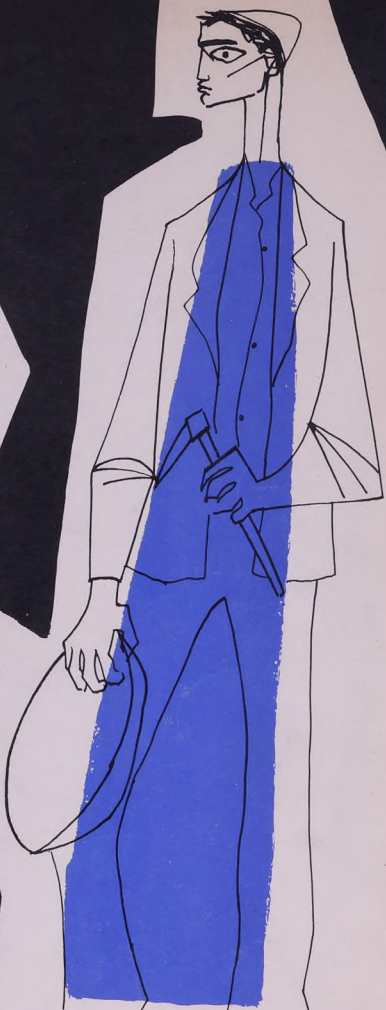
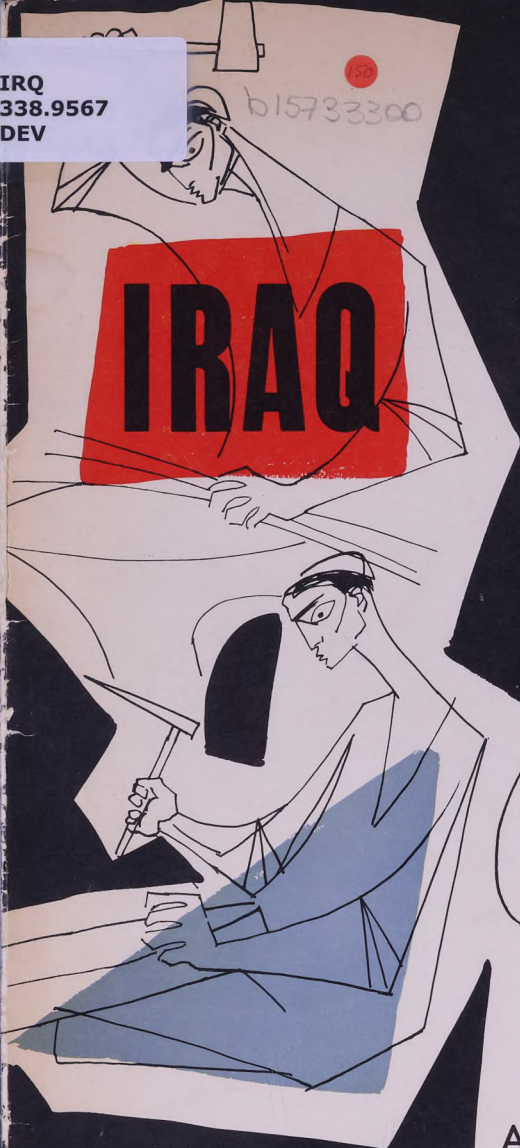


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THE DEVELOPMENT BOARD AND
MINISTRY OF DEVELOPMENT

A PROGRAMME OF
DEVELOPMENT

IRQ
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IRAQ

A PROGRAMME OF DEVELOPMENT

THE DEVELOPMENT BOARD AND
MINISTRY OF DEVELOPMENT

BRIDGES OVER 50 M



Completed
and open to public



under construction



under survey or tender



construction
approved in principle

DAMS AND BARRAGES



completed



under construction



under tender







construction
approved in principle



DEVELOPMENT

HOUSING SCHEMES

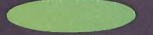
-  Houses completed
-  Houses under construction
-  Houses under tender
-  Houses under study



Pipe-lines



Forests



Existing cultivated area



proposed cultivated area



desert

PROJECTS



FOREWORD

PRESENTED here is a summary of the development programme which is being carried out in Iraq with all possible speed by the Development Board and Ministry, to ensure a higher standard of living, a greater national income and a fuller and more abundant life for all.

In the execution of this gigantic yet practical programme based upon sound economic, scientific and technical principles, we follow an open-minded policy. We call to our help capable minds and capable hands from all the friendly countries. Thus, the development work, which is purely national in scope and character, is at the same time an example of peaceful international cooperation at its best.

At present, 220 foreign experts and technicians, as well as 10 United Nations technical experts are working in the various fields of our many sided development programme. This in detail involves thousands of undertakings from village schools to large industrial plants, from the workers' and small farmers' modest dwellings to big modern hospitals, university buildings, and scientific institutes.

Of necessity, at first we had to invest very heavily in flood control, irrigation and drainage work.

An increasing investment is now being made in power, communications, housing, industrial training and industrial development. What we seek is a balanced economy.

We are happy to record here that the Development Board and Ministry have given increasing attention to the problems of housing, land settlement, and distribution of State domains among the farmers.

The Development Board has reclaimed and revived large tracts of wilderness. These have already been divided among the farmers who are turning them into prosperous and productive rural districts.

Another happy feature worthy of recording is the projected creation of the Rural Development division, which is to be incorporated in the Development Ministry as a new section, to pave the way for overall development and progress in the rural areas.

Indeed, since the establishment of the Development Board in 1950, we have covered a good deal of ground. And we will certainly continue to take giant steps in the development field under the patronage of His Majesty the King and His Royal Highness the Crown Prince who have graciously given their undivided attention to this momentous work. May God save them both to lead their people to a greater, brighter and more prosperous future.

HISTORY AND ORGANIZATION

FLYING out of Asia or into Asia along what today is one of the main air corridors of the world, the traveller comes to two great rivers flowing through what looks from a great height to be a parched desert. On a very clear day he may discern one of the five other considerable rivers that come tumbling down from the high wall of the Zagros mountains in the east where the land rises abruptly to the Iranian plateau.

Beneath him lies Mesopotamia, the land of the two rivers or, in its modern form, the Kingdom of Iraq.

The past hundred years of archaeological investigation have revealed Iraq as the centre of the earliest human civilisation from which cultural impulses went out to other parts of the world.

The vast stretch of time from the beginning of history to the Arab era witnessed the flowering of many civilisations. The civilisation of the old Babylonian Period has a special significance in the history of culture.

With the coming of Islam in the Seventh Century, a new epoch began in Iraq and all the Middle East. During the 9th and 10th Centuries, Arab-Islamic civilisation reached its zenith in the cultural field. Translations were made of scientific works and those of astronomy, medicine and philosophy. These were followed by original studies, the Arabs' own contribution to culture.

The Caliphs paid particular attention to agricultural wealth and the country was covered with a network of canals and became the granary of the Islamic Empire. Iraq merchants and ships crossed lands and oceans from Spain to distant China, bringing wealth, prosperity and new cultural influences into their country. An efficient system for financing commerce and industry was contrived.

But all the prosperity and splendour was eclipsed by the Mongol invasions in 1258 and 1405. Since then, Iraq has been subjected to a series of Persian and Turkish invasions. After Murad IV occupied it in 1658, it remained an Ottoman province until the end of World War I.

All through the sometimes glorious and sometimes tragic pageant of the millennia, there has been a key to the prosperity or the poverty of that saffron brown plain where such extraordinary chapters of the human story have been written. That key was water.

It is a land that will yield nothing except to human industry and human ingenuity. That circumstance is possibly the explanation of the greatness of the human accomplishments that have been recorded there. That circumstance is undoubtedly the explanation for the wretched chapters of misery and failure that have also been written into the record there.

The inhabitants of Mesopotamia must either be the masters of the vast waters that roll down in the spring and the sluggish streams of the drought season, or grovel in poverty. Given the mastery of their waters and they



H. M. King Faisal II, H. R. H. Emir Abdul-illah, The Crown Prince, A New Nation in an ancient land, united around the crown, the young Iraqi people are building together their common future.

live in a land of abundance. Without it, they can barely exist. There is no middle way and no mediocre solution to the drama which is at the same time their opportunity and their predicament.

The rise and fall of the Mesopotamian civilisations has been closely connected with water and flood control.

Since the establishment of National Government in 1921, the desire to develop Iraq after its four centuries of stagnation under foreign rule was paramount. Certain important works were completed. However, good intentions were hampered for years by lack of funds and technical staff. By 1950 more revenues from oil became available and 70% of these ever increasing funds were allocated for development. A tremendous opportunity was at hand. There can be few countries in the world where the sums available for capital development exceed by nearly one third the national budget, which itself has nearly trebled within a decade, but so it is in Iraq: Iraq's national budget, amounting in 1947-8 to 25 million dinars (equivalent to 25 million pounds sterling), is now up to 65 million, while allocations for the current development programme average 85 million per annum. There can also be few countries in the world where the problem of spending such relatively large sums in the wisest and most beneficial way has been met with such success. The Development Board is Iraq's unique solution to this problem.

As originally instituted by the Law of April 25, 1950, the Development Board was set up as an independent body to plan the expenditure of 70% of the oil revenues on the development of Iraq. In 1955 this Law was amended and a Ministry of Development was created to execute the decisions of the Board.

CONSTITUTION OF THE DEVELOPMENT BOARD

The Board has ten members, all having the right to vote: cabinet members are the Prime Minister, who is chairman, the Minister of Finance and the Minister of Development; the remaining seven members, none of whom may be civil servants, are chosen for a renewable five year term by the Council of Ministers and must include three specialists: one in finance and economics, a second in irrigation, and a third in a subject selected by the Council of Ministers.

