

Crystal Water 2002

—the sheet for facilitating maximization of your training outcome—

Name	Gulay YOLCU	Country	TURKEY
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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)	-Environmental issues include air, water and noise pollution due to industrial development, urbanization, and inadequate infrastructure. -Rapid deterioration of natural resources (water-soil-air ecosystem)	-Integrated regional planning, including watershed planning, resources planning and environmental health planning.	-Comprehensive information on watershed management in the mountainous area and its environmental assessment. -The importance of development projects that considered natural environment in improve the life quality of people, -The importance of identify the environmental impact assessment at an early stage for sustainable development. -Basic knowledge about environmental consideration for infrastructure projects; <u>environmental guidelines for road construction.</u>	-Impacts of climate change on watershed level. -Watershed management models in the water and land resources management.
Water Storage and Supply Facilities (Aug.12-16)	-Insufficient density of the canal system, poor field conditions, lack of on-farm development works, low efficiency field irrigation methods. -There is no enough facilities or systems to supply the water resources in Turkey. -The cost of the modernization and rehabilitation of facilities has increased sharply, many systems are deteriorating faster than expected. -Sedimentation in river beds and dams.	-Maintenance of water supply and storage facilities -Control of sedimentation in river beds and dams.	-In order to deal with the problems, to be form an effective link between research, experience and realities of the local conditions. -The importance of using appropriate experiment materials and low costs methods for maintenance of facilities. I obtained information about new construction method for concrete gravity dam (roller compacted dam method); sedimentation problem in the dam reservoir in Japan and removal methods of sedimentation	
Farm / Forest Management and Food Policy (Aug.20-24)	-Forested areas have decreased in result of fire, farming, illegal cutting and uncontrolled use of land. -Forest is affected by serious environmental problems -Agricultural productivity has been consistently falling over the past 10 years. -At present, Turkey is not self sufficient in food production. -There is no a food and nutrition policy, which covers the nutrition, food safety and sustainable food supply strategies.	-Sustainable food supply strategies -Sustainable forest management, afforestation.	- I obtained information that sustainable food supply strategies are; . to get under control the population rate, . achieve production increases, . costs and benefits concept be considered, . provide low costs facilities. - The importance of special purpose tax system for sustainable forest management. - Use of wood material as a construction material is a new way of environmental protection.	Forest management with environmental problems.
Ground Water (Aug.26-29)	-Very little information is available on the quality of ground water used in agriculture./ A good network of surface water quality monitoring stations exist in Turkey. - Exploitable groundwater resources of Turkey are 12.3 km ³ . However, all of this water stored in the ground can not be utilized due technical and economic reasons.	-Ground water pollution -Ground water hydrology -Sustainable utilization of surface and ground waters.	- Ground water behavior is changing under different conditions. For ground water investigation, the classification of ground water according to the saturation degree of soil, aquifer condition and ground water quality is very important. - I obtained information about hydro geological features of aquifer systems which is important to research of ground water flow and aquifer testing methods. - Continuous monitoring and evaluation is important for ground water conservation and ground water quality.	

