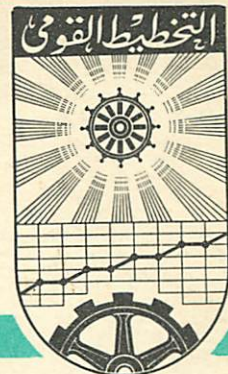


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A PROPOSED OUTLINE FOR REGIONAL
MANPOWER PLANNING IN ASWAN IN
U.A.R.

By

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1. Introduction:-

Human resources of a country represent the fundamental factor for its development. Other factors as capital and material may be obtained in a short time from other sources. Since unemployment and shortages of skilled manpower categories are the main features of the situation in developing countries, a well trained manpower should be available to promote and sustain any program of economic and social development.

Skill formation through education and training is a long term process where policies should be set, decisions should be taken and capital should be invested over long period of time.

Now, before preceding in the subject, it is essential to clarify manpower planning. The term "manpower planning" is used nowadays very frequently. It may mean different things to different people, each according to his knowledge and field of interest. People may look differently at manpower planning. They may look at it as a technique for creating employment opportunities, as a method for allocating human resources so that better and efficient utilization of manpower may be resulted, as an approach to develop certain categories of skilled manpower as engineers, scientists and physicians, as a useful tool for upgrading labor force or as a policy to plan the

education and training facilities as a whole. In fact manpower planning contains all of them.

Therefore we may define manpower planning as the process of determining the requirements of economic and social development programs from the different categories of manpower quantitatively as well as qualitatively at predetermined periods of time and the way of their better and efficient utilization.

Manpower planning involves a complete understanding of the targets of the nation and the policy, which is designed to achieve them. Future manpower requirements (all categories) may be then estimated for every sector of the economy. This may determine the burden on the education and training capacity during the plan period and what and when new capacities should be added to establish gradually the balance between manpower supply and needs. This requires an intensive study and analysis of the present social and economic situation in the country and its pattern of development in the future. Detailed investigation on the country's economic growth should be carried out which may be based on research concerning targeted increase in national income, technological progress and improvements in productivity that might take place in the future.

In earlier decades people thought that manpower skills and experience could be originated and adapted to any economic conditions at any level of technology and productivity. It was only since the three last decades that people have realized that manpower as a resource for economic development, requires investigation and planning. Since then new concepts of manpower, its utilization and planning have been resulted and projects on manpower planning and their vital importance on economic development have been emphasized and appreciated everywhere.

Manpower planning is still very new as a research subject. Although there are many publications everywhere in the world concerning this topic, very few scientific work has been done on it where different empirical approaches have only been applied in a number of countries.

Manpower planning is a very useful tool for both developed and developing countries. Developed countries resort to manpower planning to insure higher levels of productivity, further progress and prosperity. In developing countries the execution of economic development programs encounter in their first stages considerable shortages of the skilled categories of manpower to the

extent that these countries might attend to import some of their needs in the form of experts from other countries. Manpower planning enables these countries to set policies which establish the targeted balance between supply and demand of manpower as well as determines the expansion, or in general, the corresponding changes in the education and training systems.

Manpower planning may be carried out on the national regional, sectorial or enterprise level.

Most of the countries have different levels of development and progress among their regions which can be indicated by the difference in regional per capita income levels. This manifests itself in developing rather than developed countries. Without planning regional development, these regional inequalities are apt to increase as a function of time. Therefore regional planning is essential to decrease regional disparities and to equalize regional individual income levels. This is the reason why Aswan regional planning project has been originated. This necessitates from the very beginning the setting of a regional manpower policy to ascertain the availability of what the project needs from trained manpower. Aswan as a region can be distinguished from other regions in the U.A.R. This is through

its economic and social characteristics and features. To plan for manpower in Aswan region, the situation there at the present as well as over a number of years in the past, if possible, should be studied. This is to enable the policy maker to have an insight into the factors that may assess manpower resources and requirements for the regional development project. This comprises a number of elements that should be studied in Aswan region.

2. The study elements:-

2.1. Population:-

- 2.11. the annual growth rate of population.
- 2.12. the composition of population by sex and age groups as well as its projection during the plan period.
- 2.13. the distribution of population by education status.
- 2.14. the degree of urbanization of population and changes that might occur in the future.

This provides estimates on available manpower, labor force as well as the burden on the different activities in the services sector in the region.

The population of Aswan region and its future changes have a direct influence on the distribution and availability of manpower in the region. Considering only the population movement of the U.A.R. as a whole is not sufficient to indicate population changes in the region. This is because population changes differ from one region to another as can be noticed by comparing the different regional population density levels, measured by the number of inhabitants per km².

These great difference among regions in the U.A.R. have different effects on regional manpower situation and development. Therefore a detailed analysis of the population of Aswan region and its future changes is emphasized.