FUNDS

The revenues of the Board are, by law, made up of 70% of the oil revenues, funds allocated to the Board by legislation, loans raised by the Board and guaranteed by the Government and other revenues arising from completed projects before they are handed over by the Board to the appropriate authority. Revenue for the current programme was estimated as follows:

585,081,218 dinars from oil revenues (a higher figure expected from increased oil production),

59,226 dinars from the Tharthar Project Loan,

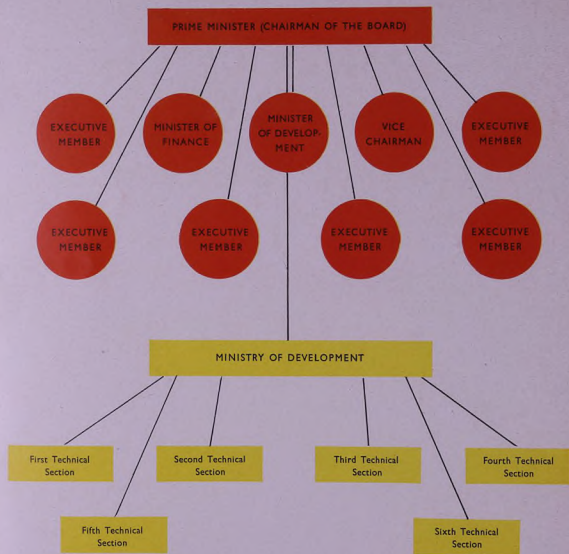
170,000 dinars from miscellaneous sources,

4,764,000 dinars from interest.

*The Machine Age in Ancient Mesopotamia: An Iraqi *usakër*, trained in modern techniques, tests equipment high on the wall of the Dokan Dam, a major construction project.*



THE DEVELOPMENT BOARD AND MINISTRY OF DEVELOPMENT



Iraq is Building a Balanced Economy. Modern industries are appearing in all parts of the country. ➔





*Royal Medical City-Baghdad
View from the river (southwest).*

PROGRAMME

The Development Board presents to the Council of Ministers through the Minister of Development a General Programme for a maximum seven year period. After the programme has been approved by the Council of Ministers and Parliament, it becomes law and must be implemented within seven years. Before the end of March of each year, the Minister of Development submits to the Council of Ministers a report on the Board's operations for the preceding year, indicating the extent of completion of various projects, and the expenses incurred and expected to be incurred up to the end of the financial year under consideration. By this means the responsibility of the Board to Parliament and, ultimately, to the people of Iraq, is ensured.

It is in the General Programme of the Development Board that full details of Iraq's development can be found. There are two main categories of projects: major capital development projects are covered by specific votes of the General Programme and executed through the Ministry of Development; investigation and surveys, flood control, irrigation and drainage schemes, main communications, large health and educational institutes, industrial, mining and power projects, housing and large scale agricultural and forestry schemes are covered in the current General Programme by Votes I-VIII of Chapter I, accounting for nearly 451 million dinars of allocations. Smaller projects are covered by votes IX-X of Chapter II, accounting for over 69 million dinars; these are short term projects in irrigation, drainage, roads, housing, and improvement of rural areas, for which funds are provided through the Ministry of Finance to the relative government departments to execute under the Board's supervision. In addition, the



Board sometimes advances loans to Government Banks and official and semi-official bodies to enable them to expand their activities.

POLICY

The General Programme of the Development Board is the outcome of long and careful investigation and deliberation, in which the overall natural productive resources of Iraq and the needs of its people have been taken into account. Iraq's potentialities are manifold and the needs of her people are pressing. It is the duty and responsibility of the Board to ensure that the money is spent to the best advantage; to investigate thoroughly the extent and value of resources available; to draw up far sighted and comprehensive plans often stretching ten to fifty years into the future; to decide the priority of projects within such plans, their interrelation and their effect on the national income; to prevent waste of money and effort on unsound schemes and, in a word, to focus all resources now available to Iraq in matter, money and manpower, whether in years to come through some country wide drainage scheme, or within a year or so through housing estates and hospitals, to the one ultimate end—the improvement in the living standards of the people of Iraq.

EXECUTION

The programmes of the Development Board are executed by the Ministry of Development under the control of the Minister. The successful planning and realisation of Development Board programmes are largely the result of the highly specialised organisation of this Ministry.



Khadimain Bridge



Dam under construction in the Dakan Gorge



Modern Iraq: partial view of the Daura Refinery built by the Iraq Government to produce petroleum products for the domestic market from Iraq oil.

There are now six technical sections, each concerned with some main aspect of development:

- Section 1—for Irrigation and Drainage, flood control and Artesian Wells;
- Section 2—for roads, bridges and buildings;
- Section 3—for industry, mining and electricity;
- Section 4—for agriculture and forestry;
- Section 5—for housing;
- Section 6—for rural development.

There is also a Directorate General of Summer Resorts and Tourism. The creation of lake reservoirs, the implementation of forestry schemes and improved communications will eventually make the summer resorts an important factor in the economy of the north. Formerly attached to the Ministry of Economics, the Miri Sirf Land Development and Exploitation Committee for the reclamation and distribution of arable lands and the encouragement of small holdings is now an adjunct of the Ministry of Development.

The projects included in the programme are sanctioned by Parliament and entrusted to reputable firms of consulting engineers. Each firm studies in detail the project entrusted to it and decides on its feasibility and the extent of the benefit it will bring. It is then returned, through the Ministry, to a steering (i.e. advisory) committee, composed of all executive members of the Board except the Prime Minister and the Minister of Finance. After review, it is passed to the Board for final decision. Once accepted and incorporated in a general programme approved by Parliament, the project will come back to the Ministry of Development for execution. It will

be offered for tender with the relevant specifications and documents prepared by the consultants, who will also advise on the final award of the tender. The financial and legal relations of the contractor with the Ministry will, of course, be handled by the relevant directorates general, while the technical section concerned will maintain strict supervision through resident engineers to ensure that the specifications are fully complied with. Only with the completion and satisfactory performance of a project does the responsibility of the Ministry of Development cease. The project is then handed over to the Ministry concerned if it is for example a hospital, a school or a road, or perhaps to a specially created body in the case of some new industrial plant. In the case of long term irrigation, drainage or land development projects it may be many years before the responsibilities of the Ministry and, therefore, of the Development Board come to an end.

Funds, policy, programme and organisation for a comprehensive, thoroughly integrated development programme require highly specialised knowledge and skill to become operative. Lack of such knowledge and skill could have formed a serious obstacle to Iraq's realisation of her resources and opportunities. This handicap has been successfully overcome by Iraq's Development Board and Ministry of Development.

The planning and execution of Iraq's Development Programme come from the use of the best minds and the best skills available regardless of nationality. Great emphasis is of course laid on the training of Iraqis but many foreign technicians and United Nations experts are employed by the Board and Ministry of Development.

It has also been the practice of the Iraq Government to invite two specialists from friendly foreign countries to become members of the Development Board.

For the study and preparation of projects, the Ministry of Development has drawn on the experience of various consulting firms of international repute. Tenders have been awarded for execution to about 40 different foreign contracting firms. It is interesting to note that Iraqi contracting firms are gradually coming into their own, especially in road and building contracts.

The Development Board and Ministry of Development have up till now used expert knowledge and skill from almost every country, from the old world and the new, from the orient and the occident. About twenty two different countries have taken part in Iraq's Development Programme. There can be few areas in the world today with such a concentration of international specialists and firms of international repute.

ACHIEVEMENT

Scarcely a decade has passed since increased revenues put Iraq soundly on the road to development and improvement. Within that time, the Development Board has prepared two general programmes. The first, now implemented, was for over 500 million dinars. The current one is for over 500 million. Iraq is now well advanced on its long term programme of national development.

The Life Giving Waters. Prevented from devastating the countryside in flood time by man-made barriers, the waters of the Euphrates are stored for use in the dry season. Ramaali Barrage (right), Habbaniyah inlet regulator (left).

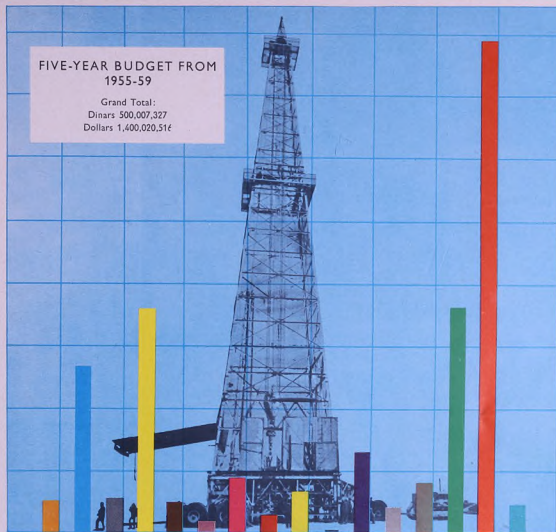


Heavy duty equipment in an Iraq bitumen plant.

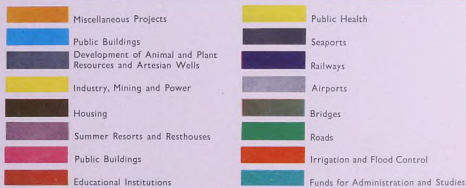


FIVE-YEAR BUDGET FROM 1955-59

Grand Total:
Dinars 500,007,327
Dollars 1,400,020,514



1.9% 10.6% 2.1% 14.3% 1.9% 0.7% 3.4% 1.2% 2.3% 0% 5.1% 1.6% 3.2% 14.4% 35.5% 1.8%



FIRST TECHNICAL SECTION

IRRIGATION, FLOOD CONTROL, WELL DRILLING AND DRAINAGE

FERTILE, and with an estimated 5,410,000 hectares of arable land, Iraq has potentially a brilliant agricultural future. But at present only 2,015,000 hectares are under active cultivation. The traditional fallow system used by the farmer curtails farming still further, cutting it by half, and shrinking agricultural activity into one-fourth of the total arable land.

For Iraq, well supplied with water by its rivers, is confronted with a paradoxical situation: in spring, during the flood season, it suffers from an excess of water and in summer from a scarcity of water. These two abnormal and disastrous conditions of water supply, following each other with a clocklike regularity, turn farming into a hazardous, unstable, and often unprofitable occupation.

One hectare = 2.45 acres or 4 Iraq mesharas or donoms, and one meshara = approximately 0.62 acres.



Regulator on the Mussayib Irrigation Canal; part of the elaborate system by which water levels are controlled.

