Crystal Water 2002

The sheet for facilitating maximization of your training outcome

Name	WALEED HASSAN MOHAMED ABOU EL- HASSAN	Country	EGYPT

Training Group Name	Domestic/Regional Problems	Contents (Subjects) to be studied in each unit	Results of Training	Additional Information Hoped for
Execution Case of E.I.A. (Aug.5-8)	Water pollution problems interloping between: • Sewage water. • Industrial residuals. • Agricultural drainage water &public water network	• How can we study the climatic conditions nationally and regionally? • How can we study the long-term effect of climatic fluctuations on natural resources? • How can we use the mathematical modeling to study the E.I.A.? • How can we reduce the uncertainty of prediction?	In this important program we studied some effective pointes as follows: • Watershed management in the upper basin of Karoon river (Iran) as a case study. • Outline and systems of environmental impact assessment. • Environmental guidelines of E.I.A • How, who, why, when and what is E.I.A.?	I HOPE TO STUDY: How can we use the mathematical modeling to study the E.I.A.?
Water Storage and Supply Facilities (Aug.12-16)	• Limitation of water resources for usage (less than 1000 m3 / capita). • Excessive water losses from channels. • Excessive lifting points from pumps through irrigation canals.	• To learn how we can evaluate irrigation systems using efficiency, equity, adequacy and dependability. • Basic principles for constructing different types of dams and solving their problems. • Stalinization of drainage canals and its side effect	From the lecture of this particular unit, the following are gained: *Design principles types of Dams according to many classifications. *.How we can solve sedimentation problem by using many methods and best solution. *How we can calculate safety factor against share & how we can prevent crack and hydration heat. *About environmental consideration how we can take it into consideration? * How we can calculate seepage through earth dams.	The following idea hope to complete Applied research using different irrigation systems.
Farm / Forest Management and Food Policy (Aug.20-24)	• Finance problems. • Cropping pattern problems. • Basic needs for food security.	• General overview of water resources management in arid areas. • The relation between water resources and agricultural development on the point of view an economic analytical in arid and semi arid areas.	Through my study in the study, I have gained some experience on: How we can make different kinds of surveys methods, the importance of secio-economic studies and the limitations of number of samples. • How we considered costs and benefits concept to be sustainable economically. • The statistical analyses of the food economy and elastic ties of demand. • Application training by using MS Excel program for estimation of production function through World Food Statistics and Graphics (source of data; Tottori University). • General overview for production growth of the major crops in the world from 1961-2000 by using simulation of world food supply including world population and growth up to 2150. • How we can evaluate prices of crops production according to world market prices and relationships among crops production and consumption. • The importance of forests for natural world through absorbing and storage of fixed carbon dioxide in the form of timber.	-Appling Japanese programmes in English version to be easy for use for example using MS Excel program for estimation of production function. - I need a study tour in Japanese forests.

Ground Water (Aug.26-29)	• Most of ground water is not renewable (un recovery) because the total precipitation less than 25 mm.	• Ground water utilization and management. • Types of aquifers and measurement of ground water pressure and ground water flow. • The effect of subsurface dam on seawater to fresh water intrusion.	• Some important items for groundwater as: Quality, recharge rate draw ability of ground water. • Investigation of saline water Intrusion and vertical distribution of salinity by using observation wells. • Countermeasures against saline water intrusion. • Groundwater pollution, classification and sources of pollution and countermeasures against ground water pollution. • Underground Dam and analysis of ground water flow in this case. • How we can apply engineering methods for lowering of groundwater. • Some of hydraulic properties. • Analysis of testing methods under steady and unsteady flow situations using apply examples. • Types of investigations as; pumping test, laboratory test, water level observation, rainfall observation and water quality test. • Concepts related to Hydraulic conductivity and storage parameters of aquifers.	• Please I need list of references.
Soil / Water Quality Assessment (Sep.9-12)	• Deterioration of soil due to adding chemical fertilizers and pesticides. • Water logging due to the drainage problems. • Salinity and alkalinity problems.	• Drainage water quality analysis for re-use purposes in order to save costly irrigation water supply & supplement irrigation water during shortage period. • Soil management in arid /semi arid areas to improve crop production.	Through my study in the study room and lab and study tours to east, west and central parts of Tottori city, I have gained some experience on: * How we can make a management for salinity problems through tolerant crops and calculating leaching requirements (LR) in different irrigation systems. • *Classification of soils according to soil chemical properties and FAO-UNESCO classification system. • *Comparison between saline and sodic soils under different characteristics as chemical, physical, effect on plant growth and how we can improve soils. • *How we can measuring EC, PH, SAR, ESP and its effect on plant (crop tolerance to salinity). • *The important parameters for agricultural use of sewage and its limitations. • *General overview of wastewater treatments according to WHO recommendations used systems in Japan. • *Structure of sewage treatment processing and classification of biological sewage processing. • *Different ways of wastewater treatment and the possibilities to use the purified wastewater for irrigation as means of water saving and prevention of environment. *Gained knowledge on manufacturing process of compost and its importance as soil improvement material.	The time for lab is not enough to learn more details about soil and water analysis through group training Crouse.

