

MINISTRY OF AGRICULTURE,
NATURAL RESOURCES AND ENVIRONMENT

WATER DEVELOPMENT DEPARTMENT

ANNUAL REPORT 2013

V. WATER DEVELOPMENT DEPARTMENT

1. INTRODUCTION

1.1. The Water Development Department (WDD) is responsible for implementing the water policy of the Ministry of Agriculture, Natural Resources and Environment with the aim of providing effective protection, rational development and sustainable management of the water resources in Cyprus.

The enforcement of the Integrated Water Management Law (79(I)/2010) on 15 November 2010, opened up new horizons but also presented new challenges for the Department. According to the Law, the integrated management of water is assigned to the WDD, in the framework of the Government general Water Policy, as determined by the Council of Ministers.

The ratification of the above Law by the Parliament of Cyprus, constitutes a historical development, as it addresses the problem of fragmented responsibilities and powers regarding water management among various Departments, which resulted in waste of resources, isolated handling of problems and ultimately in the inability to exercise an integrated, rational and effective management of all water resources.

The vision of the WDD is the sustainable development, protection and management of the water resources with the aim to secure adequate quantities of good quality water for all uses, in the framework of a modern, flexible and effective organisation.

In this context, the competencies of the Department cover a wide and varied range, including the following:

- a) Collection, processing, classification and recording of hydrological, hydro-geological, geotechnical and other data, which are necessary for:
 - i) the protection and improvement of the qualitative and quantitative status of the surface and ground water bodies and
 - ii) the study, maintenance and safety of development projects.
- b) Feasibility studies, design, implementation, operation and maintenance of infrastructure projects, such as, dams, ponds, irrigation, water supply and sewerage networks, water treatment plants, wastewater treatment and re-use plants, as well as desalination plants.
- c) Cultivation of water saving awareness among consumers.

1.2 The main strategic objectives of the WDD for 2013 were the following:

- a) Provision of the largest possible quantities of water to satisfy the water needs for domestic, irrigation, industrial and other uses
- b) Addressing the challenge of water scarcity and drought and the impacts of climate change
- c) Harmonisation with the European acquis for the protection and improvement of water resources
- d) Effective use of technology and management of data and information
- e) Improvement of the Regulatory Framework

1.3 During 2013 the water situation in Cyprus, for total water storage in dams was satisfactory, but compared to the previous year the maximum water storage were reduced by 17 MCM.

The total water storage in Dams 1/1/2013 was 247 MCM, or 85% of the capacity and within March the total storage reached the maximum quantity 257.4 MCM, or 88.5% of the capacity, while the maximum quantity in 2012 was 274 MCM, or 94.2%.

The total inflow to the dams during the calendar year 2013 was only 42 MCM, compared with 239 MCM the previous year, the largest inflow of water ever had in a calendar year. The rainfall reached 544mm or 108% of the average rainfall.

The maximum water storage in the dams of Southern Conveyor Project (SCP) reached 151.8 MCM. For 2013 the total water allocated for irrigation to the farmers at SCP areas, were increased by 30% of the previous's year consumption ie . The total water consumption for irrigation to SCP areas was 40 MCM.

Table 9 in the Annex gives consumptions for domestic water supply and irrigation purposes from Government Water Works.

1.4 In the framework of cooperation between the Republic of Cyprus and other states in the field of water, the Water Development Department co-signed a Memorandum of Understanding with the Arab Water Council, during the Meeting of the General Assembly that took place in Cairo, on 26 – 28 February 2013.

In parallel, following the Memorandum of Understanding on cooperation in the fields of energy and water between Cyprus, Greece and Israel that was signed in Nicosia on 8 August 2013, the strengthening of the bilateral relations between Cyprus and Israel was promoted. Furthermore, the Republic of Cyprus was honoured for its contribution towards the conservation of water resources, during the Israel Water Resources Conference (WATEC 2013), which took place in Tel Aviv, in October 2013.

