Current Agricultural Situation

- Iraq total area is 43.7 million hectares
- Arable land area for planting is 7 million hectares
- Total land area used for agriculture is about 6 million hectares, including rain-fed areas with variable agricultural densities
CLOSED PIPE PRESSURIZED SYSTEM

- Definition
- Components
- Its advantages
- Analysis and design of the system
- Costs and implementation
- Operation and maintenance of the system
- Evaluation and management of the system
- Applications
- Challenges

components

- CHANNEL INTAKE
- STILLING BASIN
- NETWORK FILTERS
- PUMPING CREW
- SAND FILTERS
- DISC FILTERS
- PIPELINE AND FITTINGS
- AGRICULTURAL UNITS INTAKES

definition

Is the transfer of water pressurized by pumping or difference in level through a pipeline of high tolerance to the specified pressure and delivery of water to agricultural units with a specific pressure in the field irrigation.
ITS ADVANTAGES

WORKS TO INCREASE THE EFFICIENCY OF TRANSPORT TO MORE THAN 99%
EXAMPLE:

- RATE OF LEAKAGE 0.2 CM/ SQM/ D
- CHANNEL LENGTH 27 KM, WET PARAMETER 28 M
- AMOUNT OF WATER LOST 1.75 CM/S

This amount can be irrigated 7000 ACRES ORCHARDS WITH A DENSITY OF 200% OR 14000 ACRES OF AGRICULTURAL DENSITY OF 130%
WITH MODERN IRRIGATION SYSTEM

ITS ADVANTAGES

- IT DOES NOT NEED ROTORS, COMPENSATION, BRIDGES OF CARS AND PEDESTRIANS
- REDUCE THE NUMBER OF PUMPS FOR FARMERS
- EQUITY IN THE DISTRIBUTION OF WATER
- FEWER AREAS COMPARED TO OPEN IRRIGATION
- IT IS SUITABLE FOR DIFFERENT TOPOGRAPHIES AND GYPSUM SOIL
- CAN BE USED DIRECTLY WITH MODERN FIELD IRRIGATION SYSTEMS WITHOUT THE USE OF ADDITIONAL PUMPS
- WATER CONSERVATION FROM POLLUTION AND WASTE
- EASE OF DIAGNOSING OVERFLOWS AND FINDING SOLUTIONS
- EASY TO IMPLEMENT, INSTALL AND MAINTAIN
IRRIGATION SCHEDULING

IN ORDER TO MAINTAIN THE IRRIGATION SYSTEM UNDER SUITABLE WORKING CONDITIONS AND TO OBTAIN SMALL DIAMETERS FOR CONVEYING PIPES AND PUMPS, IRRIGATION FOR AGRICULTURAL UNITS IS SCHEDULED ON THE BASIS OF DETERMINING THE NUMBER OF WORKING HOURS PER DAY FOR THE PUMPING STATIONS AND THE NUMBER OF PROCESSING HOURS PER AGRICULTURAL UNIT AFTER SURVEYING THE FARMERS’ OPINIONS BY CHOOSING WHAT SUITS THEM AND IN KEEPING WITH THE REALITY OF THE SOIL, THE DIVISION OF EACH MAIN CONVEYOR PIPE FROM THE PUMPING STATIONS TO SUB-CONVEYOR PIPES WITH THE SAME DISCHARGE EACH SUB-PIPE OR MORE WORKS TOGETHER TO SUIT THE OPTIMUM HYDRAULIC STATE OF OPERATION OF THE SYSTEM.

CONSIDER THE FOLLOWING THINGS TO GET THE BEST RESULTS

- DETERMINATION OF IRRIGATION PERIODS FOR DIFFERENT CROPS AND WINTER AND SUMMER ORCHARDS
DIGGING WORKS

COST

COST OF RECLAMATION OF ONE DUNUM OF IRRIGATION SYSTEMS CLOSED MORE THAN OPEN IRRIGATION SYSTEMS BY 0.5-0.75%

IMPLEMENTATION

• THE IMPLEMENTATION RATE OF 1 KM OF CLOSED IRRIGATION SYSTEMS TAKES ONE DAY USING TWO EXCAVATORS, ONE TIPPER AND SOME UNSKILLED WORKERS
• THE AVERAGE PERIOD OF IMPLEMENTATION OF 1 KM OF OPEN IRRIGATION PLOT TAKES 3 MONTHS IN PERFECT CONDITION AND USING MORE THAN THE MACHINES AND SKILLED WORKERS AND THE SAME DISCHARGE

IMPLEMENTATION
CHALLENGES

• Satisfaction with the need to use the system
• A specialized institutional structure
• Specialized staff
• Issuing instructions regarding operation and maintenance of the system
• Work an integrated curriculum of the system studying in universities and institutes

OPERATING AND MAINTENANCE

• The importance of following up the completion of the periodic cleaning of the network by following the pressure at the beginning and end of the pipes
• Check the safety valve at startup every time to avoid damage to the pressure of the network
• The use of acidosis that works on the opening of the lines and periodically such as nitric acid

THANK YOU