

CHAPTER II

THE NATIONAL POLICY FOR RURAL RECONSTRUCTION

a. AGRICULTURAL POLICY

The State has given the development of agricultural production and expansion its utmost attention as it is the backbone of the country's economy. The policy of the Permanent Council of National Production has two main objectives.⁽¹⁾ The first is to increase the productive quality of the cultivated land by improving the agricultural crops, by selecting better seeds, combating disease, using appropriate fertilisers in adequate quantities and introducing new crops. Facilitating agricultural credits for the fellaheen was also considered. This is besides improving irrigation and drainage systems, preserving agricultural products by combating harmful insects and improving the methods of storage; also giving special care to the improvement of the breed in livestock and dairy herds by the introduction of better yielding units and combating disease.⁽²⁾

The second objective is to increase the cultivated area in the country. The council has put forward a long-term programme based on the schemes drawn up for controlling the waters of the Nile. This is in addition to the immediate projects for agricultural expansion. A four years programme was initiated to reclaim 24,500 feddans including 194,000 feddans in the Delta.⁽³⁾ A further 21,150 feddans are being reclaimed in the Oases of Siwa, El-Kharga, El-Dakhla, El-Bahariya and El-Farafra, whilst the project of El-Tahrir Province envisages the reclamation of an area of about two million feddans of which 40,000 feddans have already been reclaimed. This latter scheme will be discussed later in this chapter.

The Land Reform Law of 1952 had, to a certain extent, affected the rural structure of the country although it did not affect all the rural population. A short account of the law and its application will be given in this chapter.

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- (1) It is worth mentioning here that the country loses about ££ 40 million through plant diseases and storage losses.
- (2) Permanent Council of National Production, Report 1955, Government Press
- (3) Merri. S. 'Agrarian Reform in Egypt', Government Press, Cairo, 1958.

Due to the fact that agricultural development must be accompanied by industrial development, the Permanent Council of National Production has given much attention to the development of industry. A five years plan for industrialization is now in progress.

Agricultural Credit

In view of the great importance of agriculture in the Egyptian economy, the predominance of small scale farming, and the great pressure of the mass of the rural population on the cultivated land, cheap short term agricultural credit is more necessary than any other form of assistance. Until 1930 there was no institution specializing in agricultural credit, except the Agricultural Bank.

In 1931 The Banque du Credit Agricole was founded. In 1940 it had over 100 branches and nearly 500 'shoonas'⁽¹⁾ distributed all over the country. Its original functions included the granting of short term loans (for 14 months) for the purchase of seed and fertilizers and other seasonal cultivation expenses; and medium-term loans (for 10 years) for the purchase of livestock or machinery or for land improvement. In addition, it sells, for cash or on credit, fertilizers and cotton and other seeds.⁽²⁾

In 1951 the bank was renamed the Banque du Credit Agricole et Cooperatif, half of its capital then being subscribed by 1,955 rural and consumer co-operatives. In 1958 £E 9 million were used in the credit scheme.⁽³⁾ About 71,000 land holders owning 151,099 feddans will benefit from the scheme. During the period between the 1st of January and the end of May 1958, £E 1,834,485 were granted on loan for buying seeds and petroleum products.

Another scheme is to establish 2,000 village banks in about half the villages of the whole country.⁽⁴⁾

Rural Reconstruction

Two lines of attack are being used in the policy of rural reconstruction. The first comprises short-term programmes which deal with improving the system of agriculture by regulating the agricultural rotation, livestock breeding, combating harmful insects and disease, regulating the credit system, improving the seeds

(1) Open Air Storage space
 (2) Issawi. C. 'Egypt at Mid-Century' Oxford University Press, London 1954.p.221
 (3) Al-Ahram, 7th July, 1958
 (4) - do -

introducing partial mechanization, producing more manure, regulating both irrigation and drainage systems, expanding rural industries and improving marketing facilities.

The second consists of the long-term programmes which need more capital such as those aimed at increasing the productivity of the existing land resources, reclaiming land, controlling water resources and introducing rural industries.

One of these schemes is designed to improve the poorer cultivated lands which amount to 1,300,000 feddans and comprise 20% of the whole cultivated land of the country. Another such scheme aims at the improvement of irrigation and drainage in about 900,000 feddans.

Other schemes have also been prepared for the reclamation of the salt marsh lands in the northern parts of the Delta by draining away the salt water and introducing Nile water after certain regulations in the irrigation shifts, and also using the drained water as far as it is suitable for irrigation. (1) This scheme during the flood season will irrigate more than 140,000 feddans in the northern Delta as well as 10,000 feddans in the Taber Province, also 28,000 feddans reclaimed by the Egypto-American Land Reclamation Department (under a Point Four Scheme) and 14,000 feddans owned by the Land Reform Department. (2)

Reclamation of Deserts

The Egyptian deserts were thought of as the only opening for development and exploitation as they constitute 90% of the total area of the country. The geological survey and study carried out by many experts have proved that there is a natural underground river connecting the few Oases in the Western Desert. In this connection Dr. E. Paul said, (3) 'When anybody travels across the arid Desert he must compare the Nile Valley which he had left behind and what he expects to see of the Oases which are still far away; but he does not think at all that a few hundred metres below his feet there is a huge water reservoir.' It is an undoubted fact, that the Lybian sand stone strata which contains this underground water lies under the Lybian Desert stretching under the Oases

(1) In the southern part of the area the degree of salt solution is small and does not preclude its use for irrigation purposes after a certain measure of treatment.

(2) Tell, B. 'El-Khargu Oasis.' Government Press, Cairo 1952

(3) Issawi. G. Egypt at Mid-Century, Oxford University Press, London 1954. p.104-6

depression and feeding the Oases from its copious water supplies through a number of springs.

This strata is distinguished by its porous structure and lies between two impermeable formations. The underground water runs from south to north as its sources are in the Lakes Area in the Upper Nile, the rainy areas of Darfour and Arwi and the Andi mountains.

In his book on El-Kharga Oasis, B. Tell.⁽¹⁾ said that the amount of water which comes out of the springs of El-Kharga in a year does not exceed the amount of water which saturates a square kilometre of the strata which is 122 metres thick.

This means that underground water in the Oasis area could feed the Oasis for 3,000 to 4,000 years without consideration to the vast areas which contain the underground water under the surrounding deserts.

Here again is another prospect for exploiting the Western Desert if a chain of pumps were constructed along the Oases' depression, and experiments are now being carried out to determine the nature and potential of the soil in these areas.