The activities of the Department per thematic unity during 2013 were as follows:

2. MONITORING OF WATER RESOURCES/DATA PROCESSING

2.1 The collection and processing of hydrological and hydrogeological data for groundwater and surface water resources continued, as well as the study of hydrological topics for the planning and implementation of water projects, the control of groundwater abstraction, the monitoring of water pollution and the provision of expert advice on water use.

2.2 With respect to the monitoring of surface water quantity, the activities in the field of stream-flow monitoring included measurements at 53 hydrometric stations out of which 51 are equipped with mechanical water level recorders and another two stations with a radar type sensor. As part of the expansion of the monitoring network a 54th hydrometric station at Paralimni Lake was recommissioned. During 2013, as part of the modernization of hydrometric stations, seven additional telemetry systems were put into operation in order to monitor the stations from the central offices of the WDD. Thus at the end of 2013, 14 hydrometric stations were monitored using a telemetry system. Regarding the quantitative monitoring of groundwater, during 2013, measurements of groundwater levels from more than 1100 observation boreholes were taken. The frequency of measurements ranges from twice a year to six times a year. For a number of boreholes, the ground water levels are monitored continuously using data loggers.

With respect to spring flow monitoring, during 2013, two more springs were added to the relevant monitoring network which now accounts 59 springs. The spring discharges are measured with a frequency of once per month. Sporadic measurements were taken at additional springs.

2.3 Regarding the qualitative monitoring of water resources, the implementation of the monitoring programme of water (rivers, lakes / reservoirs, groundwater) in accordance with Article 8 of the Water Framework Directive 2000/60/EC (WFD) continued this year as well as the implementation of national groundwater monitoring programmes. As part of these programmes, the following were systematically monitored: 46 points on rivers, 13 reservoirs, 88 boreholes as part of the WFD monitoring programme and 44 boreholes as part of the national groundwater monitoring programmes. For monitoring within the WFD, 250 water samples from rivers were collected, while 61 samples were collected from reservoirs and 167 samples from groundwater. In the context of biological classification of aquatic systems a contract for the analysis of samples of biological quality element "phytoplankton" in water reservoirs has been completed. During 2013, 43 samples of phytoplankton were collected from reservoirs at different depths using a boat.

2.4 During 2013, the implementation of the National Monitoring Programme of the small reservoirs, continued, in collaboration with the District Offices of the Department. This network now includes 22 water reservoirs. All of these reservoirs were sampled for physicochemical parameters with a frequency of three times a year. In the ten largest water reservoirs of the

island, regular (twice per week) measurements of surface water temperature are carried out, in collaboration with the District Offices of the Department, with the aim of the timely detection of stratification development in these water reservoirs.

2.5 Hydrogeological studies for 5 different areas were carried out as part of the WDD obligations towards the Department of Environment requirements regarding the monitoring of groundwater in areas which are or will be irrigated with treated effluent. Based on the result of the studies 2 monitoring programmes were designed for the area west of Limassol and the Potamia-Agios Sozomenos. A study/search was carried out for identifying existing privately owned boreholes representative of the areas as the most economical solution for the establishment of the 2 monitoring networks. The monitoring programmes have already commenced.

2.6 Within the framework of implementing both the national programmes and the programmes under Directive 2000/60EC for qualitative and quantitative monitoring of groundwater, the evaluation and revision of the monitoring network continued, the analysis of the monitoring programmes results continued and the following studies were completed: 1) review of the chemical status of the groundwater bodies until the spring of 2012, 2) review of the quantitative status of the groundwater bodies until December of 2012, and 3) review of the chemical status of the groundwater bodies until December of 2012. The report "Review of the chemical status of the groundwater bodies-Spring 2012" was prepared.

2.7 Regarding hazardous substances (e.g. pesticides, insecticides, heavy metals, etc.), the concentrations from 29 river sites and from 11 water reservoirs was examined and evaluated.

2.8 All quantitative and qualitative monitoring results of rivers, reservoirs, groundwater and springs are imported into the Department's Hydrogeological database (CYMOS) and submitted to the Eionet-WISE network of the European Environment Agency.

