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Zoning-in on Water Management

Medan Water Utility Case

By

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The views expressed in this paper are those of the author and do not necessarily reflect the views and policies of the Asian Development Bank.

SLIDE 1 : _____

GOOD AFTERNOON, LADIES AND GENTLEMEN :

1. THE MAYOR OF MELBOURNE CITY AS THE HOST FOR THIS MAYORS ASIA PACIFIC ENVIRONMENTAL SUMMIT (MAPES) 2006,
2. MAYORS OF THE ASIA PACIFIC COUNTRIES TO BE PRESENT HERE TODAY.
3. ALL DISTINGUISHED GUESTS.

FIRST OF ALL, ON BEHALF OF PROVINCIAL GOVERNMENT OF NORTH SUMATRA, I SHOULD EXPRESS MY THANKFULNESS TO THE ORGANIZING COMMITTEE OF THIS GREAT MAPES 2006, THAT IS THE ASIAN DEVELOPMENT BANK AS WELL AS THE MAYOR OF MELBOURNE CITY FOR HAVING GIVEN ME THIS OPPORTUNITY TO SPEAK IN THIS RESPECTFUL FORUM AND TO REPRESENT OF MEDAN CITY – A CAPITAL CITY OF NORTH SUMATRA PROVINCE, REPUBLIC OF INDONESIA.

AS HAVING BEEN REQUESTED BY THE ORGANIZING COMMITTEE, I SHOULD CARRY OUT MY PRESENTATION ON SPECIFIC TOPIC CONCERNING ZONING IN WATER MANAGEMENT BY PDAM TIRTANADI OF NORTH SUMATRA. BUT, BEFORE I PROCEED FURTHER, I HAVE THE HONOR TO INTRODUCE A LITTLE DETAIL ABOUT NORTH SUMATRA PROVINCE, ESPECIALLY MEDAN CITY IN ITS ROLES AS THE CAPITAL CITY OF NORTH SUMATRA AS WELL AS PDAM TIRTANADI, A COMPANY, IN WHICH I AM MANAGING AT THE MOMENT.

SLIDE 2 : _____

NORTH SUMATRA PROVINCE IS LOCATED IN SUMATRA ISLAND, THE HOME OF ABOUT 12 THOUSAND POPULATIONS. IT COVERS AREAS OF ABOUT 71,680 SQUARE KILOMETETERS. NORTH SUMATRA PROVINCE BORDERS WITH ACEH PROVINCE AND WEST SUMATRA PROVINCE. IT IS WELL KNOWN WITH ITS LAKE TOBA, WHICH EXACTLY LOCATED RIGHT IN THE MIDDLE OF NORTH SUMATRA PROVINCE. THE MAIN PRODUCE OF NORTH SUMATRA PROVINCE IS FROM

INDUSTRY SECTORS AND PALM OIL PLANTATION, AS WELL AS RUBBER AND TOBACCO.

MEDAN CITY IS THE CAPITAL CITY OF NORTH SUMATRA PROVINCE AS CENTER OF ADMINISTRATION. IT IS THE HOME FOR ABOUT 2.1 MILLION POPULATION – COVERING AN AREA OF ABOUT 262 SQUARE KILOMETERS. MEDAN IS WELL KNOWN AS THE THIRD BIGGEST CITY IN INDONESIA AND IT SERVES AS THE CENTER OF ADMINISTRATION, EDUCATION, INDUSTRY AND TOURISMS.

PDAM TIRTANADI IS THE PROVINCIAL GOVERNMENT OWNED AND WAS ESTABLISHED IN 1905. ITS MAIN ROLES ARE TO CARRY OUT DRINKING WATER SERVICE IN MEDAN CITY AND OTHER 10 DISTRICTS IN NORTH SUMATRA. THE MAIN HEADQUARTERS IS SITUATED IN MEDAN CITY, WHICH FUNCTIONS AS CENTRAL OFFICE OF PDAM TIRTANADI.