Again regional migration presents another problem. People move from this region to other regions, where better working conditions exist, they may also move inside the region itself from one area to another. This influences the industrialization and development of the region. Accurate analysis of regional migration together with its causes should be considered to enable the planner to avoid its recurrence. Corresponding data concerning the persons themselves, their professions, the region where they live, and may be the enterprises where they work are of

great importance if they were possible to be collected. (they might be collected from civil registration or identity cards ... etc., data by the mobilization department should be consulted.)

Analyzing causes of movement from the region, the planner may be able to detect some economic and cultural justifications to the situation. Generally, he may detect some facts as when the region has been not yet industrially developed so that it has a slight contribution in the industrial production of the country and so on. Better working conditions in other regions attract the young and the more educated people to leave the region and move to other regions seeking better life. Therefore regional migration and its causes should be considered in the perspective regional plan. Also accurate forecast of population growth by sex and age groups can be taken as valuable basis for planning activities such as health, social, education, construction and communication in the region.

Population census at 1960 for Aswan province should be taken as the basis for the analysis as it comprises the only available source of data required.

2.2. Labor force:-

After estimating future population changes in the region, it is essential to estimate the labor force

and its future projection in the period of study. This determines the size of the labor force to be engaged in projects and production. Perhaps employment requirements in the region might exceed the supply of labor force available. In this cases policies concerning development of regional immigration, better utilization of manpower available and rapid increase in labor productivity should be investigated.

Since the last population census in the U.A.R. was at the year 1960, this year may be taken as the base year for the study. The ratio of labor force in the region to its population may then be studied for 1960 as well as for the last period (population census of 1947 and manpower sample survey etc.). Estimates of labor force should include its composition by sex and age groups. Contribution of females in the regional labor force and its future development should be considered. Great effort might be exerted to develop this contribution

Comparison with other regions can be used to great advantage to know present situation and to arrive at anticipated trends. Clear concepts and definitions for

the individuals to be included in the labor force is very important to avoid bias and misinterpretation. These concepts & definitions will clarify some questions that may arise, as for instance, whether including in the labor force unpaid family workers and workers who are still active although they are in the retirement age (...etc.

Such investigation provides the planner with past trends that might prevail in the future after certain adjustment and correction.

Further investigation on estimating labor force in Aswan region may comprise:-

2.21. Labor force distribution:-

2.211. Distribution of labor force by economic activities (agricultural as well as non-agricultural activities by major types and branches).

2.212. Distribution of labor force by regional areas. Statistical data on past period should be taken into consideration if possible. This enables the planner to have an insight into past trends on the distribution of labor force among the economic sectors and branches of industry, that might

prevail in the future. Again, this provides data concerning those people who although they live in a certain area in the region they must move daily to other area, in the region or to other neighbouring regions to work there. This helps to estimate the regional labor force accurately. But as a matter of fact these people represent an economic problem. They may spend daily a considerable time (perhaps 2 or more hours) to go to their work places and return back. This is on the expense of their free time as compared with their colleges who live directly beside or near their workplaces. This decreases their relative average work intensity and productivity with respect to their colleges. They cannot participate in the evening courses and programs held after the daily working time which their enterprises may organize so that their upgrading through acquiring more knowledge & skill will be a problem. They will continue having lower qualifications as well as lower productivity. Absentism for one reason or another will become very high. This has a direct impact on production cost and productivity of the enterprises and projects they serve. Also this part of the

regional labor force represents a certain burden on the services' sector as communication for instance. This requires an intensive study and investigation on the part of the planner. He should try to decrease gradually their size as well as to redistribute them in such a way that no worker might live over than 20 km say far from his work place.

2.221. Labor force classification by occupation categories and education status:-

Classification of regional labor force by occupation categories and education status at the base year and over the past period (if such data are available) give trends which might be used in forecasting future changes in the occupation structure and structure of labor as well as labor requirements from the education and training systems.

The economic development of Aswan will imply certain rates of increase of labor productivity in all economic

activities. This will be accomplished by the application and utilization of new technologies and production methods. As a result new occupations based on more specialization and specific knowledge and qualifications will be created in the region.

According to the length of the period that is going to be accepted for manpower planning in Aswan region, one of the objectives of such a research is to develop and coordinate, to a certain extent the education and training facilities, with programs of economic development. Therefore the occupation structure of manpower that might be used should have the following objectives:-

1. to suite the economic development program in the region.
2. to be applicable in all economic activities in the region.
3. occupation categories included should be clearly defined to avoid any unnecessary erroneous interpretation and interference during application.
4. higher skilled occupation categories should be more detailed than other categories. This is particularly important as the cost of education and training of persons occupying such occupations

- is considerably higher than that of other occupations.
5. to take into consideration the population census data of Aswan region at 1960, as they are the only source of data available, to construct the inventory of the regional labor force at the base year which provides us with the present labor force structure.
 6. occupation categories included should be easily converted into the different education and training levels.