2.9 The monitoring of the quality of potable water from boreholes and springs used by communities, continued. During 2013, the number of these boreholes and springs were estimated to 500. From this year's chemical analyses of potable water quality for the communities, more than 71 exceedances of parameter values, specified in the Directive 1983/98/EC, were identified. In cases where the exceedances occurred on the single water supply source of a community, the relevant authorities were informed by telephone within 24 hours from the notification of the results. In other cases (more than one source of water supply) the relevant authorities are notified about the exceedances in writing.

2.10 During 2013, 2370 applications were evaluated nationally for a borehole drilling permit, of which 681 were for legalising non-licensed boreholes. All applications are recorded in a database that was developed specifically for this purpose in WDD. Since the Integrated Water Management Law entered

into force on 15 November 2010, 3029 new applications have been received and 4641 applications for legalising non-licensed boreholes. From the 122000 borehole permits received by the District Administration nationwide, those which show activity (request for change the limit of pumping, permit to transfer water to other plots, new application for drilling in the block, etc.) are also recorded in the database. At the end of 2013, the database contains more than 11700 boreholes with more than 21100 applications of different types. In 2013 more than 300 checks (readings and correct operation) on water meters were carried out.

2.11 During 2013, 77 warning letters were issued regarding compliance with the terms of borehole drilling permits and water abstraction permits. Also through the Attorney General, 7 cases, of which 1 were cases involving drilling rig operators were taken to court. Also 5 letters of intension to reduce the issued extraction limit were issued.

2.12 During 2013, 43 applications for granting of a drilling rig operator licence were examined nationwide.

2.13 The delineation of protection zones for 13 potable water supply reservoirs (2 of which are considered for future use) continued in accordance with the Water Protection and Management Law 2004-2010. The Distant and the Close Protection Zones of the 13 reservoirs were delimited in accordance to the prescribed criteria.

2.14 Thematic maps concerning the activities of the Department, those of other Departments, Organisations and Consultant Engineers, were prepared, e.g. maps for the positioning of water projects, networks and monitoring stations for ground and surface water bodies etc.

2.15 Isopiezometric digital maps (groundwater levels) were prepared for the coastal aquifers of Paramali Kokkinokhoria, and Akrotiri for different periods. These maps can be viewed on the Department's website.

2.16 The representation of the Department in the Environmental Impact Assessment Committee and the Quarry Licensing Committee continued.

2.17 Within the framework of consultations with the Department of Environment, which is responsible for waste discharge permits for the implementation of the Soil and Water Pollution Control Law, applications concerning waste management were examined.

2.18 Sample taking for chemical and microbiological water tests took place at Polemidhia Dam, Athalassa Dam and Ovgos River, before and after the period recycled water was discharged in them. These results can be viewed on the Department's website.

2.19 Sample taking for chemical and microbiological analyses: **a)** from the Limassol and Larnaka coastal waters before and after the discharge of recycled treated wastewater in the sea, **b)** of recycled treated wastewater

going to farmers for irrigation and c) water drilling in areas irrigated with recycled treated wastewater. These results can be viewed on the Department's website.

2.20 Quality checks on new monitoring programmes data before their input into the WDD hydrological and hydrogeological database, CYMOS, their input into the database as well as quality checks on CYMOS data continued.

The Protection of River Riparian Areas

2.21 Within the scope of the implementation of the unified water management law 2010-2011, which prohibits any form of intervention in rivers and riparian areas without the approval of the Director of the WDD the following work was carried out:

- review/evaluation of 62 studies, projects and cases of development projects (parks, golf courses, landscaping projects, parcelation of land, changes in town planning zoning, Nature 2000 areas, etc.) in areas adjacent to or traversed by rivers and riparian areas with respect to the impact of the development projects on river water bodies and the safe discharge of flood flows.
- The work done with regards to reviewing applications for projects/works that impact river water bodies and riparian areas included: i) Reviewing / updating of the relevant WDD policy regulations, ii) Updating/instituting of the criteria and the assessment methodology which will transparently ensure just and impartial treatment of the applications, iii) preparation of a protocol of checks and prescribed WDD responses to the application. to be followed prescribed checks controls for fixed and definite way of treating applications.
- Review/assessment of, and the preparation of assessment reports, for 19 hydrological/hydraulic and flood studies sent by the District Offices, local authorities, other governmental departments etc. to the WDD to be reviewed/assessed.