SLIDE 3 : _____

UP UNTIL JANUARY 2006, IT HAS SERVED ABOUT 349.480 CUSTOMERS. HOME CONNECTION AND WASTE WATER CUSTOMERS HAS REACHED ABOUT 10.296. OF THE EXISTING NUMBER, DOMESTIC CUSTOMERS ARE THE MOST DOMINANT GROUP BY ABOUT 89% OF THE TOTAL NUMBER. IN MEDAN ALONE, TIRTANADI HAS SERVED ABOUT 81,9% OUT OF THE TOTAL POPULATION. THIS ACHIEVEMENT HAS BEEN GOING OVER THE MINIMUM COVERAGE AS STIPULATED WITHIN THE MILLENIUM DEVELOPMENT GOALS. MEANWHILE, WITHIN THE AREAS OUTSIDE OF MEDAN CITY, THE DRINKING WATER SERVICE HAS ONLY ACHIEVED 31,9%. IT IS STILL RELATIVELY SMALL PROGRESS 'CAUSE PDAM TIRTANADI HAS ONLY STARTED FOR ABOUT 5 YEARS DOING OPERATION IN 10 DISTRICT GOVERNMENTS WITHIN NORTH SUMATRA PROVINCE – THROUGH JOINT OPERATION WITH EACH DISTRICT GOVERNMENT.

IN CONTEXT OF SERVICE DELIVERY, AT THE MOMENT, THE PRODUCTION CAPACITY OF PDAM TIRTANDI HAS REACHED ABOUT 5,162 LITERS/SECOND USING SURFACE WATER OF ABOUT 79%, SPRING WATER ABOUT 20% AND THE REST USING ARTESIAN WELLS.

IN TERM OF ITS OPERATION, PDAM TIRTANADI HAS BEEN USING ITS OWN FUND OBTAINED FROM THE SALES OF CLEAN WATER, SOME OF WHICH IS LOAN FROM FINANCING INSTITUTIONS EITHER FROM HOME COUNTRY OR OF THE OVERSEAS ONES AND SOME FROM CAPITAL PARTICIPATION OF THE GOVERNMENT OF NORTH SUMATRA PROVINCE.

SLIDE 4 : _____

UP TO THE PRESENT MOMENT, PDAM TIRTANADI CAN BE CATEGORIZED AS ONE OF THE HEALTHIEST COMPANY IN INDONESIA. IT HAS BEEN ABLE TO GAIN GREAT PROFITS FROM ITS OPERATION AND AS WELL CAPABLE OF SERVING ITS CUSTOMERS. THE AMOUNT OF PROFIT AND ITS CONTRIBUTION TO THE PROVINCIAL GOVERNMENT HAS SHOWN AN INCREASE SIGNIFICANTLY FROM YEAR TO YEAR. SEVERAL TIMES, PDAM TIRTANADI HAS RECEIVED SOME AWARD OF GREAT ACHIEVEMENT, EITHER FROM PRIVATE AND GOVERNMENT SECTORS, AND IT IS A REAL PROVE THAT IT STILL EXISTS AMONG MANY COMPANIES OF THE SAME OPERATION IN INDONESIA. IT IS BEYOND REASONABLE DOUBT THAT MANY INVESTORS, EITHIN WITHIN HOME COUNTRY OF FROM THE OVERSEAS ONES, WOULD LIKE TO CONDUCT BUSINESS COOPERATION WITH PDAM TIRTANDI. SOMEHOW, WITHIN ITS CORE BUSINESS, PDAM TIRTANADI IS KEEPING A COMMITMENT TO CONTINUE IMPROVING ITS BUSINESS PERFORMANCE TO BE MORE EFFICIENT AND HEALTHIER, WHICH MAY COVER THE NOTIONS OF LOWERING THE DEGREE OF WATER LOSS AS WELL AS INCREASING THE PROFIT AND CARRYING VARIOUS OTHER CONSTRUCTIVE EFFORTS.