Flood Control

The possibilities of desert reclamation will always be dependent mainly on the availability of water as a main factor and such projects usually depend on the investment of a large amount of capital if success is to be achieved. Use certainly can be made of underground water supplies but quicker results can be obtained from Nile water by virtue of its silt content. At present about half of the Nile water is still being wasted every year despite the fact that dams and reservoirs have been built in the upper reaches of the Nile to conserve its resources. This wasted water amounts to about 40 milliard cubic metres lost either in the sea, into the ground, or by evaporation.

Between August and December the river provides the amount necessary for Egypt (30 milliard cubic metres) and the Sudan (4 milliards) but fails to do so between January and July when Egypt requires 28 milliards and the Sudan 2 milliards; for at this time of the year the average flow of the river is only 15.4 milliard cubic metres.⁽²⁾

(1) Tell, B. 'El-Kharga Oasis'. Government Press, Cairo 1932.

(2) Harst, H.E. 'The Nile.' London 1952

The High Dam and the New Valley

There have been many schemes and proposals for using the water now being wasted but all ended in vain as there is no existing dam which could preserve this large surplus of water, and its flooding into the sea could not be prevented. This was probably the main idea behind the High Dam project which is designed to ensure permanent storage of the water. It has been noticed that the volume of water changes considerably through the different years. In 1878-1879 the volume of water was about 151 milliard cubic metres, while in 1913-1914 this volume decreased to about 42 milliard cubic metres. During the critical period (February/July) when about 22 milliard cubic metres are required the supplies can be particularly fickle - in 1878 the supply amounted to 36 milliard cubic metres whereas in 1913 it was no more than 7 milliard cubic metres.⁽¹⁾

All the dams and the schemes already built were designed to secure and to increase the annual storage of water. The High Dam is designed to secure a permanent storage of 130 milliard cubic metres; which after making allowance for silting, evaporation and other losses will ensure a net storage capacity of 70 milliard cubic metres.

The dam is to be built 6.5kmt south of Aswan. The water level in front of the dam will be about 147 metres high and can rise to 180 metres. The stored water will cover more than 3,000 square kilometres from Aswan to Wadi Halfa which will be eventually submerged by the water.

The erection of the dam itself will cost about ££ 120 millions including ££ 10 millions to be paid as compensation for the land and towns which will be submerged by the water. In the first 10 years of the scheme the water is to be exploited in the reclamation of 1,400,000 feddans in the north, east and west of the Delta. The reclamation scheme will cost about ££ 49 millions which will raise the whole cost of the scheme to ££ 209.5 millions. In the following 10 years 600,000 feddans are to be reclaimed at a cost of ££ 241.5 millions.

In return, the Government's income would be increased by ££ 18 millions per year. This would increase the national income by ££ 255 millions per year.

(1) Permanent Council of National Production Report 1955, Government Press pages 120 - 172

This is in addition to the value of the 2 million feddans to be reclaimed and which is estimated to be ££ 300 millions. After a second ten years of the scheme it is estimated that the Government's income will rise to ££ 23 millions while that of the national income would be ££ 355 millions per year. (1)

Against these gains it must be appreciated that there will be a marked decrease in the general distribution of Nile silt as a result of the elimination of flooding and the concentration on canal irrigation. It is estimated that this will involve the reduction of usable deposits of Nile silt from 13 million tons to 6 million tons per year with a consequent reduction of its value from ££ 460,000 to ££ 236,000. This loss, however, is relatively low when compared with the gains to be derived from the scheme. (2)

Other reclamation schemes in the Syrian region might prove to be worthy of consideration. In the case of the High Dam Scheme the land to be reclaimed is limited by certain natural and economic factors while the prospects in the Syrian region are very much wider in scope.

As a result of the High Dam Scheme the banks of the Nile between Aswan and Isna about 90 kilometres north, will be exposed to continuous water erosion. Because of this, a canal is suggested to be built north of Aswan to relieve the banks from erosion. Another alternative to this canal is to divert the excess water to the desert where it can reach the Oases depression to create, perhaps another valley in Egypt. From the topographical study of this area, one can see that the chain of the Oases which stretches from south to north and ends in the depression of Qattara, compose another valley in the Western Desert, and lie above a rich underground water supply which in conjunction with receiving silt from the Nile would seem to indicate good grounds for assuming that this valley had a high fertility potential. One of the great obstacles in desert cultivation is the instability and looseness of its soil, and this can be rectified by the addition of silt. Consequently if the silt be brought with some of the excess water from the High Dam it would seem that the possibility of creating another productive valley in Egypt would be feasible. (3)

(1) Permanent Council of National Production, Report 1955. Government Press
pages 120 - 172

(2) - do -

(3) Footnote overleaf.

The water could be taken through an R.C. pipe-line or a covered canal to connect the different oases, debouching excess water finally in the Qattara depression. The electricity to be generated from the High Dam could also be used for running this chain of pumps as well as electrifying the whole valley, for the purpose of desert reclamation. The oases would act as centres for expansion along the pipe-line or the covered canal whose water supplies could be augmented from the underground resources (See Map no. 3)

There is no more than ^{an} idea at present and a wide range of studies and research would be necessary to assess its possibility as a long term scheme in the economic development of the country.

(3) from previous page:-

Fortunately, after writing the foregoing the author learned that on the 3rd December, 1958, the Government embarked upon a similar scheme under the name of 'The New Valley' for which a directing board has been established. Eighteen wells have been built in the valley and great amounts of iron ore have also been found in El-Bahariya Oasis. This is believed to be the largest mine in the country. A road has been designed to connect Manqabad on the river Nile to the town of El-Kharga in the New Valley.

The new Valley will comprise also the Oasis of Siwa and the depression of El-Qattar. It was estimated that the area to be reclaimed is about three million acres. The scheme is to start with one million acres, 10,000 of which are already under cultivation. A system of roads and air transport has been planned to connect the Nile Valley with the New one and schemes for populating the area have been worked out

b. LAND REFORM

In 1923 when Egypt started to practise her parliamentary life and the competition for parliamentary seats made many of the representatives of the rural areas try to increase their holdings so as to dominate and secure more votes from their farmers, a natural outcome was increase in land values and accordingly increase in rent.

Many of the landlords used to live in towns and rent off their land. Statistics show that 75% of the cultivated land was rented to small or landless farmers. This situation led to the creation of middle-men who used to take their profit from both sides, the owner and the farmer. This added a further burden on the fellah's income in the form of a further increase in the rental value.

On the 23rd July 1952 a new regime came into power and one of its first measures was that of Land Reform. On the 9th September 1952 a comprehensive and well thought out land reform was promulgated. Excluding uncultivated land in process of reclamation, the size of an agricultural land holding was limited to a maximum of 200 feddans per owner. Any surplus was to be requisitioned by the Government within five years of date of enforcement of the law, and the portion to be requisitioned each year was to be not less than one-fifth of the total land to be requisitioned.