Drought Management Plan

2.22 Within the scope of the implementation of the Drought Management Plan the following work was carried out:

- assessment and revision of the drought indices
- revision of the methodology for the computation of the drought indices
- preparation of the report "Hydrological Drought Indices – Revised Drought Management Plan"
- processing and analysis of relevant information and data as well as the computation and interpretation of monthly and yearly drought indices essential for the timely activation of the necessary management measures in case of drought conditions.

3. IMPLEMENTING THE EUROPEAN ACQUIS

3.1 Throughout 2013, important work has been carried out on the harmonization and monitoring of various obligations and requirements of the European Union

Directive 2000/60/EC

3.2 In the context of implementing the Water Framework Directive 2000/60/EC (WFD) in Cyprus, WDD completed the 1st River Basin Management Plan for the period 2009-2015, in collaboration with the relevant governmental departments.

The management plan includes the Program of Measures (97 Basic and 56 Supplementary), the Drought Management Plan and the Revision of Water Policy Report.

3.3 Within the scope of the implementation of the Programme of Measures of the River Basin Management Plan (WFD) the following work was carried out: coordination, implementation/supervision and assessment of the effectiveness of the measures aiming for their revision/update

3.4 Within the scope of the implementation of Article 5 of the WFD for the new WFD 6-year cycle:

- assessment, redefinition and recharacterization of groundwater bodies.
- preparation of the report "Review, Reassessment and Recharacterization of the Groundwater Bodies in Cyprus - Article 5 of the Water Framework Directive 2000/60/EC» which was sent to other Departments for comments.

3.5 In the context of preparation of the 2nd River Basin Management Plan for the period 2015-2021, was initiated on 23rd of November 2012 for a period of six months, up to 23 May 2013, the Public consultation campaign regarding timetable and programs of works, including consultation measures. On the 19th of April 2013, a Pancyprian public Information Session was held on "Water Framework Directive & Public Consultation" and the Report for the 2nd River Basin Management Plan was posted on the Department's website.

The revision of Article 5 of the Framework Directive also started.

3.6 In the context of implementing the Programme of Measures of the Water Framework Directive 2000/60/EC WDD implements the Project for Constructing the Treatment Plant for Domestic Septage, Industrial Wastewater, surplus sludge and leachate at Vati area. This project is implemented under the Cooperation Programme between Switzerland and the Republic of Cyprus.

Directive 91/271/EEC

3.7 During 2013 the implementation of the National Implementation Programme for the Directive 91/271/EEC was continued for Urban Wastewater Treatment in settlements with equivalent population over 2,000.

3.8 Continuation of the implementation programme for sewerage projects in suburban agglomerations with population equivalent greater than 2000 by the Urban Sewerage Boards on behalf of Water Development Department. Follow up of the Contracts.

3.9 Also the provision of technical advice to Sewerage Boards in relation to sewerage and wastewater treatment problems in rural communities with a population equivalent of less than 2000 continued.

Directive 2007/60/EC

3.10 Work on the implementation of the European Directive on Floods, 2007/60/EC, and the corresponding Cyprus Law, 70(I)/2010 continued. The work on the preparation of Flood Hazard Maps and Flood Risk Maps for the 19 areas identified as areas for which there exists potential significant flood risks is on-going. The terms of reference regarding the preparation of the Flood Risk Management Plan for the 19 areas (Article 7) have been reviewed and amended.

Community Initiatives

3.11 The implementation and management (including time and financial planning, preparation of budgets and absorption forecasts, progress monitoring and preparation of reports, observing procedures and regulations for the co-financed projects) of four (4) co-financed sewerage projects, namely the Astromeritis – Peristerona - Akaki Complex, Athienou Municipality, Solea Complex and Kokkinochoria Complex continued. Participation in radio and television broadcasts and reference to co - financing of projects and the progress of their implementation.

