Action Plan 2009

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［Colligation of the Results of the Trainings］

1. **Please make up your summary of the entire Crystal Water reports and attach it as a separated sheet.**

2. **Please describe the institutes, companies, sites, facilities, and/or equipment that were especially impressive to you during the observation and study tours as well as supportive reasons. Please also describe what you have learnt through such experiences and frank impressions.（More than three subjects, Mark all that apply.）**

Study Tours / Observation Programs	The institutes, companies, sites, facilities, and equipment	What you have learnt / your impressions without reserve
Hojo Sand Dune Project	Land Improvement District Project Tottori Prefecture. Facilities and equipment:- Head works, Irrigation water center, Pumping station, Pressurization station, Farm pond and main canal.	I learnt the proper management of land improvement and appropriate utilization of water resources. My impression is, this project gave me example of effective utilization of lands and proper field irrigation facilities and developing region.
Tohaku National Irrigation Project	National Project/Tottori prefecture/Tohaku Area. Facilities including Kodamata dam, Nishitako dam and Senjohzan dam, Head works, Head races, Main canal, Diversion channel and pump stations.	I learnt the knowledge and techniques for appropriate utilization of water resources. Also proper management and implement of agriculture and rural development. My impression, all the system of operation is automatic this automation will reduce the cost of operation in same time accurate and safe.
National Institute for Rural Engineering (NIRE)	National institute/Tsukuba Science City. The facilities of NIRE are: Hydrological models, laboratory of farm and engineering, laboratory of hydraulic engineering for canal system and laboratory of hydraulic engineering for water resources structures.	I learnt the techniques of local management to improve the vitality of a rural area. Also the techniques for a sound water cycle system. My impression is by comprehensive researches can improve the safety of irrigation infrastructure. This high techniques will contribute directly to rural developments.

3. Please give accounts of the training contents that were especially useful for you and the supportive reasons.
（More than three subjects，Mark all that apply.）

Training Subjects	Contents of Training	Reasons
River System Management	Management of water quality system Management of river flow system	This subject helped me - To know the flow discharge of the rivers in order to avoid any damage to high floods. - To describe water quality and measure the degree of pollution. - To understand water quality analysis using mathematical models - I understood the history of the law for river and water quality management.
Field Water Management	Design of irrigation system Management of irrigation system Design of irrigation scheduling	I acquired knowledge and techniques of appropriate utilization of water resources making plans for water use and irrigation facilities management. I understood the soil-water relation and moisture holding capacity of soil. I learnt how to calculate irrigation interval according to field capacity. I Knew how to design and to manage irrigation system. I understood the design of irrigation scheduling using Crop wat windows
Environment Impact Assessment	Components of environment and environmental problems Development project plan and environmental impact assessment. Implementation of environmental impact assessment.	I acquired knowledge and techniques for valuing environment impacts. I understood the goal of environment impact assessment is to minimize impacts of development (human intervention) on ecosystem and environment. I learnt the EIA process (screening, scoping, predicting, management and monitoring, and auditing). I learnt how to calculate EI for example growth rate of population using Rule of thumb: 70 rule.

［Action Plan］

Please describe the contents of the project or the action plan that you are scheduled to carry out or set up based on the findings of the training course in Japan.

Project Title	Workshop for field Engineers on Efficient Water use	Target Area	Sennar State / Sudan
Climate, population and problems	**Climate: -** With semi humid climate. The average annual rainfall is about 300mm. The rainy season is limited to three month from July to October. **Population: -** About 350,000 **Problems:** - Because of short rainy season, the supplementary irrigation. - Bad infrastructure like access abroad during the rainy season. - Less development and low education level. **Area: -** About 3000 km2		
Long-range Goal	*Please describe your goals to attain in the long term (about in 10 years)* To build national capacity for sustainable use of water resources including the following items:- 1- Development and management of water resources, operation and maintenance of water services must be economically sustainable through recovery of cost from those who benefit. 2- All water including surface and groundwater form part of hydrological cycle and should be managed in an integrated manner. 3- The development of water resources will be undertaken in order to maximize its benefit the public interest while ensuring minimum adverse impact on the environment. 4- Supporting the programs for advanced training and capacity building in the field water use efficiency.		
Short Term Goal	*Please state your goals to attain in the short time (1 to 3 years). It is preferable to give a more detailed account in the more concrete and definite terms.* To train field agricultural engineers about:- 1. Field water management. 2. Monitoring of water levels and flow gates, intakes and metrological data, e.g. rainfall and its element. 3. Hydrological data, e.g. stage and discharge and water quality. 4. Problems of irrigation facilities and drainage canals. 5 Parameters of irrigation performance, e.g. conveyance efficiency distribution efficiency and field efficiency and application efficiency.		
	Please itemize the expected results. In describing in this section, please take the aforesaid "Site Description" into consideration above all.		

Expected results and outputs by the project (the action plan)	To increase the output of projects in this area by proper management of water resources. To improve the operation, management and maintenance of irrigation facilities	
Concrete action plans and specific organizations/departments or posts in charge of each program described	The contents of the actions	The Organizations/departments in Charge
	Efficient water use because of limitation of water resources The best monitoring of water levels and flow gates and intakes. Improving of irrigation facilities.	Ministry of irrigation and water resources (National) Ministry of agriculture and irrigation (state government) Training department (ministry of irrigation & water resources)
Input necessary for the actions (Budget; estimated project costs, Personnel, Material, Equipment, Instruments, etc.)	Please describe in full as much as possible by making the maximum use of the information available at this time.	
	Materials = 200$ Personnel = 900$ Equipment = 400$ Instruments = 300$ Allowances = 1000 Others = 200$ ---------- Total = **3000** $	
Time Schedule for Implementation	*Please attach it in a separated sheet. You are free to format, however, please figure a readily understood form for the concerned parties.* ***Sheet attached***	
Points to keep in mind	*Please describe the sustainability of the project, socio-economical and ecological impact, relations with other organizations and departments that need attention to deal with.*	
	To increase the crop yields, then the more benefit To preserve the land and ecology of the inhabitants. To stop the migration from this rural area to urban area. To improve the service like health, education and social-economic.	

［Regarding the Training Course］

1. In order to make the training course more fruitful from the next fiscal year and onward, please itemize your requests for the course.

All components of this training program very useful to gain necessary knowledge and technology for land and water resource for effective utilization in arid and semi-arid region but the duration period not sufficient even the lecturers many time saying the topics is big related time given in time table, I suggest to extent the time or reduce the components of this program.

2. Finally, please state your explicit opinions and impressions on this training course.

Successful and useful program because I acquired necessary knowledge and techniques for appropriated utilization of water resources making plans of land use and land management.
Also visit to site observations and study tour trip is useful, but the time not enough I propose to extent more.

	Day1	2	3	4	5	6	7	8	9	10	11	12
Actives												
Site preparation												
Materials & Equipment												
Selection of staff												
Selection of trainees												
Starting of lectures												
Site visit & Study tour												
Closing & evaluation												
Reports												

Remarks:-

Number of participants = 10

Duration period = 12 days

Total cost = 3000$