BASED ON THE AUDIT RESULT AS CONDUCTED BY GOVERNMENT APPOINTED AUDITOR FOR THE PERIOD OF 2000 UNTIL 2005, PDAM TIRTANADI HAS SHOWN A GREAT PERFORMANCE UNDER CATEGORY OF “GOOD/HEALTHY”. THE AUDITING PROCESS HAS EMPLOYED SEVERAL PARAMETERS, SUCH AS OF THE OPERATIONAL ASPECTS, AND OF FINANCIAL AND ADMINISTRATIVE ASPECTS.

NON REVENUE WATER, WHICH HAS BEEN THE MAIN FOCUS OF THE MANAGEMENT ALWAYS STAYS AT ABOUT 19 – 21%. THE WATER LOSS IS STILL UNDER GOOD CATEGORY COMPARED TO SIMILAR COMPANY DOING OPERATION IN INDONESIA. SOMEHOW, THE COMPANY IS STILL CONTINUOUSLY VERY COMMITTED TO LOWER WATER LOSS LEVEL UP TO BETTER LEVEL.

AT THE MOMENT, PDAM TIRTANADI HAS EMPLOYED 1,480 WORKERS WHO ARE READY TO GIVE BETTER SERVICE TO ABOUT 349,480 CUSTOMERS, WHICH MEANS THAT EVERY 4 WORKERS CAN SERVE 1000 CUSTOMERS IN ITS RATION. BUT EVEN SO, PDAM TIRTANADI WILL CONTINUE IMPROVING ITS EFFICIENCY TOWARDS THE USE AND MAINTENANCE OF FACILITIES AND EQUIPPMENTS TO BE MORE EFFECTIVE, EFFICIENT AND ACCOUNTABLE.

ON THE AVERAGE LEVEL, THE BILLING PERFORMANCE OF THE CUSTOMERS HAS INDICATED A PROGRESS OF ABOUT 98% EVERY MONTH. THIS IS SHOWING THAT THE MOST NUMBER OF CUSTOMERS ARE UNDER CATEGORY OF OBEDIENT CUSTOMERS, FOR THEY HAVE GOT BETTER SERVICES AS THEY HAVE ALWAYS EXPECTED OF PDAM TIRTANADI TO DO SO, ACCORDINGLY.

COMING ALONG WITH THE INCREASING DEMAND OF THE PEOPLE OVER CLEAN WATER AND OF THE INCREASING NUMBER OF CUSTOMERS, THE AMOUNT OF WATER BEING SOLD IS ALSO GETTING INCREASED IN NUMBER ON THE AVERAGE BY 9% PER YEAR. THIS HAS COME ALONG WITH THE INCREASE OF PROFIT TOO BY 18,785 PER YEAR.

SLIDE 5 : _____

AT PRESENT, PDAM TIRTANADI HAS OPERATED 5 (FIVE) WATER SOURCE TO TOP UP THE SERVICE COVERAGE OF CLEAN WATER CUSTOMERS IN MEDAN CITY. FIVE AMONG THE SIX SOURCES USE SURFACE WATER FROM 3 RIVERS FLOWING DOWN TO MEDAN CITY, RESPECTIVELY WATER TREATMENT PLANT OF SUNNGAL WITH CAPACITY OF ABOUT 1,800 LITERS/SECOND AND WATER TREATMENT PLANT OF HAMPARAN PERAK WITH CAPACITY OF ABOUT 200 LITERS/SECOND, WHICH USES RIVER BELAWAN AS WATER SOURCE AS ITS RAW MATERIAL, AS WELL AS WATER TREATMENT PLANT OF DELI TUA WITH CAPACITY OF ABOUT 1,400 LITERS/SECOND, WHICH USES RIVER BELUMAI WATER SOURCE AS ITS RAW MATERIAL. THE PRODUCED CLEAN WATER HAS BEEN WELL TESTED, WHICH HAS BEST HEALTH PRE-REQUISITE AS DEFINED BY THE GOVERNMENT OF REPUBLIC OF INDONESIA.