Field Water and Soil Management (Sep.24-Oct.3)	• Low efficiency from water users. • Low crop output per cubic meter of water supplied. • Irrigation efficiency is generally low especially in Lower Egypt.	• Measurement and estimation of ET using different methods. • Control and treatment of wastewater and their reuse in small &large scales. • Remote sensing to measurement soil moisture content and applied computer models to evaluate.	Faculty of agricultural: *Water quality –related problems in irrigated agricultural according to (FAO) and classification of irrigation waters according to USSL. *Salt accumulation in the soil and leaching requirements. *Estimation of gypsum amounts needed for exchangeable – sodium replacement. *How to evaluate irrigation system performance through irrigation area, conveyance distribution system and water sources. *How to evaluate water delivery system performance, adequacy, efficiency, dependability and equity. *How we can prevent secondary Stalinization in irrigated areas (from the view point of water management). *The theory for the Penman- Monteith method and why its recommended method. *Consumptive use of water by using Evapotranspiration method, soil moisture depletion method &water balance method. *The method for observation and estimation of the Evapotranspiration from the vegetation and using metrological data. *The soil –plant-atmosphere continues system (SPAC). *Soil and water interaction in greenhouse culture. *The needs for establish the irrigation scheduling and the fertigation. *Methods and Models for assessing the suitability of saline water for irrigation &crop production.	Applying and more details related to this important subject by our hand.
			Arid land research center: *Outline of increase total area of agricultural land through land reclamation and development of limited water resources. *The importance of measurement and predict soil water flow and solute transport in VADOSE zone (from soil surface to ground water level). *How we can measure water content, water storage, percolation losses and potential relationship. *Field measurement of hydraulic head by using tensiometers. *Relationship between soil temperature and soil moisture by using moisture sensors in sandy soils. *How we can use soil water flux and suction control system. *The importance of drip irrigation system. *Economical considerations for drip and sprinkler irrigation application. *Factors and countermeasures of desertification due to irrigated agriculture. *Facilities of drip irrigation system including the importance of self controlled emitter and different types of filters. * How to prevent soil erosion. *Using photo-grammetryin monitoring soil erosion. *The effect of artificial zeolite in sandy soils.	
Design and Practice in Water Supply / Service System (Oct.8-10)	• Timing problem of water release from reservoir to meet the requirement along the river. • Problem of distribution equality. • Wide cross section of most canals due to continues excavation.	• An over view on automatic control of water distribution systems. • Using different types and operation mechanisms of various water supply & distribution systems.	* Design and technical considerations for the automatic pressure-reducing valve, which used in pipeline irrigation system. * How we can test valves under different flow rates and pressures using new types of automatic pressure reducing valves. *General overview for semi-closed pipe ling using a float type constant flow valve and its hydraulic characteristics. *The new technologies which products for water supply such as a non-water hammer check valve to prevent water hammering at the time of pump shutdown and self- priming pump to eliminate the need for priming at the time of pump startup and indoor hydraulic test for these technologies. *Importance of low cost for low-pressure system including cost of facilities for example use of polyvinyl chloride.	

Crops Suitable for Arid Area; Plant Nutrition (Fertilization) (Oct.15-17)	• Water logging and salinity problems in irrigated rice crop fields. • Egypt needs a map for fertilization. • Limitation of crops which suitable for arid and semi arid areas (Egypt).	• Approach on water- crop- soil-fertilizer relation in arid and semi arid regions. • Irrigation scheduling. • Rice crop varieties, which can growth in arid & semi arid regions. • Cereal crops which suitable for arid regions.	*The importance of Kudzu plant (Pueraria Lobata) that used to fix soils and can grows vigorously even on poor soils (we can supply this system in Egypt canals to fix soils to solve wide cross sectional area). *Reuse of cans, plastic and glass in green houses for preparing small plants. *Outline of promoting development of the mushroom through three research sections: 1. Basic mycology. 2. Breeding and cultivation of edible fungi. 3. Field survey and extension. *The importance and technique for hydroponics. *The importance of Osmotic pressure for crops in saline soils.	
Preservation of Greens; Assessment of Vegetation (Oct.28-Nov.1)	• Expansion of urbanization with limitation of agricultural areas. • In 1997,Egypt population was reported to be 62 million of which 99%lives in the Nile Delta Valley.	• Characteristics of vegetation, which can growth in arid and semi arid lands. • How we can discriminate various land use types by using remote sensing. • How we can evaluate vegetation. • Relationship between environmental I.A. and mitigation.	*How we can revegatation through; -Low cost forestation. -Use of origin species for forestation. -Economical sustainable forestation. -Political arrangement of forestation system. -Foreign cooperation and aid. *Environmental characteristics of arid land through (water conditions, poor soils and salt accumulation). *How we can measure of sand movement by using (fixed pile method, sand collector method and ditch method). *Natural environment of sand dunes (Temperature and precipitation, wind and movement, drying and salinity). *What is the difference between cypress and woody plants? *Flooded stress conditions the trees have a wide area to absorb oxygen from air to gaseous exchangeable. *Changes in dissolve oxygen and temperature under moving water and standing water conditions. *The importance of environmental stress affecting on tree growth. *Ecological impact assessment and mitigation planning though a steps. *Biodiversity its crisis conservation and importance. *Classification of mitigations. *General introduction about what is the remote sensing? *What is difference between aero photo and remote sensing? *Remote sensing makes data from no thing. *There are many applications for remote sensing such as: Topographic mapping that can be up dating, agriculture (crop monitoring, classification), geological structure, environmental ecology, fishery (fishing spot investigation), disaster, and military purpose. *The importance of checks the availability of our data before Appling remote sensing. *In tree ring we find: climatic changes, underground water conditions, hydrological variations, ecological changes, environmental changes.	

Remark:

The ideas shown in this table and the courses listed by the training staff in Tottori University are relevant to the region I came from.

Courses on E.I.A. and Appropriate Research methods are also very instrumental in my case and the region I came from.