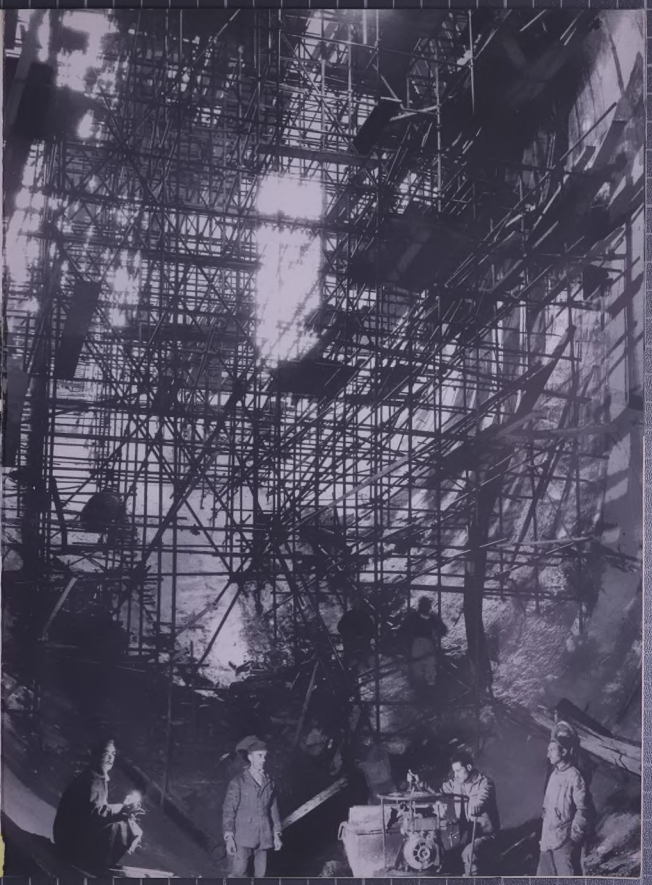
THE SOLUTION

To reverse this process, to stabilise the economy of the country and to assure the agricultural future of Iraq, is possible only by harnessing its great rivers, stopping the floods, storing the excess water, building efficient water distribution and drainage systems and developing domestic water wells where required. This task has now been entrusted to the Development Board which disposes of the necessary funds to carry out this gigantic work.

THE FIVE-YEAR PLAN

Irrigation schemes have the lion's share in the Development Board Five-Year Plan covering the period 1956-1960. I.D. 155,754,600 (\$ 450,512,880), equivalent to 50.7% of the total budget, are to be spent for the flood control schemes, the construction of the reservoirs, dams, barrages, regulators, canals, drains, outfalls, and the development of water wells.

Inside the Great Diversion tunnel at Dukan during construction.





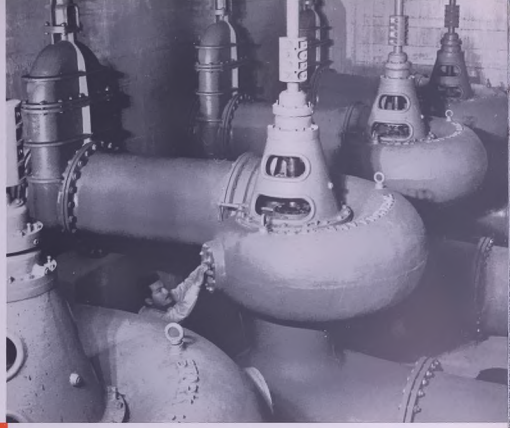
Water for Man and Beast, well drillers at work in the desert.

THE THARTHAR PROJECT

The first major project successfully tackled by the Board was the Tharthar project which aimed at controlling the Tigris flood waters, saving both Baghdad and the farming land around and to the south of the capital from the perennial flood threat. Essentially completed and inaugurated during the First Development Week in 1956, the Tharthar project discharges excess flood water into the Tharthar Depression, about 70 kilometers to the west of the golden-domed city of Samarrah, through a 65 kilometers long discharge canal having a maximum width of 150 metres which involved the shifting of 54,540,000 cubic metres of soil—equal to about 60% of that carried out for the construction of the Suez canal. The total cost of the Project, which has already proved its usefulness, was ID. 16,000,000 (\$ 44,800,000). Consulting Engineers are now studying ways to use the Tharthar Depression for irrigation and storage as well as the revival of the Is-Haji and Nayfeh canals, and the generation of hydro-electric power from the Samarrah Barrage which forms an integral part of the Tharthar Project.

THE HABBANIYAH PROJECT

The Habbaniyah Project, 70 kilometers west of Baghdad, planned mainly to harness the Euphrates, cost ID. 4,500,000 (\$ 12,600,000), and was both completed and inaugurated during the First Development Week in 1956. It consists of Ramadi Barrage, the Warrar Inlet Channel and Regulator, the Dhilban Outlet, Majarrah Regulator and Discharge Canals, and the Razzazi Dam. It proved at once its effectiveness in preventing devastating Euphrates floods both in 1956 and 1957. Excess flood water was diverted to the Habbaniyah Lake west of Ramadi, and used for irrigation later, in the low water summer season.



The Industrial Age comes to the aid of the farmer. Huge pumps at the Saqlawiya Drainage Pumping Station pump salt saturated drainage water into a canal that will take it away.

THE DOKAN DAM

Built on the Lesser Zab river, a tributary of the Tigris famous for its torrential and devastating high floods, this concrete arch type dam is another major flood control and irrigation project. Situated at the rocky Dokan Pass, 90 kilometres northwest of Sulaimaniyah, the Dokan Dam, when completed in June 1959, will store 6,100,000,000 cubic metres of water, and help to irrigate 600,000 hectares of land to be developed for intensive cultivation. This 116 metre high and 560 metres long dam is also expected to generate 200,000 kwts of electric power. The prime contract for the Dokan Dam will cost ID. 12,900,000 (\$ 36,120,000).

THE DERBENDI KHAN DAM

Under construction at present this 155-metre high, rockfill type dam with a clay filler at the core, has a base width of 500 metres and a crest length of 450 metres. It is therefore one of the biggest dams of this type ever built. Stemming the course of the Diyala river at a deep, ravine-like gorge between two lofty mountains some 250 kilometres northeast of Baghdad, the Derbendi Khan Dam will store 5,000,000,000 cubic metres of water, and help to irrigate 585,000 ha. for intensive cultivation. It will also be capable of generating 112,500 kwts of hydro-electric power. To be completed in June 1960, the prime contract for this dam will cost about ID. 17,000,000 (\$ 47,000,000).

AREA PROJECTS COMPLETED OR NEARING COMPLETION

Four area irrigation projects bringing water and prosperity to wasteland are partially completed. These are the Dujaila, Latifiyah and Greater Mussayib Projects in Central Iraq and the

Hawija Project in the north. Distributed among smallholders, they are growing into green agricultural centres.

Dujailah, Latifiyah and Hawija were started before the creation of the Development Board.

MASTER PLAN

All the projects described so far are, in fact, the very first steps taken in the execution of a master plan which aims at reviving, developing, reclaiming and reforming all the arable lands of Iraq. Many more are to come. These projects are now being studied separately by consulting engineers, but they form an integral part of a gigantic system of irrigation designed to inter-connect them all, and create a network serving all irrigable parts of the country.

DRAINAGE PROBLEMS

The scarcity of rainfall, extremely hot and dry summers, underground water seepages, and, above all, flow irrigation contribute to excessive salinity of the soil in the Twin Rivers Valley. The indiscriminate and unscientific irrigation methods followed for centuries have turned some regions so salty that, unless washed and drained, they will have to be abandoned.

Drainage constitutes, therefore, an acute problem. The Development Board, conscious of this urgent need, drew up a plan for the construction of an effective network of drains. The immediate target, costing ID. 28,000,000 (\$ 7,800,000) will cover:

The Dujailah Drain. In the central Tigris basin, which will serve 112,000 ha. of land, besides reviving 40,000 ha.

The Saqlawiya and Abu Ghuraib Drains, in the central Tigris basin, which will serve an area of 175,000 ha. and cost ID. 1,800,000.

Shatrah Drains, on the Gharrar Project in the lower Euphrates basin, which are planned to serve 150,000 ha.

Hussainiyah—Bani Hassan Drains, in the central Euphrates basin, which are designed to serve 75,000 ha.

Qurnah Drains, at the traditional site of the Garden of Eden, where the Tigris meets the Euphrates, which will serve 17,500 ha. and cost ID. 925,000 (\$ 2,590,000).

Tuwaitreej Project, in the central Euphrates basin, which will serve some 8,000 ha. as well as increase the productivity of adjacent lands.

The Hillah-Kifl Drains on the Hillah Project in the central Euphrates basin will serve 87,500 ha.

The Greater Mussayib Drains, in the central Euphrates basin, which form an integral part of the irrigation project by the same name, 85,500 ha.

This however, is not all. Practically all of the projected irrigation schemes have their own drainage systems as an integral part of the plan.

First tests have proved beyond doubt that the drains improve the productivity of the land by three or four fold. This is an immediate economic



The Tigris Spring Flood was halted here for the first time in 1916. Greatest single accomplishment to date of the Development Programme is the Tharthar Flood Control Works. The Samarrah Barrage (background) diverts the Tigris flood waters through the Tharthar Regulator (foreground) into the 64 kilometer long Tharthar flood channel and the Tharthar Depression. In the distant background the Army Mosque, famous monument of the period of the Abbasid caliphs.

advantage. The introduction of the so-called cash crops will also prove to be an economic asset, helping the farmer to reach a higher standard of living.

In various stages of planning and execution are the Eski Mosul, Eski Kelek, Khazir-Gomel, Sungasar, Kirkuk, Zalim Chaqan and Shemamok irrigation and drainage projects in the north; the Ali al-Gharbi, Saniyyah Lake, Buteira and Chahala canals, Michariyah, Musharrak, Majar al-Kabir, and Tigris Narrows projects which are planned to serve the rice-growing regions of the lower Tigris basin; the Najaf Lake, Hillah-Babylon, Shatt al-Mishkhab, Shamiyah, Samawah, Nasiriyah and Hammur Lake irrigation and drainage projects in the lower Euphrates basin; and the Zubair, Swah, and Seebah irrigation projects in the Shatt al-Arab area.

All these projects call naturally for the construction of a number of regulators and barrages. Some of these have been built. Others are being planned. And a number are under construction.

Complementary schemes are also being drawn up to enlarge the irrigation facilities now in operation. Additional dyke work on the Habhaniyah Lake; the extension of the Majarrah regulator in Ramadi and the Gharraf regulators near Kut are among these.

THE ELECTRIC PUMPING STATION

At Saqlawiyah Drains, an electric pumping station has already been installed. Here four pumping units work at the same time and lift every second five cubic metres of stagnant and salty water to a height of nine metres, and dispose of this water, surpassing in salinity that of the sea, into a two-kilometre long canal which ends at the Tigris river.