MEANWHILE, OTHER SOURCE IS THE WATER SOURCE OF SIBOLANGIT, WHICH FLOWS DOWN GRAVITATIVELY TO MEDAN CITY – THROUGH A COVEYING PIPES OF ABOUT 40 KILOMETERS LONG. THE CLEAN PRODUCED FROM THIS SOURCE IS OF THE BEST QUALITY, SINCE IT COMES FROM WATER FOUNTAIN EXISTING SURROUNDING THE CHAINS OF BUKIT BARISAN MOUNTAIN. BESIDES, THE MOUNTAIN AREA OF SIBOLANGIT HAS BEEN EARMARKED AS PROTECTED RESERVE DUE TO ITS FUNCTION AS WATER CATCHMENT AREA AND AS POOLS OF RAIN WATER AND MAKES IT AS CLEAN WATER SOURCE FOR MEDAN CITY. THESE MOUNTAINOUS AREAS ARE OF THE UPSTREAM OF MANY RIVERS FLOWING DOWN TO MEDAN CITY, FOR WHICH PDAM TIRTANADI USES THEM AS RAW MATERIALS.

IN LINE WITH THE RAPID DEVELOPMENT OF MEDAN CITY, THE RESERVE FOREST OF SIBOLANGIT AT THE SOUTHERN PART HAS BEEN TURNED INTO CONSERVATION AREA, WITHIN WHICH THE CITY GOVERNMENT AND PROVINCIAL GOVERNMENT HAVE LIMITED DEVELOPMENT ACTIVITIES.

THEREFORE, THE SOUTHERN PART OF MEDAN CITY HAS BEEN CONCENTRATED MORE ON HOUSING AND SETTLEMENT ACTIVITIES – WHILE THE NORTHERN PART AND SOME AREAS OF THE EASTERN PARTS AND ALONG THE UP TO THE WESTERN PART ARE EARMARKED FOR CENTERS FOR INDUSTRIAL ACTIVITIES.

SLIDE 6 : _____

THE DEVELOPMENTAL STRATEGY AND DEVELOPMENT OF MEDAN CITY IS DIRECTED TO THE WESTERN, EASTERN AND NORTHERN PARTS, IN SUCH A CONTROLLABLE WAY ON PRETEXT OF ECOLOGY AND ENVIRONMENTAL CITY ECOSYSTEM WITH MAIN EMPHASIS OF UTILITY DEVELOPMENT AND SOCIAL ACTIVITIES. CONSIDERING THAT TRADING ACTIVITIES ARE PRESENTLY CONCENTRATED IN CENTRAL CITY, IT IS GREATLY EXPECTED THAT BY DIRECTING THE CITY DEVELOPMENT ALONG THE WAY SIDE TO THE WESTERN, EASTERN AND NORTHERN PART, IT IS OBVIOUSLY HOPED THAT ALL DEVELOPMENT OF LIVING SECTORS CAN BE EVENLY DISTRIBUTED.

MEANWHILE, THE MAIN DEVELOPMENT TOWARDS NORTHERN PART IS PRIORITIZED ON THE MUCH WIDER COMMERCIAL AND INDUSTRIAL SCALE (INDUSTRIAL AREA DEVELOPMENT AND SEA PORT DEVELOPMENT).

WITH SUCH A WELL DIRECTED CITY DEVELOPMENT, IT IS APPARENTLY THAT CLEAN WATER DEMAND SHOULD BE WELL ANTICIPATED AS SOON AS POSSIBLE.

