

Table: PDM₃

Project Period: November, 2006-October, 2009 Target site: Central Dry Zone Target Group: DDA staff Nov. 22, 2007

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal</p> <p>The number of villages in the Central Dry Zone with access to safe drinking water is increased.</p>	<p>The number of the villages in the Central Dry Zone which does not have access to safe drinking water is reduced by half (by 2015, the targeted year of MDGs).</p>	<p>Quarterly report and annual report of DDA</p>	
<p>Project Purpose</p> <p>Capacity for construction, repair and maintenance of water supply facilities in the Central Dry Zone is strengthened.</p>	<p>The report on Lessons Learned and Good Practices is prepared.</p>	<p>The report on Lessons Learned and Good Practices</p>	<p>DDA carries out its rural water supply project as planned.</p>
<p>Outputs</p> <p>1. Advanced technology for construction of rural water supply facilities is transferred.</p> <p>2. Advanced technology for rehabilitation of deep tube wells is transferred.</p> <p>3. Advanced techniques for maintenance / monitoring of water supply are transferred.</p>	<p>1-1 More than 20 deep tube wells are drilled and over 16 thousand people can access safe drinking water from these wells.</p> <p>1-2 More than thirty four (34) staff receive technical training.</p> <p>2-1 More than 40 deep tube wells are rehabilitated and over 50 thousand people can access safe drinking water from these wells.</p> <p>2-2 More than thirty seven (37) DDA staff receive technical training.</p> <p>3-1 Manuals for villagers and DDA staff on maintenance/monitoring.</p> <p>3 2 More than thirty seven (37) DDA staff are trained through activities.</p> <p>3 3 More than one hundred and twenty (120) villagers of Water Management Committee receive technical training.</p>	<p>1-1 Progress report of the project and quarterly report of DDA.</p> <p>1-2 Progress report of the project and quarterly report of DDA.</p> <p>2-1 Progress report of the project and quarterly report of DDA.</p> <p>2-2 Progress report of the project and quarterly report of DDA.</p> <p>3-1 Progress report of the project and quarterly report of DDA.</p> <p>3 2 Progress report of the project and quarterly report of DDA.</p>	
<p>Activities</p> <p>1-1 To conduct training on the groundwater exploration geographic survey.</p> <p>1-2 To conduct training on the advanced technologies in drilling deep tube wells.</p> <p>1-3 To prepare equipment/materials necessary for the field training on the drilling of deep tube wells.</p> <p>1-4 To repair boring related equipment for the training on the drilling practice of deep tube wells.</p> <p>1-5 To compile lessons learned and good practices on drilling deep tube wells.</p> <p>1-6 To compile good practice/cases on the design of reservoir tanks.</p> <p>1-7 To prepare a manual for the training on the planning of water supply facility construction.</p> <p>1-8 To conduct training on the planning of water supply facility construction.</p> <p>2-1 To collect basic information for rehabilitation of existing deep tube wells.</p> <p>2-2 To conduct training on the rehabilitation of tube wells.</p> <p>2-3 To prepare equipment/materials necessary for the training practice to rehabilitate the existing deep tube wells.</p> <p>2-4 To compile lessons learned and good practices on the rehabilitation of deep tube wells.</p> <p>3-1 To select the pilot township.</p> <p>3-2 To conduct a survey on the condition of the management/maintenance of water supply facilities by the villagers in the selected township.</p> <p>3-3 To prepare a manual for the villagers on the management/maintenance of water supply facilities.</p> <p>3-4 To prepare manual for DDA staff on management and maintenance of water supply facilities.</p> <p>3-5 To conduct training for DDA staff on the management/maintenance of water supply facilities.</p> <p>3-6 To conduct training for the leader and member of water committee in the pilot township on maintenance of water supply facilities.</p> <p>3-7 To compile a case on the management/maintenance of the water supply facilities.</p>	<p style="text-align: center;">Input</p> <p style="text-align: center;"><i>Japan</i></p> <p>1. Experts Chief Advisor Chief Advisor (2) Geophysical Survey Hydrogeology Well Drilling Machine Well Drilling Mechanical Equipment Water Supply Planning Social Mobilization Social Mobilization(2) 2. Local Consultant 3. Training of C/P in Japan 4. Machinery and Equipment 5. Local Cost</p>	<p style="text-align: center;"><i>Myanmar</i></p> <p>1. Counterpart Personnel 2. Facilities (1) Office space for Japanese experts at central / local level (2) Repair workshop and training facility and equipment necessary the Project activities (3) Others 3. Budget (1) Salary for DDA C/P, Travel Expense (2) Administrative Cost</p>	<p style="text-align: center;">Preconditions</p> <p>DDA arranges equipment/materials DDA assigns counterpart personnel</p>