DAM PROJECTS UNDER CONSIDERATION

Bekhme Dam, at Bekhme Gorge, 50 kilometres north of Arbil (Arbela of old), this concrete buttress dam would control and store the Greater Zab waters. *Eski Mosul Dam*, 40 kilometres north of Mosul, would control the upper Tigris, store its waters and generate hydro-electric power.

IRRIGATION PROJECTS UNDER STUDY OR PREPARATION

Z.A.D. Projects, which encompass the Nahrawan, Is-haqi, and Adhaim irrigation projects in the upper Tigris basin, will irrigate, along with the Makhmur irrigation project, an estimated 500,000 ha. and cost an estimated ID. 45,000,000 (\$ 120,000,000).

Dayala Project, extending from Baquba area in the north to the Kut region in the central Tigris basin, would provide for the reform, reclamation and drainage of nearly 707,500 ha. at an estimated cost of ID. 52,000,000 (\$ 145,000,000).

Other projects, taking care of the irrigation and drainage needs of the lower basins of the Euphrates and the Tigris, as well as the Shatt al-Arab area, are in preparation.

WELLS

Extensive areas of northwestern and southern Iraq are arid lands where water is of paramount importance to the nomadic tribes roaming in these regions in an everlasting quest for pastures and springs. These tribes would be delighted to cluster and settle around wells with an adequate and steady supply of water, and grow into healthy economic assets for the country.

The Development Board has, with this aim in view, decided to develop wells in arid areas and entrusted studies connected with the project to consultants, and earmarked ID. 5,000,000 (\$ 8,400,000) for the purpose.

WELLS IN OPERATION

One hundred and eighteen wells have already been developed and are in operation in various parts of this arid region. Thirty-two more are either being tested or completed. The depth of these wells varies between 200 and 750 feet, and their output, between 20 to 400 gallons per minute, each taking care of the normal needs of 10 to 50 nomadic families.

Within the next four years 350 more wells will be developed.



Construction of the diversion tunnel at the Derbentli Khan Dam required a high degree of engineering skill.

SECOND TECHNICAL SECTION

Roads, Bridges, and Public Buildings

When Iraq awakened to a new life at the end of World War I, the country was wilderness so far as means of communication were concerned; modern highways were unknown; there was not one single metalled road; there was not one single concrete or steel bridge; railway lines, clumsily built during the war, were insufficient and inefficient.

Public buildings, for their part, were rare and in a deplorable state. The financial resources of the country were meagre. Little therefore could be achieved at first.

Improvement during the four decades to 1950 was steady, but fell behind the growing needs of the country.

It was imperative that the Development Board should give particular attention to roads, bridges and public buildings, providing ID. 125,765,000 (\$ 346,542,000) for them in the Six-Year Plan.

FACING PROBLEMS

This gigantic programme was, however, confronted by a number of problems: steel was hard to find on world markets; machinery and equipment ordered abroad took a long time to be delivered; and there was a marked need for engineers, technicians and skilled workers. In spite of all this the Board managed to accomplish a great deal.

ROADS

The Ministry of Development is now building, within the framework of the Six-Year Plan, more than 2,400 kilometres of all kinds of roads. Special attention is being given to the rugged north, where heavy traffic connected with the construction of major irrigation works, makes such a policy imperative.

The immediate programme includes the following roads:

In the north: Tasloojah-Dokan (50 kms.), Kirkuk-Tasloojah (89 kms.), Tasloojah-Derbendi Khan (77 kms.), Jalowla-Derbendi Khan (128 kms.), Mishahida-Samarrah (80 kms.), Samarrah-Baiji (97 kms.), Sulaimaniyah-Sarchinar (6 kms.), Kirkuk-Baghdad (175 kms.), Baiji-Qiyyarah (105 kms.), and Kirkuk-Koysanjak (77 kms.).

In the central region: Baghdad-Salman Pak (55 kms.), Baghdad-Fallujah (64 kms.), Fallujah-Ramadi (49 kms.), Baghdad-Hillah via Babylon (87.5 kms.), Kerbela-Najaf (78 kms.), and the 8 kms. long Kadhimain by-pass north of Baghdad; Najaf-Abu Sukhair (18 kms.), Isk-Kerbela (48 kms.).



Students' hostel under construction in Baghdad. There has been an immense increase in the number of students in institutions of higher education.

In the south: Salman Pak-Kut (150 kms.), Hillah-Diwaniyah (80 kms.), Diwaniyah-Nasiriyah (200 kms.), Basrah-Amarah (168 kms.), Kut-Nasiriyah (200 kms.), and Hillah-Kerbela (50 kms.); Diwaniyah-Kufa (72 kms.) and others.

About 700 kilometers of the roads included in this ID 65,686,000 (\$ 178,520,000) Six Year Roadbuilding Plan have already been completed and are open to traffic. They are all, whether highway or not, metalled roads, and are expected to be completed by March 1961.

The Board has also earmarked an additional ID 4,000,000 (\$ 25,200,000) for railway expansion through the construction of a new railway line between Baghdad and Basrah via Kut and Nasiriyah.



Entrance to the Parliament Building which is nearing completion.

BRIDGES

The Plan also calls for the construction of 50 major bridges, five of them in Baghdad. The total allocation for these in the Plan is ID 22,890,000 (\$ 64,092,000).

Nine bridges have been completed so far, as follows: *Queen Aliyah Bridge*, 455-metres long, and *A'Innah Bridge*, 516 metres long, spanning the Tigris to the south and north of Baghdad respectively, (combined cost: ID 2,871,596 i.e., \$ 8,059,908.80); *Baquba Railway Bridge*, 178 metres long (cost: ID 417,670, i.e. \$ 759,500); *Samawa Bridge*, 156 metres long (cost: ID 480,000, i.e., \$ 1,550,000); *Musul Bridge*, 356 metres long (cost: ID 711,677, i.e., \$ 1,992,700); *Amarah Bridge*, 225 metres long (cost: ID 801,744, i.e., \$ 2,245,000); *Taq-Taq Bridge*, 520 metres long (cost: ID 661,119, i.e., \$ 1,850,000); *Kufa Bridge*, 245 metres long (cost: ID 560,000, i.e., \$ 1,008,000); and *Hindiyah Bridge*, 172 metres long (cost: ID 351,299, i.e., \$ 985,600).

The Highway Bridge at *Nasriyah* and the *Qurnah* Bridge in the south, as well as the *Baquba Highway* and *Abassiyat* bridges in the central region are under construction and will be completed next year. Fourteen other bridge projects are either out to tender or under study by the Ministry's Consulting Engineers, and will be built within the next two or three years in various parts of the country.

BUILDINGS

ID 57,180,000 (\$ 104,129,200) are allotted in the Six-Year Plan for the construction of major public buildings of all kinds.

So far, 110 primary and 12 secondary schools, 15 hospitals, 49 clinics, and 449 buildings of various types have been completed. The work is going on at an ever-increasing pace.

THE HOUSES OF PARLIAMENT

A modern, spacious and dignified building for the Houses of Parliament is coming into being. This beautiful structure, overlooking the Tigris, will cost ID 2,755,550 (\$ 7,714,924).

MEDICAL CENTRE

The Board is also building a gigantic medical centre, comprising an air-conditioned 1,000-bed hospital, equipped with 12 operation rooms each assigned for a special type of surgery; a nursing home; and service quarters. The estimated cost of the Centre is ID 8,000,000 (\$ 22,400,000).

OTHER HOSPITALS

The designs for the 400-bed *Basrah*, 500-bed *Kadhimain*, and 200-bed *Amarah Hospitals*, costing altogether ID 5,400,000 (\$ 15,120,000), are nearing completion.

For the *Karkh Hospital* in Baghdad, presently under study, a new project is to be presented to the Board in September 1958 by a world famous architect, estimated cost ID 5,200,000.

A *Children's Hospital*, to be attached to the Medical Centre, is being planned, estimated cost ID 1,250,000.

Ministry of Development to be constructed in Baghdad.



Queen Aliyah Bridge over the Tigris at Baghdad, opened to traffic in the spring of 1957. At the far end the new South Gate Circle and a modern commercial section of the city. In the foreground land being cleared for new construction.







Road construction is a vital part of the Development Programme.

AIR AND SEA PORTS

The new *Baghdad Airport*, to cost ID 4,000,000 (\$ 11,200,000) and to replace the present one which has become inadequate for modern air traffic, will shortly be constructed at Daura, nine kilometres south of Baghdad. *Basrah Airport*, becoming internationally more important with every passing day, will be enlarged.

Bamerni Airport, serving the Iraqi summer resorts in the north, was opened to traffic during the Second Development Week in 1957.

Important facilities, including a new wharf, more storehouses, and a heavy floating crane, have been added to the *Port of Basrah*. The creation of another sea port at *Um Qasr*, on the Persian Gulf, is being studied.

THE UNIVERSITY

A large area has been acquired at Jadiriyyah, Baghdad South, for the construction of Baghdad University—a long cherished dream that is finally coming true. The amount allotted for this project in the Six-Year Plan is ID 2,000 000 (\$ 5,600,000).



New road in Kurdistan, an area that had long suffered from poor communications.

THE IRAQI MUSEUM

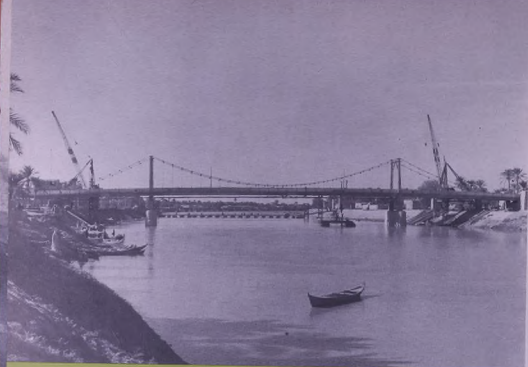
This modern and fully air-conditioned building in Baghdad West will house the world famous Sumerian, Babylonian, Assyrian, and Islamic treasures of Iraq. Its foundation stone was laid in the Second Development Week in 1957, and construction is now in progress. The cost has been estimated at ID 1,250,000 (\$ 3,500,000).

THE STUDENTS' HOSTEL

A 540-room students' hostel, to accommodate 350 students, is nearing completion at Baghdad North. The estimated cost of this building is ID 385,000 (\$ 1,078,000).

