

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)	<ul style="list-style-type: none"> Giving less significance to impacts, which are not easily quantifiable. 	<ul style="list-style-type: none"> Clear guidelines of E.I.A specific to Irrigation projects with due emphasis for the unquantifiable benefits & impacts. 	<ul style="list-style-type: none"> Comprehensive understanding from planning to monitoring of E.I.A is obtained. Experiences on environmental issues from different countries learnt. 	<ul style="list-style-type: none"> Detailed ways to deal with unquantifiable items in comparing alternative projects. The ensuing courses are expected to deal with environmental issues pertaining specific to water resources developments.
Water Storage and Supply Facilities (Aug.12-16)	<ul style="list-style-type: none"> Water storage structures are not economically attractive. Sustainability of water schemes is usually at stake. 	<ul style="list-style-type: none"> Economical & Multi purpose reservoirs planning & operation. Eco-friendly ways of designing and operating water supply schemes. 	<ul style="list-style-type: none"> Cost effective ways of lining canals using agricultural byproducts is learnt as an option to reduce the large cost associated with construction of distribution network in Irrigation projects in my country. For timely maintenance of structures it is appropriate to continuously inspect them, in this regard this session gave me an insight as to how to diagnose deterioration of concrete structures. Effect of repeated wetting and drying on the durability concrete canals soaked in drainage water of salt accumulated fields. Efficient ways of analysis of seepage flow and new construction method for fill dams (RCD) was learnt. <p>Moreover, site observations gave me a clear picture of carefully designed water storage structures.</p>	<ul style="list-style-type: none"> Operation principles of Multi purpose reservoirs. Efficient methods of maintaining water conveyance and storage structures.
Farm / Forest Management and Food Policy (Aug.20-24)	<ul style="list-style-type: none"> Destruction of forests for search of fuel wood is a major problem Not efficient farming methods 	<ul style="list-style-type: none"> Promoting alternative sources of energy like biogas Efficient ways of farming & irrigation 	<p>The following are some of the core points learnt:</p> <ul style="list-style-type: none"> Careful bookkeeping of the farm, which actually does not entail any significant cost but is often neglected and collection of appropriate information on the farm is one of the pillars for efficient management of the farm. Maintaining the functions of forests is seen as higher benefit to public life, natural environment and augmenting the water resources, thus it should not be viewed solely as economic function. 	
Ground Water (Aug.26-29)	<ul style="list-style-type: none"> Ground Water resource potential of each river basin is not clearly identified. 	<ul style="list-style-type: none"> Hydrogeological investigation in the absence of highly specialized instruments. Conjunctive use of both surface & ground water Groundwater quality management 	<ul style="list-style-type: none"> Domestic water supply mainly relies on ground water in my region; potential sources of groundwater pollution and its appropriate countermeasures are studied here. In many instances there is a need for lowering groundwater table in this section various techniques are investigated. Introduction of underground dam can be another strategy to conserve high losses of evapotranspiration in tropical climates and resettlement problems occurring from surface water storage dams. But the cost and all its ill effects have to be critically evaluated first. 	
Soil / Water Quality Assessment (Sep.9-12)	<ul style="list-style-type: none"> A large tract of cultivable land is being abandoned due to salinity problems. 	<ul style="list-style-type: none"> Preventive and remedial measures for salinity problem like cost-effective ways of drainage techniques. 	<ul style="list-style-type: none"> On hand experience of evaluating soil and water chemical properties and what its implications for irrigation, Learnt how waste can be a potential resource. treating wastewater and safely disposing it and further augmenting water supplies for irrigation and industry 	<p>On the course on crops suitable for arid land area it is expected to get points on how plants manage with the various soil and water qualities under water stress situation.</p>

			through recycling wastewater	
Field Water and Soil Management (Sep.24-Oct.3)	<ul style="list-style-type: none"> ○ Much loss of water at field level 	<ul style="list-style-type: none"> ○ Suitable techniques of managing water on the field right from the planning phase to operation & management. 	Various aspects of Irrigation management from planning to management are explored: <ul style="list-style-type: none"> ○ Different ways of making irrigation scheduling. ○ Evapotranspiration computation ○ Appropriate ways of evaluating water distribution systems assessing the adequacy, efficiency, spatial and temporal distribution patterns. ○ Measures to prevent secondary salinization like biodrainage, ground water management. ○ Soil moisture management-recent trends for measuring soil moisture content like TDR. ○ Water harvesting and drip irrigation techniques 	Practical application of techniques for planning irrigation systems in the absence of good monitoring stations but with remotely sensed records.
Design and Practice in Water Supply / Service System (Oct.8-10)	<ul style="list-style-type: none"> ○ Frequent expansion works on water supply schemes ○ No timely maintenance works are done on water schemes 	<ul style="list-style-type: none"> ○ Flexible design which cater for rapid change in population ○ Appropriate maintenance strategies for water supply schemes. 	<ul style="list-style-type: none"> ○ Different preventive measures for water hammer pressure ○ Power saving automatic gate controller of Hokoku which unlike others is not affected by waves. ○ Self-priming pump patented product of Yokota 	Software packages for water distribution network design and analysis
Crops Suitable for Arid Area ; Plant Nutrition (Fertilization) (Oct.15-17)	<ul style="list-style-type: none"> ○ Site specific crops and their adaptability is not yet well explored ○ In some cases farmers are reluctant to use fertilizers. 	<ul style="list-style-type: none"> ○ Identification of Crops suitable for arid region ○ Environmental friendly ways of fertigation 	<ul style="list-style-type: none"> ○ Crops that can withstand harsh climatic conditions were learnt. Some crops like Katsu are quite good for erosion prevention ○ Sedum crop may grow with less soil conditions and adjust to different climatic changes. ○ Some crops are drought tolerant like wolfberry (Ninxia). 	
Preservation of Greens; Assessment of Vegetation (Oct.28-Nov.1)	<ul style="list-style-type: none"> ○ Extensive cultivation has caused loss of natural preservations 	<ul style="list-style-type: none"> ○ Intensive cultivation which give higher yields on small tracts of land. ○ Agro-forestry 	<ul style="list-style-type: none"> ○ Causes and control of deterioration of plants and soil in semi-arid area. ○ Application of tree ring chronology to climatology, hydrology and ecology. ○ Analysis of land use/land cover using remote sensing. ○ Ecological mitigation to maintain biodiversity. 	

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.