3.12 Within the framework of co-financing water related projects using European Union funds, the procedures for the co-financing of the Project: "Studies for the implementation of Articles 9, 11, 13, 14 and 15 of the European Water Framework Directive 2000/60/EC", continued under the Priority Axis "Basic Infrastructure in Environment and Energy" of the Operational Programme "Sustainable Development and Competitiveness 2007-2013".

3.13 Furthermore, the Water Development Department submitted to the Directorate General for European Programmes, Coordination and Development, its proposed projects for co-funding under the European Structural and Investment Funds during the new programming period 2014 – 2020.

Co-financed Project by the Swiss Confederation

3.14 Under the Cooperation Programme between the Swiss Confederation and the Republic of Cyprus the co-financed project for the construction of a treatment plant for domestic septage, industrial wastewater, surplus sludge and leachate in Vati continued. In this context in 2013 the contract for the preparation of a techno economical and environmental study for the project has been completed. Also the tender documents were prepared and tender was announced for the "Design, build and operation for 10 years of the wastewater treatment plant. This project is funded with 85% of the Swiss Confederation.

4. ANNOUNCEMENT OF COMPETITIONS

4.1 The Department is responsible for the preparation of tender documents, the publication of the contract notice, the provision of the tender documents, the provision of clarifications and additional information on the tender documents, the announcement of the results after the submission of the tender, the award of the contract and the invitation to sign the agreement, the preparation of the contract documents and the publication of the award of the contract.

4.2 One (1) Mini Competition was announced for the supply of ductile iron pipes for the water supply of the eastern region of Limassol from the Limassol Water Treatment Plant, via the Framework Agreement that was signed by the Treasury of the Republic.

4.3 Tender documents were prepared and tender procedures were announced for the supply of the following materials:

- 300 metric tons of Liquid Sodium Hypochloride (NaOCl) for the Choirokitia Water Treatment Plant and the Water Supply Systems of Nicosia, Larnaca and Famagusta Districts,
- 150 metric tons of Polyaluminium Chloride Hydroxyde Sulphate in liquid form for Limassol and Asprokemmos Water Treatment Plants,
- 1000 metric tons of Solid Aluminium Sulphate for Tersefanou, Asprokemmos, Choirokitia and Kornos Water Treatment Plants and
- 500 metric tons of Polyaluminium Chloride Hydroxyde Sulphate in liquid form for Tersefanou, Limassol, Kornos, Asprokemmos, Kannaviou, Tamasos and Klirou Water Treatment Plants.

4.4 Tender documents were prepared and tender procedures were announced for the Provision of the following Services:

- Operation and Maintenance for 5 years of «Pantelis Kantellaris» army camp Sewage Treatment Plant and Irrigation System using recycled water and of the Pumping Station in «Makis Georgallas» army camp at Mathiatis,

- Sampling and Execution of chemical and microbiological analyses for the implementation of the Water Pollution Control Law of 2002 - 2009 and
- Conducting Closed-Circuit Television Inspection (CCTV) in the sewerage networks of the co-financed Projects.

4.5 Tender documents were prepared and tender procedures were announced for the Provision of Civil Engineering Services, as follows:

- One (1) Civil Engineer for the implementation (Planning, Supervision and Inspection) of the Project “Sewerage System of the Complex of Astromeritis – Peristerona – Akaki”,
- One (1) Civil Engineer for the implementation (Planning, Supervision and Inspection) of the Project “Sewerage System of Athienou Municipality”,
- One (1) Civil Engineer for the implementation (Planning, Supervision and Inspection) of the Project “Sewerage System of Kokkinochoria Complex” and
- One (1) Civil Engineer for the Supervision of the construction of the sewage collection systems of the Project “Sewerage System of Solea Complex”.