The land requisitioned under these provisions is distributed among small farmers, that is, farmers owning under 5 feddans, and each of the recipients is allotted a property of not fewer than 2 and not more than 5 feddans. The price of land so distributed is to be estimated on the basis of indemnity to be paid by the Government plus 15% for expenses; it is to bear 3% interest and to be repaid within thirty years. The price was fixed at 10 times the rental value.⁽¹⁾

Object: The object of the Government's reform policy was not only redistribution of the land but also increased agricultural productivity and improved levels of living as well as the diversion of investment from land speculation to productive enterprise. The Higher Committee for Agrarian Reform

(1) Marii. S. 'Land Reform in Egypt' Government Press, Cairo 1958, page 27

is responsible for the requisition, distribution and management of the land affected by the legislation, and for providing credit and promoting co-operatives.

Procedure: An area of 566,000 feddans belonging to 1,789 landowners ^{was} were to be requisitioned over a period of five years and distributed to 200,000 families comprising 1.2 million persons. (1) The expropriated land is distributed in holdings of from 2 to 5 feddans and the recipients must be farmers owning less than 5 feddans of arable land. Orchards, which require special technical care are to be distributed among graduates of agricultural institutes in units not exceeding twenty feddans. To implement this scheme the country has been divided into twenty-two districts, fourteen of which are located in the Delta and eight in Upper Egypt. Up to February 1955, a total of 415,085 feddans of land and 4,617 feddans of orchards had been requisitioned. Now all the land within the scope of the scheme had been distributed.

Finance: Since then legislation has been enacted, granting financial autonomy to the Higher Committee of Agrarian Reform. The budget system, based on estimates of the funds required to carry out the reform, was found to be unsatisfactory and was replaced by a system providing for a balance sheet and profit and loss account to be established at the end of each financial year. (2)

Economic Holdings: Up to 1953 when the land reform was put into operation, more than 70% of all holders consisted of farms of one feddan or less whilst as much as 27% of the farm area comprised holdings of more than 100 feddans. The expropriated land is allocated to small owners, and is farmed co-operatively in large units. The large scale of operation and the system of crop-rotation in large areas is continued, thus ensuring the maximum return. Each farmer receives his quota in three different parts, each of which is under a different crop and is part of a united area of not less than 60 acres.

Guards against Fragmentation: The Agrarian Reform Law of 1953 guards against the fragmentation of holdings on land which has been redistributed. If, as a result of division among heirs or through sale, exchange or donation, the

(1) Maril, S. 'Land Reform in Egypt' Government Press, Cairo 1958. page 27

(2) Maril, S. 'Land Reform in Egypt' Government Press, Cairo 1958. page 155-166

land should be parcelled into lots of less than five acres, the parties concerned must reach an agreement as to who shall assume ownership.

The statistics of 1952 showed that out of the total number of 2,760,000 holdings with an area of 5,962,662 feddans there were 2,492,234 holdings of each less than 3 feddans occupying a total area of 1,573,917 feddans distributed according to size as follows:-

Table 5 Distribution of Holdings of less than 3 feddans in Egypt

Area of lots	Area in Feddans	No. of owners.
Less than $\frac{1}{2}$ feddan	413,551	1,459,167
From $\frac{1}{2}$ to 1 feddan	356,695	552,162
From 1 to 2 feddan	449,816	327,612
From 2 to 3 feddan	354,855	103,293
Total	<u>1,573,917</u>	<u>2,492,234</u>

A holding of less than 3 feddans is economically unsatisfactory; this means, therefore, that 27% of the cultivated area is not exploited efficiently, particularly so in view of the fact that even these small holdings are themselves usually further subdivided and distributed in different parts of the area.

Co-operative Organizations: In all areas where land requisition has been carried out, co-operative societies have been established, and farmers owning not more than five feddans of land must belong to them. Compulsory association is regarded as necessary at present, even though it is likely to become unnecessary later on as farmers come to realise the benefit of co-operation. By the middle of 1955, 125 co-operatives had been established; others are in the process of being organised in areas not affected by the reform. The initial capital of the co-operatives is derived from the payment of £E 1 per acre which farmers have to make upon registration of their land. (1)

These co-operatives are multi-purpose societies providing credit, farm requisites, including machinery, storage facilities and other agricultural and

(1) Marii. S. 'Agrarian Reform in Egypt'. Government Press, Cairo 1958. p.105 - 130.

social services required by their members, such as the selling of crops and livestock. A supervisor representing the Higher Committee for Agrarian Reform is attached to each co-operative, and through him the services of the technical staff of the Committee are also available for help and guidance to the members. The co-operatives have a special function in supervising the rotation of crops so as to ensure that land is utilized in the most economic manner.

Farmers are satisfied with the results already obtained through the co-operatives. In one of them production showed an increase of nearly 20% through use of better seeds and fertilizers. The co-operative was also instrumental in reducing irrigation costs and in providing better breeds of poultry, tractor service for mechanical tilling of the land, livestock insurance and other benefits. From 1952 to 1954 the individual members' income in this co-operative rose from £E 12.5 to £E 32.5, and the net income per acre from £E 12.5 to £E 41.5.

Credits have risen from £E 1,410,000 in 1953 to £E 2,142,865 in 1955. The co-operatives have carried out irrigation schemes and other services costing £E 350,000 in 1953 and £E 752,427 in 1955. They have sold, co-operatively, 27,666 'kantars' of cotton in 1953 and 230,000 in 1956 with a price of £E 2 more than the usual market price per 'kantar.' ⁽¹⁾

Machine Service: In the areas where land redistribution has taken place, machinery has been sold to the co-operatives (which were organized at the same time) for use by their members. Maintenance service is provided by local workshops. Machinery and tractors belonging to previous owners of requisitioned land have also been utilized.

Tax: A basic exemption equivalent to the first £E 4 of land tax was introduced in favour of farmers whose total tax does not exceed £E 20. ⁽²⁾

Other Measures: The aim of the land reform policy is not only to improve the nutritional level of the farming population, but also to expand agricultural production in order to support the industrialization of the country. Since 1953, a supplementary allocation of £E 30 million has been made for agricultural improvement programmes. A seed improvement scheme affecting both food and

(1) Marii, S. 'Agrarian Reform in Egypt.' Government Press, Cairo 1958. p. 118

(2) Marii, S. 'Agrarian Reform in Egypt.' Government Press, Cairo 1958. p. 29.

industrial crops was expected to encourage general use of selected seeds by the end of 1956. More than 90% of the initial cost of this programme, £E 7 million, will be repaid by the farmers. (1)

Under another scheme, 300,000 feddans will be reclaimed at an expenditure of £E 6 million and under the soil conservation programme, irrigation and drainage systems are being improved, afforestation of sand dunes has been started and laboratory of the latter programme is £E 10 million. Measures have also been introduced to combat plant and animal diseases; this involves the construction of two grain elevators and the formation of 300 veterinary units to render free service to farmers.