Considering table 42, ("Distribution of the Egyptians by occupation, education status and sex") of the population census 1960 for Aswan Province, Analysis of the category "managers, administrators and executives" for instance, shows that 67 persons cannot read and write, 140 can only read and write with no further education. It means that for this occupation category, as can be proven for other similar categories, the total table figures denote qualified persons with the sufficient levels of education and unqualified persons with lower education levels who should be classified under other lower occupation categories. The analysis showed that the population census of 1960 with the existing occupation classification is inadequate for the purpose of this manpower planning

research. This can be contributed to the difference between the objectives of this research and those of the population census data of 1960. This means that the objectives for which the census data are collected do not coincide with the objectives of the research. This emphasized the necessity of designing a new occupation structure for manpower for the target year concerned in the Aswan manpower planning project taking the 6 previously stated objectives into consideration.

Since the study of labor force structure at present and its changes in future is very essential for manpower planning, an inventory of manpower for the base year should have to be constructed. For this purpose the population census of 1960 for Aswan province is the only available statistical data. But since the objectives for which the census data are collected do not coincide with the objectives of the manpower planning research, as mentioned previously, certain assumptions have to be set to assure the feasibility of reclassifying the census data according to the new occupation structure that may have been designed. Carrying out some sample survey, ^{and} pilot studies in Aswan province to adjust and correct the statistical data available and supplement the planner with nowadays' information and knowledge about factors affecting supply of labor force and its

structure are of top most importance.

2.23. Labor force characteristics:-

This involves studying the community in Aswan region with a view on mentality and aptitude of labor force as well as its reaction and motivation toward education, economic development and change in standard of living etc.

2.3. Employment, unemployment and underemployment:-

Data on development of employment in the region by economic activities over past period, if available are essential. This provides the planner with trends in employment and its structure by major activities in the region. which are useful for estimating future manpower requirements. Shortages of manpower by occupations or occupation categories or by economic activities can be detected. Again situation of unemployment as well as underemployment in the region can be studied by economic activities by occupation categories or by different areas in the region. Data on employment in the High Dam project, classified by main activities and occupations are very essential. This is in order to have a comprehensive knowledge on the

total employment situation in the region.

2.4. Wage structure and wage levels:-

Also data on changes of wage structure and development of wage levels in the region, by economic activities and occupations or occupation categories at present and over past period, if possible, are very important. Trends in the regional wage structure and levels can then be studied such trends may throw light on upgrading patterns and rates of developing skills and qualifications of the individuals employed as well as elasticity of employment by economic activities and occupation categories.

2.5. Education and training activities:-

It is very important to have statistical data over a period of time on education and training activities in the region. Data should be classified according to level and type of Education. They should provide the planner with change in size of admittance, enrollment and graduates from each level and type of education and training that have taken place over the past period. Quality at each level of education and training may be also estimated. Since the

education and training facilities in the region represent the source of producing a considerable part of the regional trained manpower, such data will provide the planner with trends in education and training facilities so that they might be used in estimating future supply of trained manpower in the region from each level of education, if existing education system will continue to operate in the future. Similar data on persons belonging to the region but trained in other regions in the U.A.R. are very useful. They must be classified also according to level and type of education and training.

3. Forecast of regional economic development in Aswan:

Regional planning should be interrelated to national planning. Targets of regional planning should be obtained from and coordinated with national targets. Regional planning should determine the growth rate of the economic development in the region. This depends on many factors such as rate of increase of national income, targeted equality in regional per capita income levels and potentialities for development in the region. The annual rate of growth of national income in the U.A.R. is 7.2% based on doubling it each decade.

Then for setting an economic and social development plan for Aswan region, its natural resources as well as the impact of the High Dam on the different economic activities in the region should be analyzed and investigated. Thus growth rates of development in the region should be decided upon by Ministry of planning and authorities of the region.

Now and after determining the growth rates of the economic development in the region the next step is to choose a number of projects to constitute the development plan so that these growth rates can be achieved. The projects may be classified into regional and national projects. Regional projects have a direct effect only inside the region where national projects affect the economy as

a whole, as for instance the electric power supply project from the High Dam and the chemical industries in Aswan. Some of the national projects, because of their working conditions, present no location problem. Their locations are fixed to specified areas in the region. The Government should select the other national projects to be located in Aswan region in order to achieve the regional growth rates of development required. In doing so minimization of the sacrifice on the part of the growth rate of national economy should be investigated and aimed at, since higher rates of growth of national economy could be achieved if such national projects were located in more developed regions in the U.A.R. other than Aswan.