SLIDE 7 : _____

IN CONTEXT OF DEVELOPING THE OPERATION OF CLEAN WATER SERVICE, PDAM TIRTANADI IS NOW FACING SOME PROBLEMS, ESPECIALLY IN CONTEXT OF RAW WATER DEGRADATION, EITHER IN TERMS OF QUALITY AND QUANTITY. SUCH A DEGRADATION HAS TAKEN EFFECT SURROUNDING THE UPSTREAM AREAS. DESPITE OF RULES, LAW AND REGULATION AS HAS BEEN DEFINED BY THE GOVERNMENT, SEVERAL ACTIVITIES AROUND THE UPSTREAM AREAS HAVE

BEEN JEOPARDIZING AND DEGRADING THE ECOSYSTEM SURROUNDING THE WATER CATHMENT AREAS, AS CAN BE SEEN FROM THE FOLLOWING TYPES OF ACTIVITIES:

THE LOCAL PEOPLE'S ACTIVITIES OF LAND CULTIVATION, BY CUTTING THE FOREST AREAS FOR LIVING AND NEW SETTLEMENT, HAVE BEEN CAUSING THE GROUND SUPPORT SYSTEM IN CATCHING AND RETAINING WATER.

AT CERTAIN PERIOD OF TIME, THIS HAS BEEN DIRECTLY CAUSING MORE DIFFICULTIES TO OBTAIN RAW WATER – BESIDES THE EVER DEGRADING QUALITY AND QUANTITY OF THE RAW WATER ITSELF.

MEANWHILE, THERE HAS BEEN A VERY SERIOUS DEGRADED RAW WATER QUALITY SURROUNDING DOWN-STREAM AREAS, WHICH IS MAINLY DUE TO THE EVER INCREASING HUMAN ACTIVITIES OF THE HOUSEHOLDS AND INDUSTRIES THAT IS IN TURN PRODUCING HIGH AMOUNT OF DOMESTIC WASTE, ESPECIALLY ALONG RIVER BANK AREAS. SUCH A DEGRADATION IN QUALITY AND QUANTITY OF RAW WATER HAS BEEN THE MAIN FACTOR IN CONTEXT OF BOOSTING OPERATIONAL COST WITHIN THE EXISTING WATER TREATMENT UNITS.

IN VIEW OF THE ABOVE DESCRIPTION AND PROBLEMS, PDAM TIRTANADI HAS BECOME IN SUCH A TOUGHER SITUATION TO CATER THE SERVICE OF CLEAN WATER PROVIDING TO THE COMMUNITY, IN THE ONE HAND. MEANWHILE, THERE A HIGH INCREASE OF CLEAN WATER DEMAND AND PER-CAPITA CONSUMPTION RATE AS A LOGICAL CONSEQUENCE OF THE INCREASED QUALITY OF LIVES OF THE PEOPLE, ON THE OTHER HAND.

SLIDE 8 : _____

THE DECREASED QUALITY OF RAW WATER AS HAS BEEN EXPLAINED BEFOREHAND, CAN BE SEEN FROM THE DATA OF RAW WATER FROM RIVER AS PRESENTLY PROCESSED FOR DRINKING WATER OF MEDAN CITY. SEVERAL

PARAMETERS HAVE ALSO BEEN SHOWING THE DEGRADING QUALITY OF RIVER RAW WATER, WHICH IS SUPPOSED TO BE PROCESSED BY PDAM TIRTANADI. DESPITE REGULATION AND LAW ADOPTED BY THE GOVERNMENT OF REPUBLIC OF INDONESIA, STILL THE RIVER WATER QUALITY IS UNDER CATEGORY OF BEING HEAVILY POLUTED AND THIS HAS BEEN CAUSING THE SIGNIFICANTLY COST OF PRODUCTION IN THE PART OF TIRTANADI.