Impact of Land Reform measures: The reduction in rents affecting two-thirds of the cultivable area in Egypt has, according to an estimate, of the Ministry of Agriculture, added £E 40 million annually to the income of the tenant class, while wages of agricultural labour, under the wage adjustments provided for by the land reform law, have gone up, according to official estimates by 50%. (2)

The effect of redistribution of land, reduction in rents and other measures taken in connection with reform has been to provide a stimulus to agricultural output. In areas where land reform has been carried out the production of wheat is estimated to have risen by 30% cotton by 10% and sugar-cane by 15%, as compared with the previous yields. The net income per feddan and the average annual individual income have increased by 100% to 300% since the reform. (3)

The agrarian reform has decreased the price of land and thereby diminished the incentive to speculate in land. Partly as a result of the reform, considerable sums have been diverted into investment in industry and commerce.

Land Distribution: Land distribution was based on an extensive social survey of the areas affected by Land Reform Law, taking into consideration the cost of living and the production capacity per feddan. Priority was given to the farmers already working on the requisitioned land and then to those with large

(1) Permanent Council of National Production, Report 1955, Government Press pages 24 - 37

(2) Essawi, C. 'Egypt at Mid Century.' Oxford University Press, London 1954 page 127

(3) Marii, S. 'Agrarian Reform in Egypt.' Government Press, Cairo 1958. page 245.

families. (1) The distributed holdings were between two and five feddans for the smaller farmers or those who owned less than five feddans and were in great need and could cultivate the new holding.

To arrive at a fair basis of distribution, the individual members of the family were allotted a standard unit according to their age as follows:.

Under 7 years	= $\frac{1}{4}$ unit (one unit = $\frac{1}{2}$ feddan)
From 7 to 14 years	= $\frac{1}{2}$ unit
From 14 to 21 years	= $\frac{3}{4}$ unit
Over 21 years	= 1 unit
The head of the family	= 1.4 units

The large 'multiple' families were divided into two or more smaller constituent ones, each of which received $\frac{1}{2}$ feddan less than they would have received as a separate family. (2)

The new owners are to pay the price of the land in payments over 30 years with an interest of 3% and a charge of 15% for administrative expenses. The annual payment is about £E 14 per feddan. This is less than half the rent of the land under ordinary conditions.

System of Land Division: After the survey of the requisitioned land the division procedure was carried out on the field after studying the irrigation and drainage system in every area. In the light of this study, the land was divided according to the rotation system (which is usually three rotations) so that every land-holding could be divided conveniently into three or two plots according to the rotation system. (see fig. 1.)

Tenancy System: As already mentioned there were two existing systems of land tenancy. The first was the defined or fixed rent which the land lords who live in towns prefer and under which the farmer usually takes the risk of any variation in land production. In this case the land reform law has now fixed the rent at twice the amount of tax paid on the land. The second way was the co-shared rent where both the owner and the farmer participate in the expenses

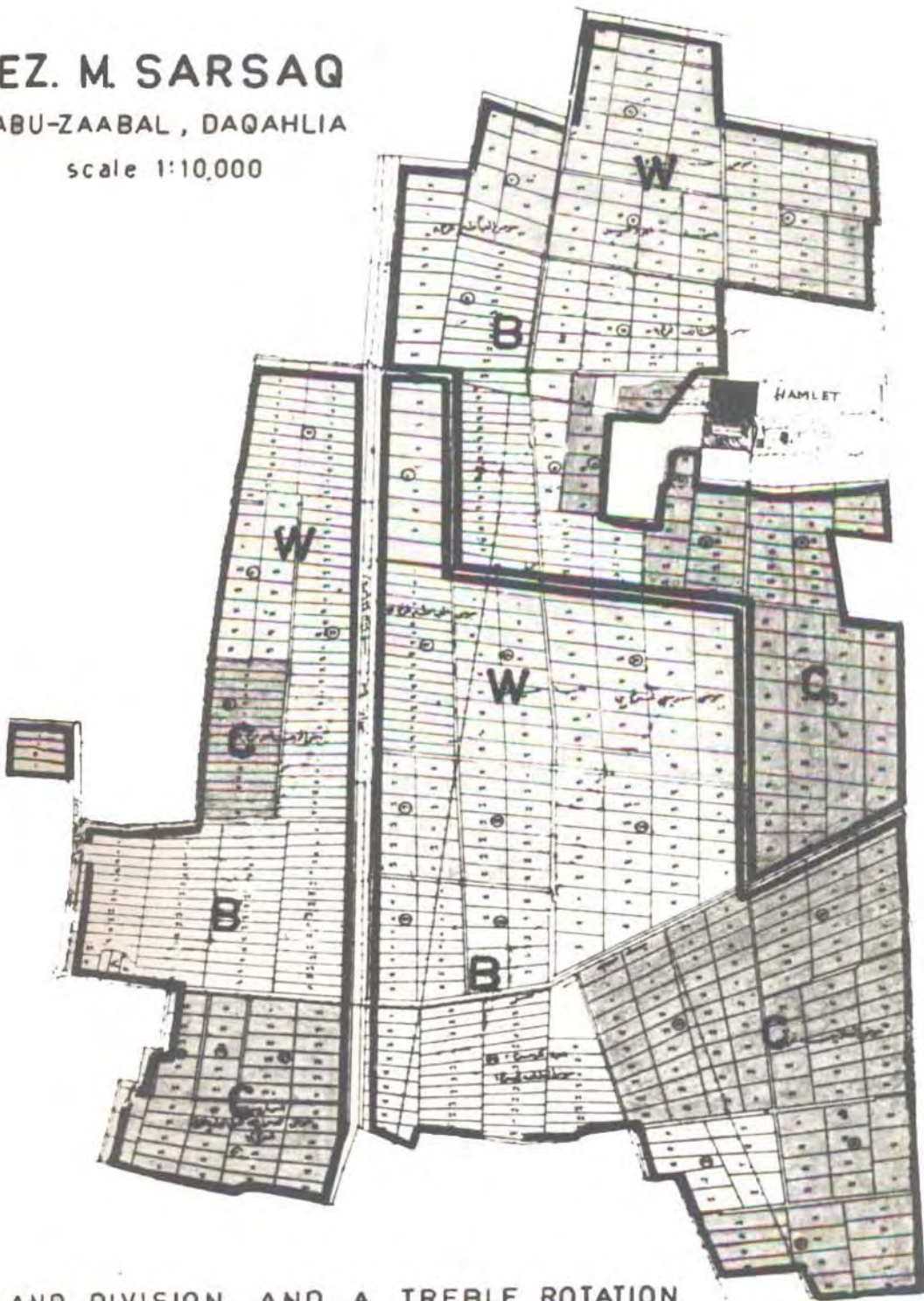
(1) The family as defined for purposes of social research 'is a group of individuals getting their livelihood from one and the same source on the land rented by the head of the family, no matter whether members of the group reside in one or more places.

