Crystal Water 2002

—the sheet for facilitating maximization of your training outcome—

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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)	● The public awareness on the relationship of E.I. and well-being is weak; ● Lack of national guidelines on E.I.A.	● Acquisition of the E.I.A's theories and their application; ● Methodology for investigation the impacts of policy decisions; ● Economic valuation of environmental impacts.	● Acquisition of fundamental knowledge on E.I.A and origin of their practice; ● Application of E.I.A in an watershed management; ● Application of E.I.A in road rehabilitation project.	● How to make economic valuation of environmental impacts; ● Application of E.I.A in Groundwater Development Projects; ● Application of E.I.A in Regional Development Projects.
Water Storage and Supply Facilities (Aug.12-16)	● High rate of silting-up in many stone dams; ● Severe destruction of irrigated fields due to lack of protection; ● Most of the rural populations of NIGER do not have facilities of drinking water and cleaning up; ● In our relatively big towns these facilities are so old and it's important to remedy.	● Maintenance of water supply and storage facilities; ● Advanced techniques to detect seepage in water storage facilities; ● Integrated approach to resolve cleaning up problems.	● The construction purposes of water storage and water supply facilities; ● Dam accidents and safety problem of dam; ● Methods of diagnosing deterioration of concrete; ● Durability of concrete canal in saline water; ● New dam construction method of the concrete gravity dam (RCD); ● Use of by-products in concrete.	● Techniques used for the evaluation of sedimentation's rate in a surface dam; ● How to assess the efficiency of an underground dam? ● Which criteria are used in sharing the advantages and disadvantages of a surface dam between two or tree countries?
Farm / Forest Management and Food Policy (Aug.20-24)	● Nonexistence of forest management; ● Increased human settlement in the few-forested areas of the country. ● Lack of strategies for the control of food quality.	● Choice of sustainable types of trees for reafforestation; ● Basic knowledge to protect and regenerate forests in semi-arid area.	● Methodology to make a farming survey (Cases of paddy fields in Côte d'Ivoire, in Tanzania and in Mexico); ● The introduction of new media (computers) in farm management is a necessary condition for the development of agriculture; ● Paradoxical situation of world food supply: decrease of world market prices of cereals while increase the world needs of food; ● Functions and financial evaluation of forests.	● How to make a successful farming survey when the majority (98%) of the farmers is illiterate? ● How to increase the productivity of pluvial agriculture in region where the annual rainfall decreases constantly? ● The international food aid and the development of local agriculture in regions where food shortage is chronic.
Ground Water (Sep. 03-06)	● Prohibitive costs due to deeper water levels; ● Contamination of shallow aquifers around big towns; ● Lack of network of observation wells due to wide territorial limits;	● Methods for groundwater research such geophysical prospecting (software for interpreting electrical soundings); ● Methodology for implementation of an network for observation wells; ● Modeling of groundwater flow (software for interpreting pumping tests).	● Principles of Groundwater Hydrology. Understanding these principles is essential for the exploration and exploitation of groundwater resources; ● Some aspects about groundwater pollution and how to make countermeasures against groundwater pollution; ● Underground Dam: How to design underground dam and analysis of groundwater flow in underground dam;	● Use of isotopic data in the assessment of groundwater resources; ● How to diagnose overexploitation of groundwater and it's impacts; ● How to set up a network of observation wells in arid area? ● How to store industrial and domestic wastes without affecting

			• Pumping tests: acquisition and analysis of data.	groundwater quality?
Soil / Water Quality Assessment (Sep.9-12)	• Impoverishment of soil quality due to monoculture; • Soil quality depletion due to desertification; • Soil degradation through salinization in irrigated fields.	• Classical techniques used for assessment of oil/water quality, their simplicity and cost; • Appropriate remedial measures (pre and after occurrence) to make a sustainable agricultural development.	• Classification of soils in the world; • Distinguishing features of saline soils and sodic soils; • Extraction at soil/water ratio of 1:5; • Saturation extract; • Treatment of wastewater, sludge and their recycling.	• How to use the adjusted SAR in the evaluation of a soil?
Field Water and Soil Management (Sep.24-Oct.3)	• Important water loss due to high evaporation; • High costs of efficient technologies.	• Evaluation of infiltration rate in irrigation systems; • Practice calculating water quantity required for crop in semi-arid context.	• Introduction to modern irrigation methods; • Factors affecting the selection of water-application method; • Irrigation scheduling; • Measurement and estimation of evapotranspiration; • Principle and measurement of soil water flow and solute transport parameters; • Prediction of soil water flow and solute transport.	• Additional informations are needed in the use of factor analysis in the interpretation of water erosion (Prof. Yamamoto).
Design and Practice in Water Supply / Service System (Oct.8-10)	• Limited technical know-how; • Insufficiency of skilled staff member.	• Acquisition of elementary principles in designing water supply; • Maintenance of water supplies system.	• Introduction of automatic regulating valve for pipeline; • Introduction of self-priming pump and non water hammer check valve for pipeline; • Introduce of automatic check gate for open-channel.	Many informations are given to us about these hydraulic equipments which are new for me.
Crops Suitable for Arid Area ; Plant Nutrition (Fertilization) (Oct.15-17)	• Few suitable crops are known; • Nonexistence of detailed studies on these crops; • Lack of national guidelines in the choice of fertilizers.	• Alternative measures leading to reduction fertilizer use; • Biological methods to fight against parasitic insects.	• Drought and salt tolerant crops and plants; • The basic technique for hydroponics; • Courtesy visit to the “Paradise Park” (Private company); • Visit for exploring the Tottori Mycological Institute (TMI).	• I want to know if there's an useful type of fungi mostly found in arid area? What can be his domain of utilization?
Preservation of Greens; Assessment of Vegetation (Oct.28-Nov.1)	• Lack of conservation of vegetation and green areas; • Increased tree felling for charcoal making which the majority of the population uses for cooking; • Degradation of vegetation resources due to livestock pressures in sahelian regions.	• Practical methods to stop dune-sand displacement; • Evaluation of herbaceous capital in semi-arid areas	• Description of ecosystems existing in Semi Arid and Arid Lands; • Sand fixation methods in Japan and Mitigation planning of dune oasis; • Growth and physiology of woody plants; • Tree-ring analysis: principle and application to environmental science; • Use of remote sensing and GIS in forest management.	• How to use the SPAC system in a project of revegetation? • According to the diurnal changes of water potential, what time is more indicated to irrigate?

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.