SLIDE 9 : _____

DESPITE THERE IS A DEGRADATION OF WATER IN TERMS OF QUALITY AND QUANTITY OF RAW WATER – ALONG THE WAY TO THE EVER INCREASING DIFFICULTY TO OBTAIN NEW WATER SOURCE, THERE IS ALSO AN INCREASE IN TERMS OF PEOPLE’S CONSUMPTION OVER CLEAN WATER FROM YEAR TO YEAR. SUCH AN INCREASING TREND CAN BE SEEN FROM THE FOLLOWING GRAPHS. AS COMPARED TO THE PEOPLE’S CONSUMPTION IN 1990, WHICH WAS ABOUT 1,470 LITERS/SECOND. HOWEVER, IN 2000, THERE WAS A SHARP INCREASE TO BE ABOUT 3,755 LITERS/SECOND – FOLLOWING A SIGNIFICANT INCREASE IN 2005 TO BE ABOUT 5,066 LITERS/SECOND. BESIDES THE HIGH INCREASE IN POPULATION, SOME OTHER FACTORS IN TERMS OF HIGH CONSUMPTION OVER CLEAN WATER IS DUE TO THE IMPROVED LIVING STANDARD VIS A VIS WITH THE EVER INCREASING DIFFICULTY OF OBTAINING DIRECT ACCESS OF CLEAN WATER FROM THE NATURE, FOR THE NATURE ITSELF IS GETTING DIFFICULT IN PROVIDING POTABLE WATER THAT CAN BE CONSUMED DIRECTLY.

IN CONTEXT OF ALL THE HIGHLIGHTED PROBLEMS, PDAM TIRTANADI HAS TO CARRY OUT HARD EFFORTS OF INCREASING THE FIXED PRODUCTION CAPACITY BY ALWAYS CONTINUING TO DISCOVER NEW WATER SOURCES – ALONG THE LINE TO INCREASE THE PRODUCTION CAPACITY BY OPTIMIZING THE EXISTING PRODUCTION PERFORMANCE WITHIN THE ITS OWN RUN WATER TREATMENT PLANTS, ON THE GROUND.

STEPS TO BE TAKEN BY PDAM TIRTANADI IN SEARCHING MORE CLEAN WATER SOURCE CANNOT BE DONE BY PDAM TIRTANADI ALONE AS THE OPERATOR OF CLEAN WATER PROVIDER. ALL EFFORTS TAKEN SHOULD BE CARRIED OUT IN A SOLID COOPERATION AND COORDINATION - TOGETHER WITH VARIOUS STAKEHOLDERS, SUCH AS GOVERNMENTS, NGOs, INDUSTRIAL SECTORS, UNIVERSITIES AS WELL AS COMMON PEOPLE AS CLEAN WATER USERS. SUCH AN INTEGRATED AND SOLID COOPERATION WILL DEFINITELY DEFINE THE CONSERVATION AND CONTINUITY OF WATER RESOURCE AS A VERY VITAL COMMON PROPERTY RESOURCE AND NEED.

SLIDE 10 : _____

IN ORDER TO DEAL WITH ALL PROBLEMS AS STATED ABOVE, PDAM TIRTANADI AS THE OPERATOR OF CLEAN WATER SERVICE PROVIDER, HAS BEEN ACTIVELY CARRYING OUT COMPREHENSIVE ATTEMPTS, SUCH AS TO SOCIALIZE AND APPROACH OTHER PROVINCIAL AND DISTRICT GOVERNMENTS AND LEGISLATURE WITHIN NORTH SUMATRA PROVINCE DIRECTLY - IN ORDER TO COME UP WITH LAW AND REGULATION VERY SOON AS TO GAIN RIGHTS OF CLEAN WATER SOURCE MANAGEMENT AND TO STRENGTHEN EXCLUSIVE RIGHTS IN CONTEXT OF CLEAN WATER SOURCE UNDERTAKING WITHIN THE PROVINCE OF NORTH SUMATRA. AT THIS JUNCTION, PDAM TIRTANADI IS PLANNING TO CARRY OUT VARIOUS EFFORTS TO CONSERVE THE ECOSYSTEM OF WATER CATCHMENT AREAS AS WELL AS RIVER BANK AREAS, WHICH IN FACTS IT HAS FUNCTION TO BE THE SOURCE OF RAW WATER IN ORDER TO GUARANTEE THE BALANCE NEED AND SUPPLIES FOR WATER TREATMENT FACILITY PRESENTLY UNDER THE OPERATION OF PDAM TIRTANADI.