(2) Karil, S. 'Agrarian Reform in Egypt.' Government Press, Cairo 1958. p.81-84.

EZ. M. SARSAQ

ABU-ZAABAL, DAQAHLIA

scale 1:10,000



LAND DIVISION AND A TREBLE ROTATION SYSTEM ILLUSTRATED IN AN AREA UNDER THE MANAGEMENT OF THE LAND REFORM COMMITTEE.



Cotton



Clover (bersim)



Wheat

of cultivation and then divide the product between themselves. This system, even when operating fairly does not encourage the farmer to give the land his fullest attention and care.

It is worth mentioning that the rented area has been increased from 17.3% of the whole cultivated land in 1939 to 60.7% in 1949, then decreased to 57% in 1954. Over the same period the rental value of the feddan increased by 472% while ^{the} cost of living rose 293%. (1)

Housing: It has been decided that a reasonable area of the requisitioned land should be reserved near the old village for future extension and the building of new rural houses for the farmers who benefit from the scheme. The Land Reform Department finances the building operations and the costs are then paid back by the farmers over long periods at a reasonable interest.

This scheme has been carried out in 13 districts where 1159 houses have been built at a cost of £E 300 to £E 400 per house. (2)

Limitation of ownership to 100 or 50 feddans:

If the ownership limit were to be fixed at 100 feddans only 24,000 additional families (120,000 persons) would benefit as compared with the 1.2 million persons who benefitted under the Government's scheme; but if the limit were to be lowered to 50 feddans the number of the additional persons who would benefit would rise to a total of 450,000 persons.

(1) Marii. S. 'Agrarian Reform in Egypt', Government Press, Cairo 1958. p. 250

(2) Marii. S. 'Agrarian Reform in Egypt', Government Press, Cairo 1958. p. 258

Planned Collective Rotation System

At present the agricultural Act No. 500 of 1955/56 lays down that in the areas of perennial cultivation (77% of the total cultivated land) the area to be cultivated by wheat should not exceed 33% of the area of any holding. Act No. 501 of the same year is similar to No. 500 and applied the same limit on cotton cultivation. These two Acts apply even to the tiny fragments of cultivated land and in effect tend to increase the fragmentation of the cropped areas. It is well known that every crop makes different demands on man-power, on water resources and on finance in its production. In the case of the fragmented and tiny holdings many complications in cultivating occur from one holding to another due to the differentiation of the methods used for the different crops on each holding. A loss in the overall production in the land is inevitable so long as this trend continues.

In order to make the provision of the above laws work more satisfactorily it is now proposed to adopt a planned three or two rotation system to larger areas of 'hods' divisions by the grouping of the small and fragmented holdings. Under this system the farmers have to co-operate with respect to their obligation to produce the different crops. This system will help in (1) preserving the land fertility, (2) regulating the cultivation process, (3) saving irrigation water and regulating drainage, and (4) combatting pests and harmful weeds.

The planned rotation system has been applied by the Ministry of Agriculture in the villages of Domera, Nawag and N. Semia, Gharbia. (See fig. 2) As already mentioned before the output from the land covered by this experiment increased by 20% in the case of wheat, 5% in the case of maize, and 19% in the case of cotton. In the area of Shebia El-Kom, in the Mid-Delta the same system has reduced the costs of irrigation from ££ 2.188 per fed an to ££ 1.030.

The system does not call for much monetary expenditure except that necessary for surveying, planning and technical supervision in its application.

The application of the system is faced by many practical difficulties due to the complicated system of land tenure, heredity laws, social and psychological instincts among the peasant group. These difficulties have been discussed by Mr. S. Marii, the Minister of Agriculture and Land Reform in his Book

N. SEMLA

G H A R B I Y A

Scale 1:5000

TYPICAL LAND FRAGMENTATION AND APPLICATION OF TREBLE ROTATION

- C** Cotton
- W** Wheat
- B** Clover (Bersim)



FIG. 2

'Land Reform in Egypt'.⁽¹⁾ The Minister suggested that the three rotation system is to be applied as a first step towards consolidation or co-operative farming even though the fragmented and tiny holdings remain as they are. This means that a farmer of, say, one feddan has to cultivate his whole holding by the crop determined by the rotation system, for example, cotton, while another farmer has to cultivate his feddan by winter crops in the same year and according to the same rotation system. In this case the first farmer has to co-operate with the second in cultivating a part of the second's holding for winter crops in return for the second farmer cultivating an equal area of his land with cotton. In the following year the crops would probably be reversed. The peasant group will then appreciate and practice co-operation so that in the future it will be easier for the fellah to respond to the new planning system of cooperative farming and also appreciate the benefits to be derived from the consolidation of the fragmented lands.

The Nawag Experiment.⁽²⁾

The importance of the Nawag experiment lies not only in the way it was implemented and the results it achieved, but also in the prospect which it might offer for adopting the co-operative farming system. The experiment was carried out in the village of Nawag where there was an acute state of land fragmentation. The purpose of the experiment was to induce the fellahs to apply a controlled rotation system which has been discussed before. The success of this pilot experiment for controlling agricultural rotation in Nawag justifies the hope for a rapid increase in the agricultural production in the country. Such a programme would provide an increase in land return of not less than 30%. Also over 2.5 million feddans of new land could be cultivated on the available water. The amount of water that could be saved by controlled irrigation is estimated at 30% of what is actually being used in uncontrolled areas.

The first step in the implementation of this experiment was to induce the inhabitants of the village to join the co-operative society which planned to provide every farmer in the village with fertilizers on credit at official cost prices. The amounts of fertilizers were delivered from the Credit Bank Stores

(1) Marii, S. 'Agrarian Reform in Egypt.' Government Press, Cairo 1958

(2) A village in Gharbiya Province. The experiment was carried out by M. Fawzy, the Director of Agrarian Reform Co-operative Department of the Ministry of Agriculture - Cairo, 1958

at Nawag on the day after being ordered. The farmers were impressed by the effectiveness of the measures taken. Every holder joined the co-operative society and then requested additional goods.

The second step was to spread confidence in the co-operative so that the initiative might come on the fellaheen's part to demand insecticides for controlling the cotton worm. When the subject was raised at a general meeting, the farmers were told that since the insecticide was harmful to livestock, it would be more practical to use it in larger areas of cultivation devoted solely to cotton production rather than on small dispersed plots within areas of mixed production. Moreover the authorities demonstrated to the fellaheen how it was possible to extend credit against the cotton crop.

