composed of three regions A,B and C when the market in city Z is to be observed.

-43-

Selected cost in serving market
per ton steel products, hypothetical
estimate for 1970.

	Transport cost on				Total trans labour power and Total			
	ore	coal	lime -	finished	port cost	cost	fuel cost	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Region A	4.50	2.00	.50	4.00	<u>11.00</u>	20.00	<u>10.00</u>	<u>41.00</u>
Region B	<u>1.00</u>	<u>1.50</u>	.60	12.00	15.00	<u>16.00</u>	11.00	42.00
Region C	4.00	2.50	<u>.20</u>	14.00	20.00	20.00	12.00	52.00

Notes:-

1. In the previous table it is assumed that capital and other costs are the same for all three regions.

2. The first column presents, per ton of steel, the cost of shipping from the nearest deposit to the best production site in each region.

3. Column 2 shows the cost of shipping coking coal from the nearest deposit to the best production site in each region.

4. Column 3 indicates costs of shipping limestone

5. Column 4 portrays costs of shipping a ton of finished product from the steel mill in each region to the market Z.

6. Column 5 indicates total transport costs

7. Column 6 " " labour "

8. Column 7 " " power and fuel costs

9. The marked figures in all columns indicate that a certain region has got advantage over other regions in respect of the item which the column includes

10. Column 8 indicates the over all net advantage figures of column 8 shows that the best production site in Region A has a net advantage of 1.10 per ton of steel over the best production site in region B, and a net advantage of 11.70 over the best production site in Region C. This result is based of course on the assumption that construction and capital cost will be approximately the same among the three regions, and

that other costs do not vary significantly from region to region.

The above example illustrates the technique of comparative cost analysis in its most simple form, when only one market exists. When more than one market exists, a table must be constructed for each market. The overall net comparative cost advantage or disadvantage of each region for a given market must then be weighted by the size of each market and the results assumed to yield comparative cost advantage and disadvantage for all markets.

At the same time we must notice that cost efficiency on which the previous analysis is based is only one of several considerations in national, regional and urban planning. If we turn back to our previous example, when only one market exists, it is clear that if the decision has been made to have all production of steel in one integrated works, that works should not be located in region C.⁽¹⁾ Location in region C involves high cost operation. The best production site in region C is distant from ore deposits, coal sources and markets, and involves relatively high labour and power fuel costs.

(1) Except perhaps under the most unusual circumstances.

However, the case for locating the integrated works in region A rather than region B is not so clear cut. It may be argued that the works should be situated in region B. This region may not be nearly as advanced as region A. (1). Region B^s labour cost advantage almost wipes out its transport cost advantage. Hence, it may be contended that for the nation as a whole it is justifiable to incur a greater cost (1.10 per ton steel) in order to create a major focal point for generating development in region B^s.

But the problem is still more complex. An integrated steel works is an industrial magnet. It attracts steel fabricators, especially those which both use much steel per unit product, and generate much scrap as a by-product to be fed back into the steel furnaces. It attracts too a number of industries which can feed into the steel fabricating plants. Hence sound analysis for the entire complex of steel, steel fabricating, and allied activities. Thus an industrial complex analysis must be pursued.

Industrial complex analysis:

The need for industrial complex analysis is also evident when other sectors of an economy are studied. for example, suppose an oil refining operation is being considered in an economic development programme. As in the case of the steel industry the team of experts would first need to consider whether or not the national market as initially estimated for 1970 could absorb the output of a modern, technically efficient

(1) This is suggested by the labour cost figures of column 6

refinery. If the answer to this question is in the affirmative, the team would next need to consider the region in which such a refinery could best be located. A table similar to table (1) must be drawn. Columns of such table would refer to such items as :-

- a- 1- Transport costs on cruds oil.
- b- 2- Transport costs on each of the major finished products such as gasoline , kerosene and fuel oil.
- C. fuel and power costs
- D. labour costs.

The best location would be indicated in the total column of the table.

But again , the problem if refinery development is more complex. In fact it may well develop that such relatively simple comparative cost analysis as depicted above would lead to negative results for a refinery operation when a more complex study along industrial complex lines would lead to a positive conclusion.