Soil / Water Quality Assessment (Sep.9-12)	-Quite no data are available on the pollution brought to surface and ground water by agricultural activities, especially chemical measures and organo-metallic compounds -Salinity build up due to improper irrigation techniques and lack of drainage	-Approaches of soil water quality analysis. -Management of salinity problems -Rehabilitation and restoration of salt affected soils.	-General information about the attributes needed to characterize chemical properties of salt affected soils and irrigation water; soil characteristics of arid regions; water quality parameters which is needed to evaluate irrigation water quality problems in arid regions. - In order to control of salinity , continuous monitoring the salinity and alkalinity of soil and groundwater tables, chemical composition of groundwater and irrigation water, physical properties of soil and toxic elements during the irrigation is very important. - The importance of reuse of sewage to improve and carry on the quality of water resources and land resources . - Giving importance to use of purified wastewater as a irrigation water, and to use of compost fertilizer instead of chemical fertilizer.	-The evaluation of the factors cause water pollution at the basin level. -The evaluation of the water and soil pollution originated from erosion.
Field Water and Soil Management (Sep.24-Oct.3)	- Soils has been exposed to different degradation forms as a result of unsuitable land use on soil cultivation. - Highly variable rainfall, severe drought, erosion, topography, forest fires, and human-induced causes are the factors contributing to desertification - Conversion of forested land into agricultural land - Overgrazing - Poor soil structure, low organic matter of the soil, shallow soils are among the physical factors increasing the severity of erosion. - Arable land resources suffers from production limitations because of salinity and waterlogging.	-Soil erosion studies (GIS + remote sensing) -Runoff analysis -Preservation and management of land resources -Wind erosion	- I have gained knowledge on ; .The problems caused from improper irrigation techniques in arid regions and approaches for irrigation methods specifically suited to arid areas, .Measurement and estimation of evapotranspiration, .Improvement of salt affected soil and increasing of the available moisture in sandy soil using artificial zeolite, .Three dimensional water erosion analyzing system to estimate rill erosion, .Soil water profile and measurement of soil water flow and solute transport. It is important to understand the distribution of water content and solute concentration in soil water profile for soil management. - General evaluation of the factors which is contributing to desertification, according to different conditions/Regions. I understood that in each region/conditions, the determination of the appropriate management according to the water resources used for irrigation is necessary for sustainable utilization of soil and water resources.	-Analysis of soil erosion using rainfall simulator.
Design and Practice in Water Supply / Service System (Oct.8-10)	- There is urgent need to review and modernize the present laws relating to surface water allocation and water use, - Lack of budget in order to improve the system maintenance.	-Control mechanisms of the water supply/ service systems. -Recent technological developments in water supply/service systems	I acquired knowledge about the recent technological developments in the water channel systems which provide water control in the water channel system at desired pressure, depth and flow rate using the force of flowing water, and other developments in the water supply piping such as non-water hammer check valve and self-priming pump, More information was given during the observation of the production process of the automatic regulating valves at plant, We also observed the operation mechanism of variable low flow regulating valves and non-water hammer check valve and self-priming pump using experiment facilities. I gained information about the operating mechanisms of check gates during the field observation.	
Crops Suitable for Arid Area ; Plant Nutrition (Fertilization) (Oct.15-17)	-The loss of biodiversity with extensive clearing of natural vegetation and soil erosion, -The effect of salinity on nutrient availability, -Low plant production in salt affected areas.	-Suitable crops for arid and semiarid regions. -Development of salt resistant new species.	-I obtained information about several crops suitable to arid regions ; The present situation of the researches on propagation of tolerant varieties. -The preparation of the hydroponics system are carried out in the laboratory of plant nutrition and the influence of salt stress on maize and soybean in hydroponics is observed. -During the study trip to Japan Mushroom Center Mycological Research Institute, we obtained information about research activities and the main facilities of the institute. Japan Mushroom Center contribute the development of mushroom by the research and education activities and extension services for mushroom growers.	
Preservation of Greens; Assessment of Vegetation (Oct.28-Nov.1)	-The primary result of the erosion and desertification is the destruction of the food producing capacity of dry ground. -Serious losses in productive top soil. -Grasslands have very limited yields if because of excessive grazing and cutting for many years.	-Preservation of the food producing capacity of semi-arid regions -Ecological preservation methods. -Use of Remote Sensing (RS) and Geographic Information System (GIS) techniques to soil erosion studies.	-Basics of Remote Sensing (RS); Application areas of RS and GIS technologies; the role of these advanced technologies in monitoring and evaluating of environmental impact. -The importance of revegetation to control deterioration of vegetation and soil, and to preserve of the food producing capacity of semi-arid regions, -Understanding the formation process of sand dune, fixation methods and development of sand dune area from the study tour at The Tottori Sand Dune, -Understanding the growth and physiology of woody plants, -Biodiversity and its conservation, understanding the role of forest for water recharge and natural conservation, from the visit to river-head forest area.	more information on GIS technique.

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.