When the members of the holders' board became convinced of the soundness of the scheme, the Distribution Department of the Agrarian Reform Organization planned an agricultural rotation for Nawag on the basis of combining every three neighbouring blocks (hods) into one rotation. This was then discussed by a committee from among the members of the co-operative who later on took the initiative in implementing the scheme.

After several general meetings - usually held after Friday prayers - and after heated discussions caused usually by the feeling of suspicion and the sense of being interfered with in a private business matter, the argument was cleverly directed from one item to another until it was turned to the question as to which blocks (hods) should be cultivated by cotton, which by wheat and which by clover. Finally a map was drawn up and displayed at the house of ^{the} Omda (The Mayor).

Three committees were then established to see to the implementation of the scheme, and to deal with the different difficulties which might arise during the operation. The farmers were left to their own initiative. Thus the experiment began its course.

This experiment could be a half-way step towards co-operative farming. The psychological and the human sides of the problem were the most difficult to overcome. The success of any experiment of this nature depends, to a great extent, on the ways and means employed to induce the farmers to take the initiative themselves in their own interest.

EL-TAHEREER PROVINCE

One of the great experiments in desert land reclamation was the Province of El-Tahreer. The scheme envisaged the reclamation of about two million acres of the western desert adjacent to the Delta and bounded on the North by El-Noubaria channel and the Rayah El-Beheri channel on the East (See map No. 4)

The Province is accessible both by the Cairo-Alexandria desert highway and by the Cairo-Etay-el-Baroud railway. It can also be reached by El-Khatatba road or by the water way of the Riyal-El-Beheri channel on the East.

In addition to increasing the area of cultivated land in Egypt the scheme aimed to create a healthy environment for a rural community. The rural agricultural structure is based on collective farming, totally different from that to which the fellah is habituated. The fellah was to be faced with a different way of living, different environment and even different dress.

The settlers were to be chosen from the neighbouring Provinces in the Delta. In one area four hundred families were chosen to cultivate the new land. To qualify, the parents have to be between 25 and 30, have two or three children and pass rigorous tests on health and social habits.⁽¹⁾ They are not allowed to bring any relatives or dependents. On arrival they are provided with a house, a uniform and a dossier. Every month or so, the social workers fill up lengthy forms on the villagers' general behaviour, hygiene and marital relations.

Theoretically the land belongs to the families but since there is far too much work to do, some 10,000 labourers have to be imported from nearby delta villages.

The labourers have no dossiers and can wear what they like, but otherwise do the same work as the selected few.

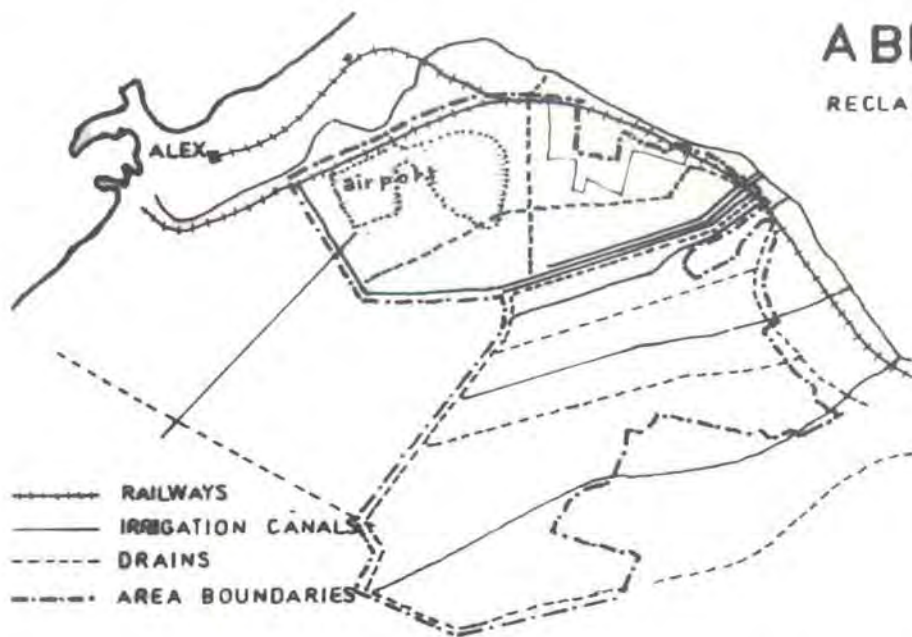
The settlers are received in the village of Omar-Shahim for a training period of six months so as to get accustomed to their new environment, way of