4.6 Tender documents were prepared and tender procedures were announced for the construction of the following projects (Works):

- Design, Build and Operate for 10 years of the Ayioi Vavatsinias Sewage Treatment Plant,
- Construction of Sewerage Collection Network at Sotira Municipality,
- Construction of Sewerage Collection Network at Liopetri,
- Design, Build and Operate for 20 years of the Athienou Sewage Treatment Plant and Associated Works,
- Design, Build and Operate for 20 years of the Achna Sewage Treatment Plant and Associated Works,
- Repair works, maintenance and upgrading of the Kouris Pumping Station,
- Construction of Sewerage Collection Network at Xyloimbou and Ormidia– Additional Works and
- Design, Build and Operate for 10 Years of the Treatment Plant for Domestic Septage, Industrial Wastewater, Surplus Sludge and Leachate at Vati Area.

4.7 The Tenders and Contracts Division supervises the tender procedures followed by the District Offices and the Divisions of the Department, which use the Simplified and Negotiation procedures for the acquisition of materials, such as electromechanical equipment, electromagnetic water meters, pumps, electrical panels, stainless steel pipes and fittings, gate valves, butterfly

valves, etc and for the lease of machinery for the execution of the various projects of the Department.

4.8 There was preparation of Tender Documents and Call for Tenders for: the manufacture of pump jackets, the refurbishment of filter cleaning control system, the pumping of limestone for the Larnaca Desalination tanks, the energy saving system of the Mazera pumping station and for the wiring of motors for the Frenaros pumping station.

4.9 Tender Documents and Call for Tenders were prepared for the supply of Electromechanical Equipment for the Execution of Departmental Projects, such as:

Submersible pumps, submersible motors, air compressors, electrical panels, electromagnetic water flow meters, electrical motors, rotary pumps, programmable testers and cards.

4.10 There was preparation of Tender Documents and call for Tenders for the supply of materials for the execution of Projects of the Department such as: water tanks, stainless steel pipes and pipe fittings and hydraulic valves.

4.11 Tender documents by negotiation were prepared on the "Extension Study of an Appropriate Assessment of Environmental Impact" from the construction of Souskiou Dam in Dhiarizos River, including a research report provided under the provisions of Article 4.7 of the WFD (2000/60/EC).

4.12 The Tenders and Contracts Division has trained Officers of the District Offices and the Divisions of the Department on issues relating to the preparation of tender documents and announcing of Competitions using the Simplified and Negotiation procedures, through presentations and the publication of relevant forms, as well as on issues related to ordering materials through the electronic system of the Treasury of the Republic.

5. STUDIES AND EXECUTION OF WATER PROJECTS

Projects completed in 2013

5.1 Completion of the Contract for the Final Design of the Recycled Water Storage Reservoir at Anthoupolis. The project is part of Nicosia Recycled Water Reuse Scheme.

5.2 Completion of the Contract TAY 01/2009 for the Final Design of the Milouri Dam at Palechori, after the negative pronouncement of the Appropriate Assessment by the Environmental Department.

5.3 Completion of the Contract TAY 52/2009 for the final Design of the Archangelos and Kammitsis Dams in Aradippou.

5.4 Completion of the final design of the Pumping Station at Vathia Gonia including the preparation of Construction Drawings and Bill of Quantities. The project is part of Nicosia Recycled Water Reuse Scheme.

- 5.5** Completion of the final hydraulic design of the irrigation network at Geri. The project is part of Nicosia Recycled water Reuse Scheme.
- 5.6** Completion of the final design of the Tembria Reservoir including the preparation of Construction Drawings and Bill of Quantities. The project is part of Solea Valley Irrigation Scheme.
- 5.7** Completion of the final hydraulic design of the irrigation network at Tembria. The project is part of Solea Valley Irrigation Scheme.
- 5.8** Completion of the revision of the design and preparation of Specifications for Tender purposes for the refurbishment of Kourris Pumping Station.
- 5.9** Completion of the Final Design, preparation of Construction Drawings and the Bill of Quantities for the Sand Trap at the outlet of Achnas Dam.
- 5.10** Completion of the feasibility study for the use of Glass Lined Tanks (GLS) and comparison with conventional reinforced concrete tanks.
- 5.11** Completion of the design, preparation of Construction Drawings and Bill of Quantities and the supervision of construction for the Refurbishment of Frenaros existing Water Tower.
- 5.12** Completion of the design, preparation of Construction Drawings and Bill of Quantities for the Refurbishment of the existing Water Tower at the premises of WDD Ammochostou District Office.
- 5.13** Completion of the preliminary hydraulic design of the irrigation network at Achna - Avgorou. The project is part of the Kokkinochoria Sewerage Scheme.
- 5.14** There was completion of the works for the project of construction of the Garillis pumping station for the pumping of recycled water to the Polemidhia Dam.
- 5.15** There was draining of the limestone tanks of the Larnaca Desalination Plant.
- 5.16** There was completion of the installation of the Fast-Water-Treatment Plants of the Klirou - Malounda - Akaki Dam and there was construction of five supportive pumping stations.
- 5.17** There was completion of the installation of the Fast-Water-Treatment Plants of the Tamasos Dam and there was construction and operation of three supportive pumping stations.
- 5.18** There was a study of water aeration and commencement of installation of the system at the Kouris Dam and there was a study and execution of works for the aeration of water at the Kannaviou Dam.