OTHER PROJECTS

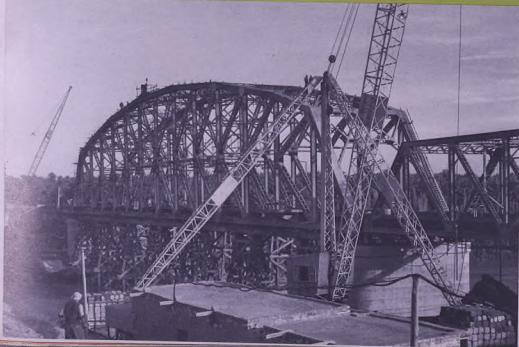
Other public buildings for Baghdad in various stages of planning and execution, are: the Courts of Justice, an Opera House, a Fine Arts Gallery, a Stadium and Sports Centre, a National Library, the Development Board and Ministry, the Baghdad and Rasafa Police Headquarters, a Civic Centre, a new General Post Office, a Central Telegraph Office, slaughterhouses, and a Hilton Hotel, (the last to be constructed in association with the Hilton Hotels International).



*New suspension bridge at Samawa in the Euphrates Valley.
In the background the old pontoon bridge.*

*Engineer and worker are building together a modern
nation on the new frontiers of the ancient east.*

*Railway Bridge nearing completion at Baquba on the Diyala
River east of Baghdad.*



THIRD TECHNICAL SECTION

INDUSTRY, MINING, AND POWER

DEVELOPMENT work is indivisible. It requires good planning, and good planning requires data. And, to have, data efficient surveys are required, notably in the industrial field.

MINING SURVEY

In progress since 1954, the geological and geophysical survey has collected valuable data on the geological formation and minerals of the country.

Deposits of iron ore, chromite, copper, lead and zinc were found in the mountainous north. Test drilling is now being carried out to assess their economic and commercial value.

Important deposits of limestone, gypsum, salt, dolomite, and phosphates were discovered and an unlimited amount of sulphur.

Iraq's limestone and gypsum have already helped in the creation of an important cement and construction material industry. Dolomite can be used in the melting furnaces of the projected steel plant, and both salt and sulphur will be most effective in the creation of chemical industries. In the south, there is more than enough sand for the needs of a flourishing glass industry. An important iron ore body has been discovered in the Penjwin area.

INDUSTRIAL SURVEY

The blue-print for industry has been based upon an extensive industrial survey undertaken by the Development Board, which gave close attention to the country's resources and needs. This survey guided the Five-Year Industrial Programme, which gave priority to the production of fuel, power and cement; essential factors for sound industrialisation.

THE QAIYARAH BITUMEN REFINERY

The first project completed under this programme was the Qaiyarah Refinery, built on the Tigris, 75 kilometres south of Mosul. It now produces annually 60,000 tons of bitumen of all grades, which is ample for the present needs of Iraq. The refinery packs its products in containers manufactured in its own drum factory. This plant which has cost, along with its housing scheme for its 200 employees, ID 2,185,000 (\$ 6,118,000), has eased the way for an extensive road building programme.

The Board provided the Refinery with a working capital of ID 500,000 (\$ 1,400,000), and turned it over to the Government Oil Refineries Administration for management.

THE GOVERNMENT OIL REFINERIES ADMINISTRATION

Known as G.O.R.A., this autonomous branch of the Ministry of Economics operates all the State-owned oil refineries and distributes their products to the home market.

Equipment in the Iraq Government's new Daura Refinery near Baghdad



The Board, conscious of the important role played by low-priced and abundant fuel in the overall development of the country, has advanced the G.O.R.A. various loans totalling ID 6,000,000 (\$ 16,800,000) for the construction of an oil refinery and a lubricant plant in Baghdad.

DAURA REFINERY

The Daura Refinery, nine kilometres south of Baghdad, undertaken by the G.O.R.A. and completed in 1955, is now producing 25,000 to 27,000 barrels daily of fuel oil, gas oil, kerosene, benzine and higher grades of motor spirit. But the productive capacity of this refinery is now being doubled to meet the quickly rising curve of demand for fuel in the country, and especially in Baghdad. When the expansion is completed, the Daura Refinery will produce over 2,000,000 barrels of various grades of motor fuel in a year.

LUBRICANT

The Lubricant Plant, adjacent to the Daura Refinery, opened on October 31, 1957, is designed to produce annually 25,000 tons of lubricants of all types and grades required by local industry, farming and transport. These products are drummed or canned at the plant itself.

LIQUID PETROLEUM GAS

The Daura Lubricant Plant will soon supply the home market with liquid Petroleum gas, commercially known as butagas, produced from the plant's by-products, butane and propane. The liquid petroleum gas will be distributed in portable containers.

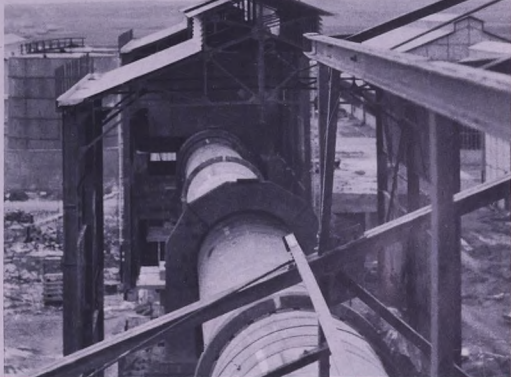
WORKERS AND HOUSING SCHEMES

The Daura Refinery employs in three shifts 7,800, and the Lubricant Plant, 600 workers. A housing scheme, with corresponding facilities, partly completed, provides homes for workers in the vicinity of the refinery.

THE CEMENT FACTORIES

Urgent construction of cement plants became imperative, because the major irrigation works consume huge quantities of cement. The first to be built by the Development Board was the Sarchinar Cement Plant near Sulaimaniyah, in the north, to take care in the first place of the needs of the Dukan and Derbendi-Khan Dams.

Cement plant under construction near Mosul. Iraq's flourishing cement industry could not meet all the demands of the Development Programme. Additional plants are being built by the Development Board.



*Dibs Power Station
The Framework
of the 4 boilers
October 1957.*



This plant, which has a personnel of 250, was inaugurated during the Second Development Week in the spring of 1957. It now produces 9,000 tons of cement each month.

Another plant has been completed at Hamman al-Khil, south of Mosul, to produce another 9,000 tons of cement per month.

Both factories have at present one kiln only, but their productive capacity can be doubled or trebled by the addition of one or two more kilns.

THE POWER PROJECTS

Devised after a country-wide survey of electric power resources carried out in 1955, the power projects planned by the Board are based on two principles: first, that the fuel used should be the cheapest Iraq, so rich in fuel, can provide, and secondly, that power should be assured to the main load centres to cut down unnecessary expense.

Northern Power Project: The power station is located on the Lesser Zab, 40 kilometres north-west of Kirkuk, the initial capacity of the station will be 60,000 KW when it is completed with provision to expand up to 150,000 KW.

The power generated will be transmitted over H.V. lines to the towns of Mosul, Kirkuk, Arbil and Sulaimaniyah, as well as to the government cement and sugar plants in that area.



Spinning Equipment in the new Mosul textile Factory. Long renowned in the world for its fabrics, Mosul gave its name to mousseline or muslin.

All contracts relating to equipment and material have been awarded to different firms and the work on the site is progressing. The first generating unit as well as the transmission lines and the substations are expected to be completed before the end of 1958.

The cost of the whole project is estimated at ID. 7,500,000.

Central Power Project: The power station is located on the southern outskirts of Baghdad City. The foundation stone of the station was laid during the Second Development Week in 1957. The first unit is expected to be ready before the end of 1958. The station will house four units of 20,000 KW each. It is designed to have a possible ultimate capacity of 200,000 KW.

The major portion of generated power in the station will be consumed in Baghdad and the remainder will be transmitted over high-voltage transmission lines to meet the demand of the towns of Hillah, Kerbela, Hindiya, Mussayib, Sadat el-Hindiya, Najaf, Kufa, Shamiya and Divaniya.

The cost of the whole project is estimated at about ID. 8,000,000.

Southern Power Project: The station is located north of Basrah and will have an initial capacity of 45,000 KW, generated by three units of 15,000 KW each, with an ultimate capacity of 150,000 KW.

The first contracts for major equipment were awarded in August 1957 and actual construction work on the site began in 1958. Operation of the first generating unit is scheduled for late 1959.

Initially, all the power from this station will be fed into the distribution networks of Basrah.



Another New Industry.

Provision is being made at the station, however, for the future addition of a switchyard from which one or more double circuit lines will be built to serve the areas of southern Iraq which lie to the north of Basrah. Ultimately these lines will meet those built south from Baghdad to provide interconnection between the Baghdad and Basrah Stations.

The estimated cost of the power station together with the interconnection to Municipalities and Port Administration is estimated at about ID. 4,250,000.

THE COTTON TEXTILE PLANT

Iraq needs yearly some 50,000,000 square yards of cotton piece goods, two-thirds of which have been regularly imported from abroad. Now the Mosul Cotton Textile Factory, built by the Development Board, and inaugurated in the Second Development Week, has the capacity to produce 20 million yards of cotton piece goods annually, meeting over one-third of the country's requirements.

This fully air-conditioned, humidity-controlled modern plant, which occupies a 100,000 square metres plot near the southern entrance of Mosul, famous in Medieval history for its fine textiles known the world over under the name of mousseline, has cost, along with the housing scheme which accompanies it, ID. 4,900,000 (\$ 12,720,000).

Equipped with 76 carding machines, 25,000 spindles, 650 looms, the most up-to-date machinery for bleaching, dyeing, starching, finishing, and printing in six colours, the plant employs 1,200 workers in three 8-hour shifts, and uses primarily Iraq cotton.

The Board also provided the plant with a working capital of ID. 250,000 (\$ 700,000), and handed it over to the Ministry of Economics for operation and management.

THE ATOMIC ENERGY PROJECT

The Iraq Government has paid serious attention to atomic affairs. The Development Board allocated on 26 November 1950 a sum of one million dinars for this purpose. The Iraq Government has participated in establishing and financing the joint Atomic Energy Training Centre of the Baghdad Pact countries which was inaugurated by H.M. the King of Iraq in Baghdad in March 1957.