(1) 'The Engineers', Magazine. 'El-Tahreer Province' Article, Cairo July 1956

ABIS AREA

RECLAMATION SCHEME PT4

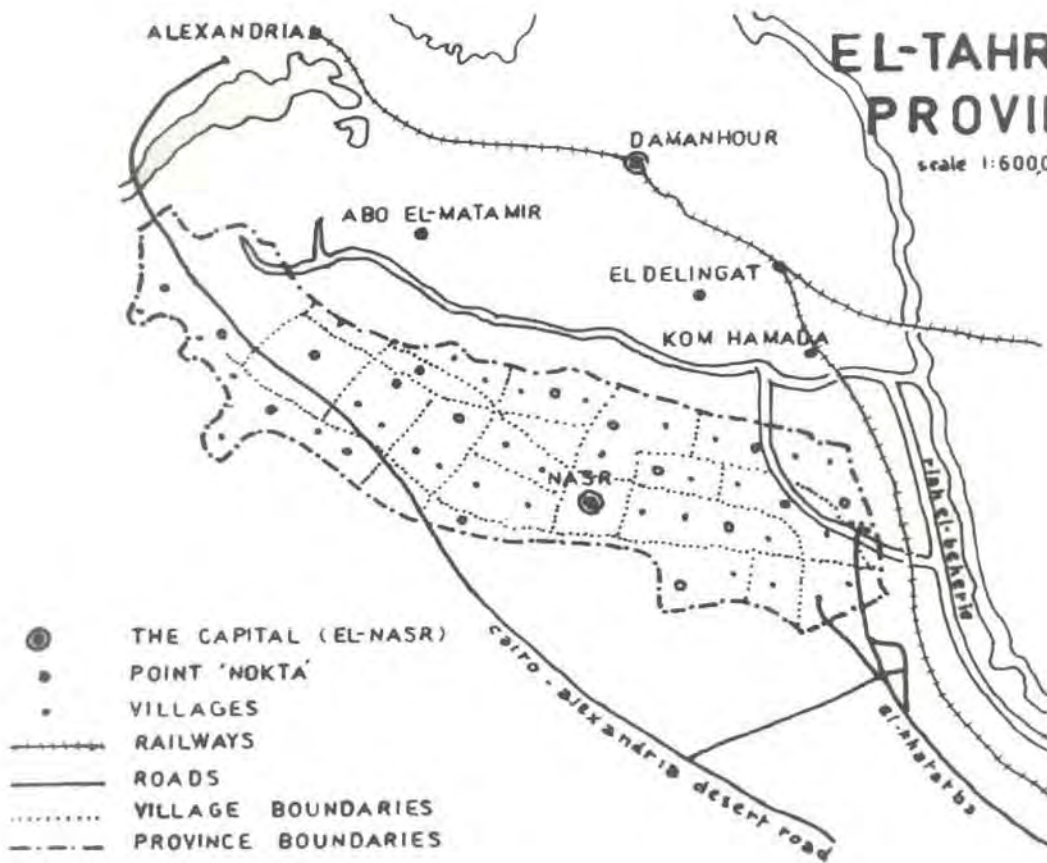
scale 1:300,000



- RAILWAYS
- IRRIGATION CANALS
- - - - DRAINS
- · - · AREA BOUNDARIES

EL-TAHREER PROVINCE

scale 1:600,000



- THE CAPITAL (EL-NASR)
- POINT 'NOKTA'
- VILLAGES
- RAILWAYS
- ROADS
- · · · · VILLAGE BOUNDARIES
- - - - PROVINCE BOUNDARIES

MAP NO. 4

living and the new ways of cultivation where mechanization plays a great part. The settlers are then distributed among the different villages of the Province.

From the economic point of view the Province is supposed to be a self-contained unit after a short period from the beginning of the reclamation procedure. The profits in the future are to compensate the capital and expenses of the scheme.

Regional Planning: Within the defined boundaries of Liberation Province lie 600,000 feddans. Around these boundaries are 620,000 more feddans which are due to become part of the Province to bring its ultimate total area to 1,220,000 feddans (See map No. 4)

The Starting point of Liberation Province is an area of 34,000 feddans irrigated by the Liberation Canal which branches off the Rayah El-Beheri and flows into the Nubariah Canal. This area is now being prepared to establish the first of the Liberation Provinces' 18 Markazs (Centres). Each of these Markazs comprises two 'Noktas' (Points) A 'point' is a large village unit which embraces six smaller villages. (1)

The deterrents of the village size were:

1. The village school with 230 children
2. The reasonable distance of the fellah's journey to work.

The Village: It has been estimated that the average family size in rural areas is six persons including one child of the compulsory education stage. In this case the size of the school is the main determinant of the size of the village. The number of families will then amount to 230 with a total population of 1,400. If every family is given an area of five feddans with an addition of 10 feddans for the built-up area and other additional areas for roads, canals and drains, the total village area was estimated to be 1,400 feddans.

The Nokta: The 'Nokta' (Point) areas were estimated on the number of population which can be served by one social centre. (2) This number was estimated at

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- (1) Sidky. A and El-Sadr. S. 'The Planning of El-Tahreer Province' Report (Arabic Text) Cairo 1953
- (2) Sidky. A and El-Sadr. S. 'The Planning of El-Tahreer Province' Report (Arabic Text) Cairo 1953.

1,700 i.e. 1,700 families. This number includes the population of the 'Point' and six villages. The 'Point' area will be about 1,600 feddans plus 8,400 feddans for its 6 villages giving a total area of 10,000 feddans.

In every 'Point' there is a primary school for about 200 children and a rural or industrial school for 20% of the number of children of the compulsory education period, i.e.

$\frac{20}{100} \times \frac{1}{6} \times 10,000$ or 330 students. There is also a Mosque, a social community centre and a co-operative society.

The Markaz: The Markaz (Centre) size is determined by the number of population which can be served by one health centre⁽¹⁾. This number was estimated at 33,000 i.e. 5,500 families. This number is equal to the number of population of the 'Markaz' itself, in addition to that of two 'Points' and 18 villages. In this case the population of the Markaz itself will be 33,000 $(2 \times 1800 + 18 \times 1400) = 4200$, i.e. 700 families. The cultivated area which they need will be 3,500 acres. In this case the area of the 'Markaz' itself will amount to 4,600 acres.

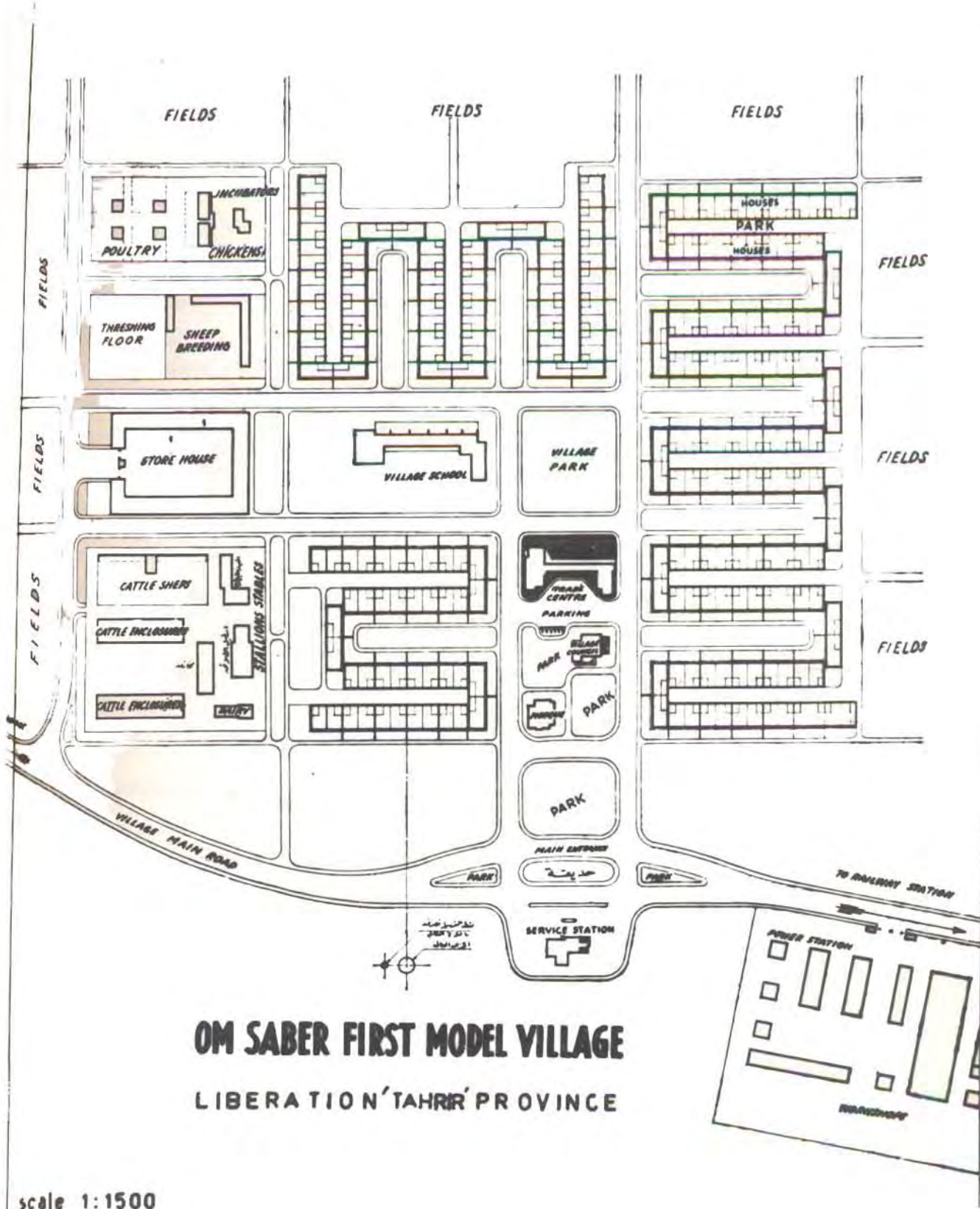
In every 'Markaz' centre there will be three primary schools serving 700 children, one rural or industrial school, two secondary schools serving 1400 students. In addition there are to be religious, communal, commercial, marketing and health buildings and the Markaz centre will also serve as the industrial centre of the area.