MEANWHILE, PDAM TIRTANADI IS ALSO ENCOURAGING THE GOVERNMENT TO IMPLEMENT REGULATION ON LIMITING THE USE OF UNDER GROUND WATER AS

WELL AS SURFACE WATER BY INDUSTRIES AND THE PEOPLE EFFECTIVELY AND CONSISTENTLY.

PDAM TIRTANADI, IN CONTEXT OF THE MANAGEMENT AND SUPERVISION OF WATER CATCHMENT AREAS AS WELL AS UNDER GROUND WATER, IS ACTIVELY CARRYING OUT PROACTIVE AND COORDINATED APPROACH TO RELATED INSTITUTIONS PRESENTLY UNDER THE STRUCTURE OF WATER BOARD.

SLIDE 11 : _____

CARRYING OUT PROACTIVE ACTION AND APPROACH IN MANAGING RIVER BANK AREAS.

PDAM TIRTANADI IS ACTIVELY CARRYING OUT VARIOUS STUDY AND ATTEMPTS THAT LEADS TO CONSERVING THE AREAS SURROUNDING RESERVE FOREST OF SIBOLANGIT IN COLLABORATION WITH HOME COUNTY AND OVERSEAS INSTITUTIONS, SUCH AS CIM/GTZ OF THE GERMANY, USAID OF THE U.S., AS WELL AS ENVIRONMENTAL STUDY CENTERS OF VARIOUS UNIVERSITIES, INCLUDING GOVERNMENT OFFICERS WORKING ON THE GRASSROOT LEVELS AND NON-GOVERNMENT ORGANIZATIONS.

PDAM TIRTANDI IS ALSO CARRYING OUT IMPROVEMENT AND OPTIMALIZATION TOWARDS ALL SUPPORTING INFRASTRUCTURES SURROUNDING THE WATER CATCHMENT AREAS (IRRIGATION CHANNEL IMPROVEMENT, POOLS OF RAIN WATER CATHMENT, BRON CAPTURING, ETC.).

PDAM TIRTANDI IS ALSO FACILITATING EFFORTS OF COMMUNITY AWARENESS PROMOTION IN CONTEXT OF CONSERVING WATER CATCHMENT AREAS – THROUGH SEMINAR, SOCIALIZATION OF REGULATION AND SUPPORTING OTHER OFFICIAL FORUMS.

SLIDE 12 : _____

THIS IS ALL TO GIVE YOU QUICK DESCRIPTION ON VARIOUS MATTERS, PROBLEMS AND EFFORTS CONDUCTED BY PDAM TIRTANADI IN CONTEXT OF WATER SOURCE MANAGEMENT VIS A VIS WITH THE PRESENTLY EMPLOYED ZONAL APPROACH AS USED TO BE THE MAIN BASIS AND GUIDELINES TO CONSERVE WATER AS THE COMMON PROPERTY RESOURCE. THIS IS ALSO IN LINE TO KEEP THE BALANCE OF MAIN ECOSYSTEM AREAS, ESPECIALLY THE SOUTHERN PARTS OF MEDAN CITY AS ALREADY EARMARKED FOR WATER CATHMENT AREAS.

WE WOULD LIKE APPRECIATE YOU, FOR ALL YOUR KIND ATTENTION TO BE ATTENDING THIS GREAT FORUM. THANK YOU ONCE AGAIN AND I WISH GOOD ALL GOOD LUCK.