The contribution of each project in Aswan regional development should be studied. This gives the relative importance of each project in the achievement of the targets and aims of the Aswan development plan so that the authorities can determine the technology or technologies that are going to be utilized in operating these projects and their future changes.

Development of regional projects will follow the pattern of development of the national projects. For national projects that could be located every where in the region, requirements of each of them from labor, power supply, water supply, transportation ... etc, should be studied so that they can be distributed and located inside the region in such a way

to insure high operating efficiency and productivity. Similar projects or industries may be located together to benefit from certain facilities.*

4. Estimates of labor requirements:-

The production levels of the different projects during the plan period have been already determined as mentioned above. To estimate labor requirements for these projects to sustain this regional plan, each project should be analyzed to its constituent production processes. Then by setting production standards for direct and indirect labor during the plan period, labor requirements by occupations and occupation categories as well as by education and training status can be estimated by time periods. Establishment of those production standards depends on a complete investigation and study of levels of technology and levels of labor productivity of each project and their future changes during the plan period.

This will require setting and applying certain measures to indicate levels of technology that are going to be used and their future changes. All factors affecting labor productivity should be determined and studied. Measures should be derived to indicate their future changes so that

*- Interaction between Aswan development plan and other regions should be also studied as it may necessitate the construction of high ways, railways, sea ports etc. in other regions.

their impact on labor productivity could be estimated. This is the core of the problem. Industrial engineers should be requested from the very beginning to carry out such investigation and research.

For each project I would like to emphasize the importance of dividing the estimation of labor requirements into two phases, the gestation phase and the working or production phase. The gestation phase is that period of time during which the project is going to be constructed and established. The working phase comes after the gestation phase, during which the project operates and produces. This is very essential since labor requirements differ in characteristics and structure for these two phases.

5. Balance of supply and demand of manpower:-

Supply and demand of manpower by time periods should be matched together to determine surpluses and shortages by categories of manpower. A regional manpower policy should be set to meet manpower requirements and to adjust imbalances in manpower resources and requirements. Such a policy may consist of the following elements:-

1. The preparation of an education and training program that may meet to, a certain extent, manpower requirements at each education and training level, by size, type of specialization, degree of skill and other qualitative characteristics. For certain types of education

For certain types of education and training, training the individuals inside versus outside the region should be considered. Accelerated training programs may be used to transfer surplus skills to other types of skill which are badly needed and to form new types of skill that are required. This is very essential in the short run.

2. In planning the manpower in Aswan region, supply of labor may be short in some economic activities or occupations. Therefore distributing labor among occupations for its better utilization as well as encouraging regional immigration should be aimed at. An incentive should be given to labor to insure this distribution and to attract it into such occupations. Incentives may have different forms and types. But direct economic incentives, which imply offering higher wages in those economic activities and occupations where labor is scarce are the simplest and the most widely used. Individuals in the region as well as in other regions in the U.A.R. are encouraged to look for employment in those activities and occupations in Aswan region where labor is scarce and is needed urgently, because they will be offered better and higher wages than in their present occupations. Offering higher wages will give the different activities and projects in Aswan region the chance to select qualified people with required levels of skill and experience for employment so that higher levels of labor productivity can be assured.

Thus, knowledge on wage structure and wage levels by economic activities and occupations in Aswan region can be taken as a valuable basis in investigating their future changes and in setting incentive schemes to regulate the distribution of labor among the economic activities and occupations as well as to provide them with the required labor supply. This will result in a new wage structure with new wage levels in the region. Their application will involve inequality of incomes inside the region as well as between the region and other regions. Therefore such incentives should operate but with certain qualification, so that a compromise may be achieved. In solving such a problem and in making the required labor adjustment and transformation for these and among such activities and occupations, combination between compulsion and incentive systems may take place.

3. According to the situation of supply and demand that may prevail, policies may be set to develop the contribution of females in the regional labor force.
4. Importation of certain types of skill from other countries for definite periods of time may be also considered.

N.B. The study should include the labor force employed in the High Dam Project and the possibility of employing part of it (according to its types of skill) gradually in Aswan regional projects as the different steps of the High Dam are going to be finished. This involves a certain

coordination between the authorities of both the High Dam and Aswan regional planning project.

6. Organization of a regional committee for manpower planning

A committee for manpower planning should be organized in the region. The committee should consist of economists, statisticians, industrial engineers and others. Members of the committee should be well trained. They should be aware of all regional manpower problems and how to be solved. Experience of other countries in this field will be also very helpful.

I would like here to mention that the aim of this note is mainly to outline the elements of study and the procedure that may be followed in manpower planning in Aswan region rather than to investigate any problem in any depth.

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