A typical village plan from the Province is shown in figure (3) - the plan for the village of Qm Saber.

Costs: The rural house which consists of a living-dining room, 2 bedrooms, a bathroom, a kitchen, a store and a back yard covers an area of 54 sq. metres. The over-all cost of the house is estimated to be ££ 250.

The over-all cost of the village buildings was estimated to be ££ 66,000

(1) Sidky A. and El-Sadr, S. 'The planning of El-Tahreer Province' Report (Arabic Text) Cairo 1953.



OM SABER FIRST MODEL VILLAGE
LIBERATION 'TAHRIR' PROVINCE

scale 1:1500

FIG. 3

while that of the 'Point' was £100,000 and that of the Markaz ££ 370,000. The Markaz district which contains the Markaz i self, two 'Points' and 18 villages will cost about ££ 3,000,000 including residential and public buildings. These costs do not include that of road and street construction or any other public services. (1)

Irrigation: The main irrigation canal is the 'Liberation' canal which branches from 'Ryah-El-Menoufi'. This canal is able to irrigate 24,000 feddans by perennial irrigation. The branch canals, can irrigate a further 3,000 feddans each. In summer time pumping machines are used to irrigate most of these areas when the water level lowers by two metres. Every pumping station is able to irrigate about 750 feddans. Other areas in the Province are irrigated by the spray system which saves about $\frac{2}{3}$ of the amount of water needed in the case of the ordinary level irrigation. (2)

A series of wells have been dug at depths ranging between 50 and 70 metres. These wells are used to irrigate about 40% of the area of land which is irrigated by level irrigation. Every well can irrigate an area of about 250 acres.

Of the whole cultivated area 20% is kept as orchards, 20% for permanent grass, and 10% for vegetables. The remaining 50% of the area is reserved for other crops.

The Liberation Province is, as the Economist, July 28th 1958, Correspondent puts it, 'Egypt's showpiece oasis'. (3) It was also, before the Ministry of Agriculture recently cut down its size, one of the Government's most expensive miscalculations but, at least, the scheme has had a spectacular success in showing what can be grown on sand: a bleak stretch of desert has blossomed into a garden of oranges, melons, strawberries and roses. It was administered by a more or less autonomous organization in Cairo whose directors made some serious blunders, including the building of a citrus canning plant long before there was a chance of the orange trees bearing fruit, and the creation of factories

(1) Sidky. A. and El-Sadr. S. 'The Planning of El-Tahreer Province' Report (Arabic Text) Cairo 1953

(2) The Engineers' Magazine. El-Tahreer Province, Article, Cairo July 1955.

(3) The Economist 'Brave Egyptian World', Article, July 28, 1958.

ning out retail goods which no one in the area could possibly afford to buy. A new village was built beyond the limits of the irrigated land without regard to the absence of local water supplies. These extravagances are now being lopped off one by one. The Cairo office has been disbanded, the factories closed down, and all agricultural luxuries severely pruned by the Ministry of Agriculture. But its experts find the involved plan for social welfare rather more difficult to deal with. In the words of the Economist the 'Liberation Province provides an egregious example of social planning run wild'. On the other hand, there is no denying that it has been a successful experiment in desert reclamation.

Point Four Land Reclamation Schemes (1)

The Permanent Council of National Production gave the Egyptian American Land Reclamation Department authority to work in 'Abis' in El-Behera Province and in Kom-Oshim in El-Fayoum Province. The P.C.N.P. contributed a sum of ££ 5,450,000 and the Point Four (American Technical Assistance) a sum of £ 10,000,000 (i.e. ££ 3,469,700) (2)

'Abis' area is about 2400 feddans, all belonging to the Government in Markaz Kafr-el-Dawwar, about 3 miles south-east of Alexandria. This area was originally a part of the lake of 'Maryout' where all the drains of El-Bahera Province end (See map No. 4). This fact created a great problem due to the great quantities of salts which were mixed with the soil. A great system of irrigation and drainage was essential in that area. A belt of 15 draining pumps were temporarily erected, to be replaced later by two pumping stations in El-Kalaa and El-Jeahoudi.

The work began in the area in February 1954 when 5300 acres were flooded and washed and cultivation begun on 2400 acres. The first village was built for the first settlers in the area. The village contains 192 one-storey houses, 70 two-storey houses, 24 houses for employees in public services and 12 houses for

(1) American - Aided Schemes

(2) Permanent Council of National Production, Report 1955 (Arabic Text)
Government Press, page 73

As technical officials. A mosque, a rural school, a social centre, a clinic, public baths and washing places, an administrative building, five shops a co-operative society and a store for manures have also been built. Other public services have also been provided.

The village construction cost £E135,000 while the cost of public services amounted to £E 92,000. (1)

The new settlers who came from the neighbouring areas were considered as tenants for a period of one year after which they were eligible to own their lands if they proved to be efficient.

The agricultural structure was based on co-operative farming in which every family invests its five acres - the same system as has been adopted in El-Tahreer Province and the Land Reform Areas.

(1) Permanent Council of National Production, Report 1955 (Arabic Text)
Government Press page 73