There are reasons why. When two operations are adjacent to each other, materials of one operation which otherwise might be able to be profitably fed into the second operation. (1)

Major transport cost savings may be realized when some of the chief products of a set of operations are fed as inputs into one another, such as fuel oil and gass into the production of the

(1) For example , hydrogen gas resulting from the refining process can be used in the manufacture of ammonia.

synthetic fiber Dacron. Heat savings may be realized too, when adjacent location permit the feeding of products of one operation, say in mill from, into another operation.

When the demands for common inputs facilities, and services arise from several processors in one locality, these inputs, facilities and services may be obtained at lower cost for each process⁽¹⁾.

Findings of an industrial complex analysis concerning a refinery project ⁽²⁾ shows the following tabulated results.

Overall advantages of selected
production programmes.

Production Programme	Advantage ⁽¹⁾ (annual)
1. Refinery alone	- 112,000
2. Fertilizer based in fuel oil	- 168,000
3. Refinery and fertilizer	- 20,000
4. Staple fiber alone	+ 1,563,000
5. Refinery, fertilizer and staple fiber	+ 1,575,000
6. Refinery, fertilizer chemical intermediates and staple fiber	+ 73,000

The first column of this table indicates advantage or disadvantage which the programme has for each individual activity and combination of activities.

The first figure of column 1 indicates that the operation of a refinery alone involves a disadvantage for the country of 112,000 annually.

- (1) For example, the service of a repair facility, or electricity from a power station.
(2) in Puerto-Rico.

The first column of this table indicates advantage or disadvantage which the programme has for each individual activity and combination of activities.

The first figure of column 1 indicates that the operation of a refinery alone involves a disadvantage for the country of 112.000 annually.

The second item of this column shows that fertilizer manufacture based on import of fuel oil would involve a disadvantage of 168.000 per year.

The third item of the column indicates that a combination of refinery and fertilizer operations would involve a disadvantage of only 20.000 per year.

This result immediately suggests the value of the industrial complex approach. Bringing together at one locality two otherwise disadvantageous operations so that one gains from utilizing the other's products yield a combined operation which works at only a small disadvantage. This small disadvantage may justifiably be offset by a national state subsidy in view of other benefits to be gained. New employment and income would result. Taxes would accrue to the community so that the community could build roads which would not only service the operations of the refinery and fertilizer plan, but would also be available to stimulate other community industries and so forth.

This is not the end of the story. In the previous table we note that the fourth item of column 1 indicates that the programme has an annual advantage of 1,536,000 in the production of the synthetic fiber, Dacron staple . This large disadvantage is due to the presence of cheap labour having requisite skills.

The next combination of refinery, fertilizer, and dacron fiber plants. This combination yields a combined advantage of 1,575,000 annually. For the previous programme this is the best of all the cases listed in the table . It shows how by adding two activities, each by itself advantageous, to one advantageous activity, yield a combination which is more profitable than the single advantageous activity alone. This case clearly demonstrates the significance of industrial complex analysis.

The previous table presents also data on one more combination of activities. This combination adds the production of these chemical intermediates to the refinery, fertilizer and staple fiber activities.

The advantage for this particular combination falls off sharply to 73,000 per year . This fall reflects a disadvantage relative to another region in obtaining fuel and chemical petroleum labour.

Main sources of literature

1. Regional planning

by Dr. I. H. Abdel el Rahman

Memo. n^o 46 I. N. P.

2. Planning for balanced social and
economic development

by Dr. I. H. Abd el Rahman

Memo no 63. I.N.P

3. The relationship between regional planning
and national palnning

by Dr. S. Zaki

Memo no 136 I.N.P.

4. The requirements of regional and national planning.

by Dr. I.H. Abdel el Rahman.

Memo^{no} 182 I.N.P.

5. Regional economic planning, techinques of analysis
published by the Europeans productivity
agency of the organization for European
economic co-operation . july 1961.

6. The text of the U.A.R. local governornement law.

U.A.R. March 1960

7. Physcal espects of regional planning.

by