Table: Achievement Grid

<i>Narrative Summary / Planned Activities</i>	<i>Means of Verification</i>	<i>Baseline of Activities and Envisaged Targets as of Today</i>
1-1 To conduct training on the groundwater exploration geographic survey.	Progress Report (Geophysical Survey)	DDA staff lack analysis skills and interpretation skills of analyzed results. By improving their analysis skills, DDA staff will be able to respond to trouble and interpret the analysis as engineers.
1-2 To conduct training on the advanced technologies in drilling deep tube wells.	Progress Report (Well Drilling)	DDA staff lack skills for treatment of muddy water and lost circulation, as well as drilling experiences of deep tube wells. Through the training programme, DDA staff will be able to respond to these issues practically.
1-3 To prepare equipment/materials necessary for the field training on the drilling of deep tube wells.	Annual Equipment Plan and Delivery Note	DDA staff lack equipment for drilling 300 meter deep tube wells and equipment for preventing lost circulation. DDA staff will be able to search for shortages of equipment, check and prepare it.
1-4 To repair boring related equipment for the training on the drilling practice of deep tube wells.	Progress Report (Mechanical Equipment)	DDA staff has a high capacity to repair boring machines, but the capacity to repair machines for deep well drilling is unknown. Through the training, DDA staff will be able to repair the machines for deep well drilling.
1-5 To compile lessons learned and good practices on drilling deep tube wells.	Case Study Report (Drilling of Deep Tube Well)	DDA staff can drill up to a depth of 200 meter, but lessons from failed drilling cases have not been recorded. By conducting deep tube well drilling and compiling the lessons and cases, good practices/cases will be utilized in other areas.
1-6 To compile good practice/cases on the design of reservoir tanks.	Reservoir Tank Design Report	There are good practices for constructed water reservoir tanks as well as damage accidents. Among the DDA staff, some staff lack knowledge of designing reservoir tanks. DDA staff will be able to design reservoir tanks and compile good practice/cases for other areas.
1-7 To prepare a manual for the training on the planning of water supply facility construction.	Training manual	Any training programmes or manuals for the planning of water supply facility construction are made among DDA staff. The manuals for the training will be prepared and used in a sustainable way.
1-8 To conduct training on the planning of water supply facility construction.	Progress Report (Water Supply Planning)	DDA staff lack the knowledge about planning water supply facility construction. Through the training program, DDA staff will be able to plan the water supply facility construction.
2-1 To collect basic information for rehabilitation of existing deep tube wells.	Well Inventory	DDA lack management and usage of a database for well inventory. DDA staff will be able to collect well inventory and manage/use the database.
2-2 To conduct training on the rehabilitation of tube wells.	Progress Report (Well Rehabilitation)	DDA staff lack rehabilitation knowledge and field experience. Through the training, DDA staff will be able to independently rehabilitate wells.
2-3 To prepare equipment/materials necessary for the training practice to rehabilitate the existing deep tube wells.	Check List for Rehabilitation Equipments	Due to insufficient knowledge about rehabilitation, the equipment necessary for rehabilitation is not confirmed. DDA staff will be able to research the insufficient equipment and prepare it.

<i>Narrative Summary / Planned Activities</i>	<i>Means of Verification</i>	<i>Baseline of Activities and Envisaged Targets as of Today</i>
2-4 To compile lessons learned and good practices on the rehabilitation of deep tube wells.	Case Study Report (Rehabilitation of Deep Tube Wells)	Due to the lack of practice on rehabilitation by DDA staff, there are no lessons or good practices compiled. By compiling good practices, rehabilitation skills will be disseminated and rehabilitation will be smoothly conducted in other areas.
3-1 To select the pilot villages.	Completion Report and Progress Report	Selection of the pilot villages has not yet been done. Clarifying the selection criteria, DDA staff and the JICA Expert Team will collectively make a report to select the pilot villages.
3-2 To conduct a survey on the condition of the management/maintenance of water supply facilities by the villagers in the selected villages.	Baseline Survey Report	A baseline survey of pilot township has not been conducted. After the baseline survey is conducted based on the selection of the pilot villages, the outputs of the Project will be clearly understood by comparing them to the outputs after the Project.
3-3 To prepare a manual for the villagers on the management/maintenance of water supply facilities.	Manual for O&M of Water Supply Facilities (Villagers)	There are no manuals for management/maintenance of water supply facilities in both hard and soft aspects. By DDA and the JICA Expert Team collectively preparing the manuals, the manuals will be used for raising awareness of villagers by DDA staff.
3-4 To prepare a manual for DDA staff on management and maintenance of water supply facilities.	Manual for O&M of Water Supply Facilities (DDA staff)	A manual for DDA staff on management/maintenance of water supply facilities has not been made. The manual will be made by the JICA Expert Team, considering opinions from DDA staff, and will be used for operating the facilities.
3-5 To conduct training for DDA staff on the management/maintenance of water supply facilities.	Training Activity Report (Water Supply Facilities for DDA staff)	Management/maintenance of water supply facilities by DDA is insufficient. Through receiving the training, DDA staff will be able to conduct awareness programmes towards villagers for systematic management/maintenance.
3-6 To conduct training for the leader and member of water committee in the pilot villages on maintenance of water supply facilities.	Training Activity Report (Water Supply Facilities for Villagers)	Management/maintenance of water supply facilities is not executed by villagers at the newly constructed water supply facilities. Training for villagers will be conducted by DDA staff in consideration of the status before, during, and after the construction.
3-7 To compile a case on the management/maintenance of the water supply facilities.	Case Study Report (Management/Maintenance of Water Supply Facilities)	Cases on management/maintenance of water supply facilities have not been compiled. Implementing practical management/maintenance activities, the cases will be compiled and printed as materials. Lessons and good practices will be disseminated by using the materials.

Term	The 1st Year					The 2nd Year												The 3rd Year												The 4th Year										
Fiscal Year	FY 2006					FY 2007												FY 2008												FY 2009										
Calendar Month	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11			
No. of Total Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37			
0-1 Preparation of Inception Report	█																																							
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Figure: Plan of Operation