The Government has also established a Technical Atomic Energy library which contains up-to-date references, reports, pamphlets, microcards, magazines and film reels. All deal with the subject of the peaceful uses of atomic energy. The recommendation of the Ministerial Committee concerning the establishment of a Nuclear Research Reactor in Iraq, specifications of which have already been prepared, has been accepted by the government.

The Nuclear Energy Laboratory will be constructed as part of the Central Research Laboratory to be built in Baghdad. Consulting Engineers have already been selected.

In addition, the Government has paid great attention to training Iraqi technicians abroad in this field. Several missions were sent to undergo training on the uses of radio isotopes in the fields of medicine, agriculture, and industry. Other technicians have been sent to be trained in the operation and maintenance of nuclear research establishments. An agreement for cooperation with the United States Government in the field of the peaceful uses of atomic energy has been concluded.

THE SUGAR PLANTS

The Development Board is building three Sugar Factories to meet the greater part of the country's requirements for sugar which is being imported (150,000 tons a year).

The Mosul Sugar Plant. Built four kilometres to the south of Mosul, this plant is designed to produce 55,000 tons of refined white sugar, and will use about 80,000 tons of Iraqi-grown beet root, and 27,000 tons of raw sugar a year.

This factory, which will be inaugurated in the Third Development Week in 1958, will cost about ID. 2,000,000.

The Kerbela Liquid Sugar and Dibis Factory: This factory is designed to produce from Iraqi dates, 8000 tons of liquid sugar, and 9000 tons of first quality dibis, a sugar paste.

The Sulaimaniyah Sugar Plant: This factory which will cost about ID. 5,500,000 is planned to produce yearly 20000 tons of refined white sugar from Iraqi-grown beetroots in the Sulaimaniyah Liwa.

SULPHUR RECOVERY PROJECT

Detailed studies by the Development Board have shown that considerable quantities of sulphur may be recovered from Iraq natural gas, presently going to waste in the oilfields.

The Sulphur Recovery Plant, to be built by the Board in Kirkuk shortly at an estimated cost of ID. 2,500,000 (\$ 7,000,000), will produce daily 500 to 550 tons of sulphur. Two-thirds of this will be used for the manufacture of fertilisers, and the rest exported. Due to its purity and competitive price, Iraq sulphur is expected to be most welcome in world markets.

NATURAL GAS

The Development Board has studied ways and means to use Iraq's natural gas to meet the ever-increasing industrial and domestic demand for fuel in expanding Baghdad.

The carefully devised plan calls for pumping natural gas from Kirkuk to Baghdad, at a rate of 800,000 cubic metres per day in 1960, increasing gradually to double this quantity by 1965.

The project, for which consultants have been chosen, includes the metering, compression, piping and distribution of natural gas to Baghdad industries.



Qaiyarah Bitumen Refinery. Boiler House, with Topping Unit in background.

THE FERTILISER FACTORY

As tests have shown that ammonium sulphate is by far the best chemical fertiliser for the soil of Iraq, most of the sulphur extracted from the natural gas will be used for the production of this item.

The Fertiliser Factory, to be built in Basrah as soon as the Sulphur Recovery Plant is in operation, is designed to produce annually 250,000 tons of ammonium sulphate. The project is estimated to cost over ID. 8,500,000 (\$ 25,500,000).

THE PAPER PLANT

Expansion of the economy is increasing the demand for paper and cardboard—both imported from abroad. Iraq has a substantial supply of raw material for a paper industry in the reeds growing wild in the extensive marshlands of southern Iraq. Plans have been launched for the construction of a paper plant at Basrah, designed to produce 45 tons of paper board daily from reeds at the initial stage, and making provision for increased production later. The estimated cost of the project is ID. 2,000,000 (\$ 5,600,000).

FODDER INDUSTRY

At the request of the Development Board, experiments were carried out in Germany to assess the food value of date waste and kernels, known to be rich in proteins, and the feasibility of processing them for fodder. As these experiments were successful, the Board is now studying a plan to set up a fodder industry in Iraq capable of both meeting the home market demands and providing an export item.

CAUSTIC SODA

The Board has also drawn up a plan for the erection of a factory to produce, by electrolysis of salt solution, 10,000 tons of caustic soda annually to meet the demands of the projected paper and rayon industries, as well as that of the home market.

STEEL PLANT

The Steel Plant, to be built near Kadhimain, a northern suburb of Baghdad, is among the Development Board projects in the final stages of study. This plant, using as raw material local iron and steel scrap, will, besides meeting a part of the home demand for steel, encourage industrial development and building and save a considerable amount of hard currency for Iraq.

Consultants are now investigating local scrap supply, and power and water conditions, as well as the market demand, and gathering data on the kind of steel primarily used in Iraq.

PLASTICS

A project closely associated with the caustic soda plant is the plastics factory. Here natural gas will polymerize with chlorine, a by-product of the caustic soda plant, and change it into a plastic from which pipes, hardboard, and insulation material can be made.

The Plastics Factory is estimated to cost ID. 2,500,000 (\$ 7,000,000).

RAYON INDUSTRY

The Development Board has already approved the setting up of this industry. The projected rayon plant, the first of its kind in Iraq, will have an annual output of 2,500 tons of rayon yarn, and 2,500 tons of staple fibre. It will be constructed near Basrah, on the left side of the Euphrates river, and will cost ID. 3,500,000.

FINE TEXTILES PLANT

This plant is now in the planning stage. It will be constructed at Hillah and is designed to produce around 22,000,000 yards of fine count textile yearly. It will use, as raw material, the fibres produced at the projected rayon plant. Estimated cost: about ID. 3,200,000.

CENTRAL LABORATORY

To be built next to the projected Baghdad University grounds in Baghdad South, this ID. 5,000,000 (\$ 8,400,000) institute, called the Central Research Laboratory, will be the first of its kind in the Arab world. Through intense applied research in industry and agriculture, this scientific institute will seek to improve the quality of products, raise standards of production and develop new materials and products. It will have departments of physics, chemistry, engineering, biology, agricultural industries, and mathematics, as well as a nuclear research laboratory, each with their respective branches, directed by Iraqi and foreign scientists, researchers, and technicians. A library, a science museum, and workshops will be attached to the institute.

Consultants are now working on the preliminary planning. The construction is expected to start at the end of 1958, and take 2 years to complete.

LIGHT INDUSTRIES

This division is primarily concerned with training the rural communities in light industries useful to them, such as the manufacture of white sheets and towels on handlooms, wool cutting and planing, making of spades and hoes, and dyeing yarns.

The light industry training centres that were established in the Dujailah and Latifiyah Land Settlement Projects have proved most successful in this respect. A woollen textile industry centre on similar lines is being established in Kufa. Other projects of the same type on their way to completion are: the textile industry centre in Najaf, wool spinning plant in Sulaimaniyah, cotton spinning plant in Shahzoor, and a training centre for light industries in Baghdad.

*The Soil
Laboratory in the
Engineering
College at Baghdad.*



FOURTH TECHNICAL SECTION

AGRICULTURE AND AFFORESTATION PROBLEMS

The Development Board is not concerned with construction alone. Its diversified and constructive activities include lending a most helpful hand to the agricultural reform of the country, and conservation of its natural resources and animal wealth. It introduces new and better methods of farming, takes care of afforestation, encourages raising better breeds of cattle and poultry, and carries out effective campaigns against pests and parasites.

THE FIVE-YEAR BUDGET

The Board is spending, within the Five-Year Plan frame, ID. 12,000,000 (\$ 53,600,000) for this purpose, and also undertaking a comprehensive study of the soil, the ideal methods to increase crop yields, and the introduction of mechanised farming.

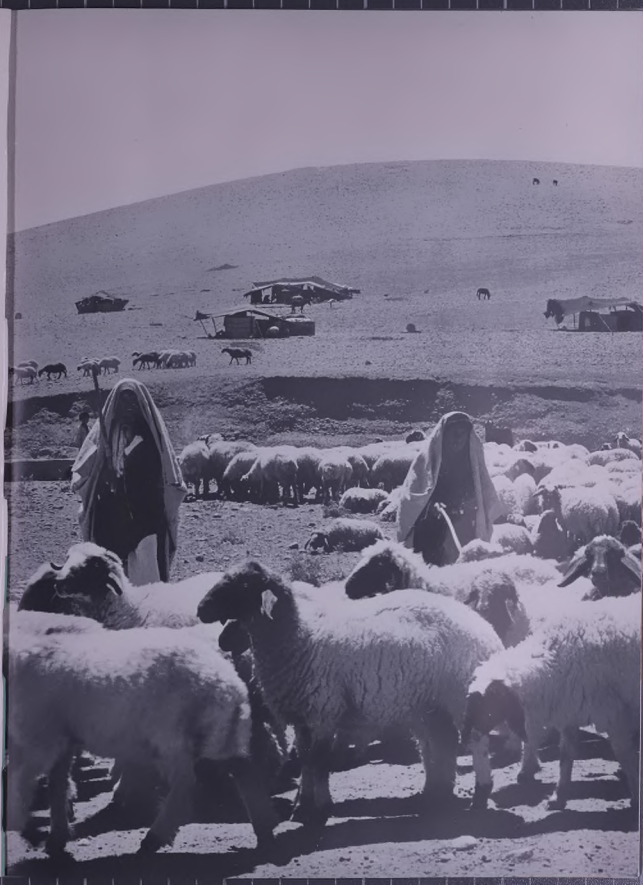
AGRICULTURAL PROJECTS

These fall into three categories: a. Emergency and short-term projects, which include control of pests and plant parasites. These are undertaken on the spot. b. Medium-term projects: these



To improve the livestock and with it the livelihood of the bedouin is an objective of the Development Programme.

The younger bovine generation; Iraq livestock exports are producing a higher grade of cattle for the farmers and the bedouin.



include animal and poultry breeding, the expansion of experimental farms at Abu Ghuraib, Bakraja and Sulaimaniyah, creation of farming and forestry improvement centres, soil survey, land classification, and improvement of rice culture in the south. c. Long-term projects: which include the protection of forests and pastures, afforestation, expansion of agricultural and veterinary colleges, encouragement of research, and creation of agricultural extension service.

AGRICULTURAL EXTENSION

The aim of the Agricultural Extension Project, for which ID. 140,000 (\$ 592,000) has been allotted, is to guide and teach the farmer the best methods of cultivation and to initiate him into the uses and operation of agricultural machinery.

