

## **Career Opportunities in Agricultural Engineering**

In the course of his career, an agricultural engineer received training in mechanics of machine heat transfer and thermodynamics of engine, fluid mechanics and dynamics, theory and design of machine and machine elements, engineering drawing design of structures, thermal environment, energy utilization, hydrology, soil and water conservation, surveying, systems control and analysis, principles of crop production, properties of agricultural materials, management principles and motivation economics and industrial engineering. Therefore, equipped to carry out designs and operation of machines, undertake waste management and sewage disposal, design and analysis of agricultural buildings such as poultry houses and associated structures and many more. Engineering technology graduates are prepared to work as part of the engineering team to implement and improve existing technology. The agricultural engineering technology prepares students to be part of the engineering technology function for governmental agencies, manufacturing, sales and service companies. The environmental engineering technology option prepares students to solve technical environmental problems. They work to reduce the release of pollutants to the environment, to prevent harmful effects of pollution, to clean up contaminated areas and to design products and production systems

that minimize the generation of waste. Agricultural engineering graduates have in the past found jobs in the following areas of the economy;

1. **Government ministries and parastatals:** As water resources, environment, works engineers and instructors.
2. **Private companies:** services of engineers are needed in such companies as Tractor and Equipment.
3. **Educational Institutions:** educational institutions in Iraq include Colleges of Agriculture, Education, Technology including university and polytechnic.
4. **Research and Development Institutions** under the ministries of Agriculture and water resources such as Raw Material and Development Council (RMRDC),
5. **International Organization:** Including United Nations Development Programme (UNDP), Food and Agricultural Organization (FAO), United States Agency for International Development (USAID) etc equally employs engineers in their development programmes.
6. **Self Employment:** this area has not been fully explored. there is also the wide range of opportunities in storage, fields, factories, maintenance and sales of agricultural machinery etc.

### **Agricultural Engineering and National Development**

Agricultural Engineering has become one of the most effective and powerful tool in national agriculture development. This recognition has led

to more research and more advancement in agricultural engineering particularly in machinery design, post-harvesting technologies and greenhouses, ergonomics and safety, work organization, environmental protection and sustainable land development over the years. Agricultural Engineering plays a pivotal role in the development of the country through

1. *Food Security*- obtainable when food is abundantly produced above subsistence level and all other factors of production duly monitored.
2. Reduce drudgery in agricultural operations.
3. Development of rural infrastructure
4. Conservation of natural resources such as soil and water etc.
5. Environmental management
6. Industrial development
7. Subsistence agriculture