AFFORESTATION SCHEMES

These aim at the protection of existing forests, prevention of waste in timber utilization, creation of nurseries, afforestation in the north, as well as establishing tree plantations in certain sectors of central and southern regions. The object being the production of wood for fuel purposes, and timber for industrial use, ID. 1,000,000 (\$ 2,800,000) are allotted for these projects.



*Airborne pest control
in Iraq.*

AGRICULTURAL AND VETERINARY COLLEGES

Considerable sums have been allotted to assure up-to-date equipment and laboratory facilities and obtain foreign experts as professors and instructors for these two colleges.

PROJECT UNDER STUDY

A general agricultural census, taken in 1954, gave valuable data on the agricultural situation in the country. Measures are now being taken for a general agricultural survey as well as a comprehensive study of the ways and means to raise the farmer's standard of living.



*Yields under Iraq's
Agricultural Programme
are improving.*

*Better quality means
a better income for
the farmer.
Agricultural extension
work is an integral
part of the Iraq
Development Programme.*



FIFTH TECHNICAL SECTION

HOUSING PROJECTS

THE housing problem in Iraq is in a sense a good sign. A higher living standard has been achieved during this generation. Population has risen. A growing middle class has become steadily more prosperous.

The root of the housing problem goes back, as do so many problems, to centuries of misrule and mismanagement coupled with the poverty from which Iraq had suffered. In the days preceding World War I, when security and stability were unknown, cities and towns could not develop. Rural areas were devastated perennially by floods.

THE CRISIS

Independence brought a tremendous change. Economic conditions improved. Iraqis began gradually to realise the importance of a comfortable home. Effective checks on epidemics led to a remarkable growth in population. With stability and security assured, rural communities settled down and the towns grew out of their shells. Big families, composed of several couples and their children living together under the same roof, began to split up. Public services grew. All this naturally led to an acute shortage of housing.

THE REMEDY

Much was done between the two World Wars to meet the shortage. But World War II practically put an end to construction activity. At the end of the war the housing shortage

A Development Board Housing Project under construction. Completed units in the background.



Low cost workers housing. These houses in the West Baghdad Housing Development were constructed by the Development Board. They contain two rooms, kitchen, store room, courtyard, sanitary facilities and shower and have a sleeping roof for the hot season.

reached a new peak. A Real Estate Bank was established. Various other measures were taken. But the problem needed above all urgent and effective country-wide planning. The Fifth Technical Section, specialised in housing, thus came into being.

THE HOUSING BUDGET

The Ministry of Development allotted ID. 24,000,000 (\$ 67,200,000) in the Five-Year Plan budget for housing.

THE TECHNICAL SOLUTION

A well-known firm of experts, chosen by the International Bank for Reconstruction and Development, were invited to study the problem. With their advice, the Board adopted two programmes: a general one for building 25,000 houses within the Five-Year Plan frame, which requires a general survey and study, and a short-term programme to build a number of housing units, each not exceeding 1,000 houses, beginning with four or five in Baghdad, two or three in Mosul and Basrah, one or two in Kirkuk and one in Sarchinar.

These units, either completed or on their way to completion, are composed of houses of two to five rooms. Each housing unit is equipped with corresponding facilities which include metalled roads, electricity, water, sewers, schools, mosques, civic centres, markets, playgrounds, and parks. The main difficulties facing the Board in the housing field were the shortage of both construction materials and skilled labour.



To avoid a sharp price increase in construction materials should the Board purchase heavily, a decision was taken to experiment on new construction materials.

To cope with the shortage of skilled labour, a limited force of foreign skilled labourers was engaged on express condition that they also train Iraqi unskilled labourers during their term of employment at various construction sites. A vocational school to train unskilled labourers was also established.

One hundred fifty students are now studying in this school in Baghdad, where a number of foreign experts are teaching. Other vocational training centres will shortly open their gates to students in the main towns of Iraq.

So far three experimental housing groups have been completed. These comprise a unit of 105 two-room houses, built by seven different contractors; a unit of 100 five-room houses, built by five different contractors; and 20 small houses.

HOUSES COMPLETED AND UNDER CONSTRUCTION

One hundred and five houses in Baghdad have been completed. In Mosul 850 houses and in Sarchinar 400 houses and in Dibis 165 houses are nearly completed. By November 1959 1,770 houses in Basrah and 519 houses in Kirkuk and 2,150 houses in Baghdad will be completed.

Scheduled for construction are 2,529 more houses in Baghdad, 520 houses in Sulaimaniyah, and 400 houses at Hammam al-Ail, near Mosul.

The nine housing projects totalling 7105 houses either completed or about to be completed are being built for ID. 8,458,000 (\$ 25,477,200). Six other housing projects, comprising 2,568 houses, to be begun soon, will be built at an estimated ID. 5,100,000 (\$ 14,280,000).

Plans have also been drawn for housing schemes in Kut, Amarah, Diwaniyah, Nasiriyah, Kerkela, Najaf, Ramadi, Baqubah, and Arbil.

OTHER HOUSING SCHEMES

Housing schemes for workers in various sectors of Baghdad, financed by the Development Board, were undertaken and completed by the Ministry of Social Affairs. A thousand of these houses were constructed with a new construction material, Stomax. These houses were built at an average cost of ID. 520 (\$ 896). The worker is paying for his house in 20 yearly instalments of ID. 16 (\$ 44.80) at the most.

RURAL HOUSING

Surveyed at length, this undertaking includes, besides the housing scheme proper, the construction of water supply systems, drainage and sewerage, roads, clinics, and civic centres. But the housing schemes in rural areas require regional planning, and the creation of new and modern villages must await the completion of overall development schemes in these areas.

Twenty three rural settlements are being created in the Greater Musayib region.

HUT DWELLERS

Several schemes to get rid of the slum areas are under way in both Baghdad and Basrah. ID. 100,000 (\$ 280,000) have been earmarked for these projects. 500 houses have already been built and distributed among the sarifah dwellers.

PROJECTS UNDER STUDY

Eighteen housing projects for a total of 16,000 houses are now being studied by the consultants.

Refuge from the heat of the Plains, vacation quarters in the Kardish mountains constructed under the Development Programme.



SUMMER RESORTS AND TOURISM

IRAQ, where intense heat reigns in the plains in the summer months, has excellent spots of milder climate and enchanting scenery in the green and mountainous north to which people have flocked in summer months since time immemorial. But these resorts were, until very recently, devoid of all comfort in the modern sense of the word.

The task of developing the summer resorts was first entrusted to the Iraqi State Railways administration. It did an excellent job within the limits of its funds. Now the Development Ministry has taken over this responsibility, and has created the Directorate-General of Summer Resorts and Tourism, which was made later by law an administration run by a Board of Directors.

ALLOCATIONS

The Development Board has allocated in the Five-Year Plan ID. 2,580,000 which is equivalent to £ 2,580,000 or \$ 7,224,000 for the projects of summer resorts and encouragement of tourism.

SUMMER RESORTS

The most important summer resorts lie in Mosul and Arbil provinces of northern Iraq.

Sarsank

5670 feet above sea level, Sarsank resort at Amadiyah is linked to Mosul with a paved road and is a delightful spot. Sarsank Hotel has 55 rooms with all comforts, a swimming pool, a tennis court, a power station, and a Post and Telegraph Office. A.I.D. 400,000 (\$ 1, 120,000) or £ 400,000 civil airport was built at this expanding resort to facilitate travel from Baghdad.

Sawatuka

In this resort commanding beautiful scenery and overlooking the Sarsank Valley, 19 houses were built and furnished. They are usually rented for the season. The resort is also equipped with a first-class hotel-restaurant and sports and play grounds.

Zawita

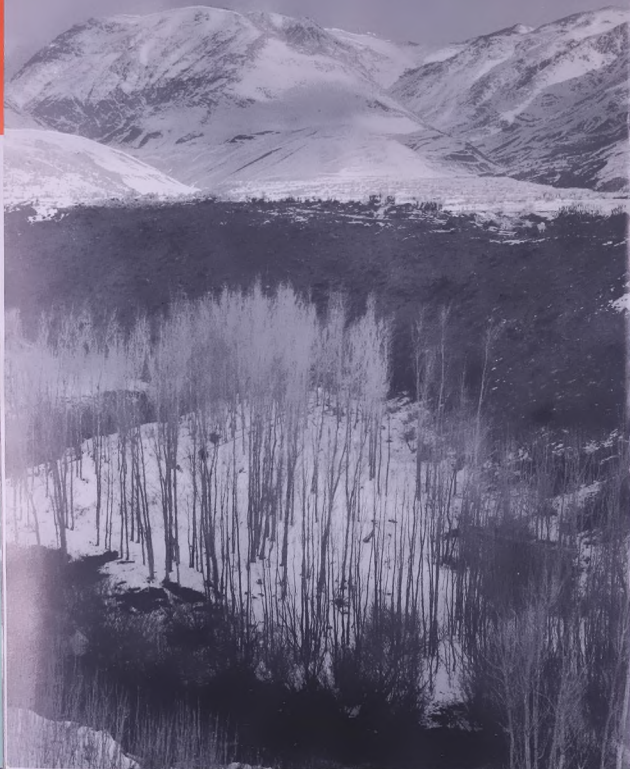
The Administration is maintaining here a modern resthouse overlooking beautiful mountains and scenery.

Salaheddin

52 kilometres north of Arbil, Salaheddin is a summer resort known for its marvellous climate and charming scenery. The Administration has built here 27 houses and equipped them with all comforts. It also maintains in this resort two hotels, one of 14 and the other 50 rooms, with



Comfort in a wild romantic Land; the Sarsank resort hotel high in the mountain country of northern Iraq.



Waterfall in Karlistan, a summer scene in the cool uplands of Iraq.

all modern comforts and facilities. The resort has also a swimming pool, a casino, an open air cinema, a dispensary, a first-class restaurant and a tourist office.

Shaqlawā

At Shaqlawa, close to Salaheddin, renowned for its climate and green gardens, the Administration is operating the modern, 7-room Khanzad Hotel.

Haj Umran

5,000 feet above sea level, this resort in Arbil province is equipped with a four-room modern resthouse.

SPECIAL ATTENTION TO SUMMER RESORTS

A law, passed by Parliament in 1956, empowers the Administration to develop summer resorts and encourage tourism in Iraq. The project includes the construction of roads leading to such spots and of tourist hotels wherever required.

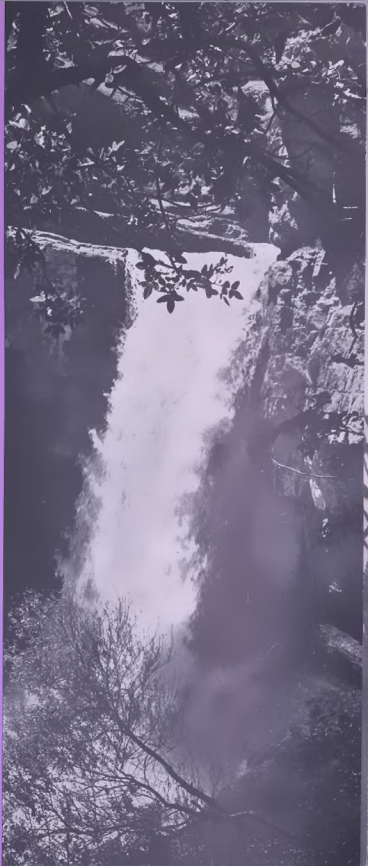
NEW RESORTS AND HOTELS

The oldest known summer resort of Iraq, dating back to the ancient times, Karadagh in Sulaimaniyah, is being replanned. The same is being done at Atrush summer resort in Mosul province.

At Kerbala, where pilgrims from all the Moslem countries flock to visit the Holy Shrines, a modern 40-room hotel with all facilities is being built.

Resthouses in various places including historical sites, Jendian, Divaniyah, Kufah, Hillah, Babylon, Nasiriyah and Ur, are about to be completed for the benefit of tourists. At Shaqlawa an additional hotel is being built.

Snow country in Iraq. Not usually thought of as a winter sports center, Iraq possesses excellent ski slopes.



STATE LANDS MIRI SIRF SETTLEMENT PROGRAMME

The Miri Sirf land distribution and development programme, whose purpose is to settle landless peasants and help them attain a higher standard of living, started in 1945 as another step towards land reform. The first step had been the settlement of land titles as prescribed by the Land Settlement Law No. 50 of 1952.

In order to comprehend the potential impact of the land distribution programme, one must keep in mind that in Iraq today there are 5,250,000 hectares (8.06 million acres) within the irrigation system, two and a quarter million hectares of which are under actual cultivation at any one season. After the current flood control, irrigation, drainage, and water storage schemes are completed, that figure is expected to be doubled. Most of the land reclaimed will be government owned (Miri Sirf) land, thus making available vast new areas for allotment and distribution.

At first Law No. 25 of 1945 was enacted to distribute and develop the Dujaila project on a new basis and then Law No. 47 of 1951 and Ordinance No. 4 of 1952 enlarged the scope of the programme and extended it to cover all Miri Sirf land. Accordingly a Miri Sirf Land Development Committee was set up with a central office in Baghdad and branch offices in the various projects. Specialists in many fields assist the Committee in carrying out its tasks.

The law specifies that the land is to be divided on the basis of owner-operated family farms, priority being given to the occupants of the area intended for distribution. The size of the individual parcel of land varies from one locality to another depending on the availability of water, fertility of the land, etc. However, the law provides the following limits on the size of each unit:

Type of land	Size of the unit
Mountainous lands	not more than 20 Mesharas
Lands irrigated by flow	not more than 100 Mesharas
High lands annexed to areas irrigated by flow and which can be irrigated by low pumping	not more than 200 Mesharas
Land irrigated by rain	not more than 400 Mesharas

Note: A Meshara is equivalent to 0.62 acres or one quarter hectare.

Graduates of agricultural schools, retired police and army officials, retired civil servants and graduates of primary and religious schools are entitled to receive Miri Sirf land under the same conditions as actual peasants. These conditions could be summed up briefly as:

- The applicant must be over 18 years old.
- He must be free from contagious diseases and must be physically fit to work the land.
- Priorities are given to those with large families.
- Priorities are also given to those with previous farming experience.

The cultivator is required to settle on the unit allotted to him, work and farm it according to the suggestions of the Miri Sirf experts.

Passport to a better Life; a landless Iraq farmer has received his title to take up land on a State Lands Settlement project.



Chief agriculturalist on a State Lands Settlement project giving instruction to farmers.



Before the land is distributed the following tasks are performed by the Miri Sif Committee:

- a. Soil and land classification.
- b. Surveying and setting up the boundaries of the units.
- c. Examining the applications and selecting the prospective cultivators. This selection is done with the help of the proper local authorities.*)
- d. Forwarding the selectees names and related data to the Ministry of Development which in turn forwards them to the Council of Ministers for approval.
- e. Drawing up and executing a contract between the settler and the Miri Sif Committee.
- f. Helping in establishing an agricultural rotation system and a home garden. Recently plans for the establishment of villages and rural communities have also been initiated.

After the grantees are settled, extension work is provided. Recently, agricultural cooperatives have been introduced to help the cultivators achieve their objectives.

After ten years the land may be registered in the name of the cultivator providing he works it according to the standards prescribed. In case of death, his heirs have the right to inherit the plot of land.

So far over 20,000 families have been granted land as shown by the following tables. It will be noted from these tables that the last project and the largest is the Greater Musayib. This project is distinguished from the others by the following features:

*) An idea of the number of applicants may be gained from the fact that over 30,000 applications were submitted when the Greater Musayib project, which can accommodate only 2,750 families, was opened for settlement.

Tractor used in the training programme at Abu Chraib farms.



- It provides for the simultaneous installation of irrigation and drainage facilities. Main drains, branch drains, and lateral drains are in operation before the land is handed over to the cultivator.
- The system is designed to provide for intensive cultivation of the unit, which means the use of about 95% of the land in winter and 50% in the summer.
- Provision for the repayment credit for cooperative associations are under way. This step has assumed major importance in the re-establishment of the Cooperative Bank in August 1955.
- Provision has made for village sites and administrative centers.

Table I

Number of cultivators and the size of the areas allotted to them, in all sections of Iraq from 1945 to December 1955

General Project	Cultivators	Area in Moshars
Kutiba (including Hawija)	1,142	50,478
Sulaymaniyah (including Habibiya)	1,988	52,143
Hilla (including Gharra, Baniyas)	2,872	155,450
Rufa (including Dairiya & Sadiya)	3,179	310,858
Ambak (including Makhmura)	3,362	23,000
Baquba	1,400	1,400
Diwariyah	2,007	45,825
Udayyah	1,715	30,979
Qadisiyah	1,100	25,500
Marut	1,000	89,404
Musaib	9,000	1,244,050
Grand total	29,186	2,074,570

Note: One moshar equals an acre of 0.4 hectares.

Table II

Land Settlement Projects and number of Cultivators as in January, 1956.

Project	Nr. of units distributed	Area in Moshars	Year Project was initiated
Dugaila	1,200 cultivators (families)	100	1945
Haweija	2,000 "	200	1951
Shamragor	2,000 "	200	1951
Lattifiya	4,000 "	400	1952
Makhmura	1,250 "	125,000	1952
Gharra & Musayib	1,100 "	600	1950
Total	4,950 "		

Note: One moshar equals an acre of 0.4 hectares outside the project areas.

In conclusion it may be stated that the Mry Shi land development programme, though still in its infancy, has achieved a modest start towards the settlement of a large number of Iraqis, thus insuring them the opportunity to become small-holding independent farmers. The ultimate objectives of providing land holdings to the majority of the landless Iraqis and raising their standard of living will be made easier when the overall development programme, now underway, has been completed.

Iraqi womanhood, a girl living in a State Lands Settlement project where her family has found security and hope.



SIXTH TECHNICAL SECTION



*Young farmers
learning to use a
harvester combine.*

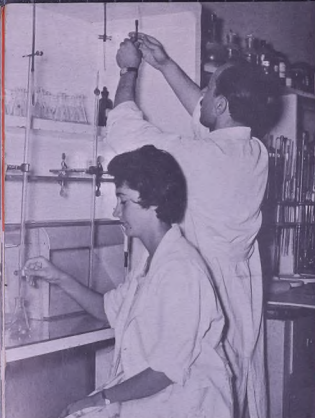
RURAL DEVELOPMENT

Iraq is an agricultural country: 80% of her people live in villages, and it is in the villages that the problem of raising living standards must be fairly and squarely met. The problem is manifold: low crop yields; bad housing and sanitation; poor communications; inadequate educational and health facilities, absence of light industries. The huge development projects directed by the Development Board have certainly paved the way for improvement; flood control schemes have practically eliminated the annual disaster of flood; irrigation and drainage projects are improving the soil; the distribution of newly irrigated state land is increasing the number of small landholders; new roads are ending the isolation of rural areas, and hospitals, mobile dispensaries, schools and classes are becoming available even in the remotest corners of the country. But generations of malnutrition, disease, ignorance, neglect and disaster have bred an apathy all too often impervious to external benefits directed from outside or above.

The Sixth Section of the Development Board, for Rural Development, is an all embracing and imaginative effort to meet and transform the apathy of rural society at its own level, by using and coordinating all the services now available. The significant thing about rural development is that it will bring together the field services of various ministries concerned, leading to a balanced development and a higher standard of living. Under the new regulation,



*Iraq boys learn
about motors.
Training skilled
workers is a vital
aspect of the
Development
Programme.*



Iraq laboratory technicians receive an increasingly careful training.

a Central Committee for Rural Development will be set up, consisting of representative directors general of the Ministries of Agriculture, Social Affairs, Interior, Education, Health, Economics, and Communications and Works, and Development.

The two main principles to be followed are the use of specially trained personnel and encouragement to the people to help themselves. The aim will be to develop the qualities of leadership and initiative in the people. Only by making people aware of their own problems and eager to find the answers for themselves can deep and lasting improvements be made. The Local Councils, Rural Project Development Committees and Rural Development Councils (the village councils set up under a recent law for village administration) will all have an important part to play. The services of experts of the various ministries concerned will be fully utilized.

The ultimate aim of the tremendous development programme transforming every aspect of Iraq's economy is to raise the living standards of the people of Iraq. The creation of the Sixth Technical Section marks a significant advance towards the realization of that aim.

Child care clinics help the Iraq mother to keep her children healthy.



School lunch period at a State Lands Settlement project. Most of the girls are wearing dresses made under their teacher's supervision.





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