5.19 There was completion of the Omonia pumping station. There was acquisition and manufacture of parts for the second phase of refurbishment of the controls and the pumps of the Mazera pumping station.

5.20 There was completion of the electromechanical facilities of the third phase of the Souni-Zanatzia project and the electromechanical facilities of the Ayia Varvara pumping station.

5.21 There was completions and successful functional test of the electromechanical equipment of the Polemidhia third grade water treatment pumping station.

5.22 There was completion of Contract Management and supervision of the electromechanical construction works of the Solea Dam.

5.23 There was installation and operation of a system for energy saving (voltage reduction type) at Mazera pumping station

5.24 There was completion of works for the complete automatic operation of the Frenaros pumping station.

5.25 There was upgrading of automatic control system (SCADA) of the Asprokremmos Water Treatment Plant.

5.26 There was study and installation of power factor correction systems for energy saving at two pumping stations.

5.27 There was completion of the installation of ultrasonic systems with supply of energy from photovoltaic panels at the recycled water tanks at Ayios Alamanou with the aim of fighting algae.

5.28 There was execution of works for the installation of electromechanical equipment to over 20 Government and Community projects of water supply and irrigation. Also there was execution of works for the installation of liquid chlorination systems at five water supply projects of Community Councils and Water Supply Councils, four of which were powered by photovoltaic energy.

5.29 There was installation of a new generation quadruple system of liquid chlorination at the Central Water Tank of the Nicosia Water Supply Council.

5.30 There was installation of two quadruple systems of liquid chlorination at the Tamasos and Klirou Fast-Water-Treatment Plants and of one double system at the Vathia Sewerage Treatment Plant.

5.31 There was completion of maintenance and repair work to over 330 chlorination systems of Communities, Municipalities, water supply councils and National Guard Units.

5.32 There was acquisition of a new electrical panel for the Klirou Military Camp Sewerage Treatment Plant.

5.33 Completed project utilization of borehole 80/01 for the Potable Water Supply of Lower Krassochoria villages (Total cost €231.911).

5.34 Completed project utilization of borehole 24/02 and construction of a new water tank for the needs of Sanida village potable water supply (Total cost €141.170).

5.35 Completed the replacement of water supply network Agios Mamas village (Total cost €286.490).

5.36 Completed project utilization of borehole 53/09 for the needs Akrounda village potable water supply (Total cost €342.901).

5.37 Completed the demolition of the old tank (275 m³) and construction of new tank (135 m³) for the needs of potable water supply of Moniatis village.

5.38 Completed construction of a new water tank capacity 500 m³ and the relevant water supply network for distribution to the residential area of Erimi village (Total cost €181.607).

5.39 Completed the installation of a new pipeline for connecting the Souni Zanatzia lower reservoir with the potable water network.

5.40 Completed connection of Limassol Desalination Plant with the Western Villages pipeline (Total cost €303.791).

5.41 Completed the construction of water tank capacity 135 m³ for the Troodos potable water supply (Total cost €58.936).

5.42 Completed connection of Pentakomo Village water supply with the Choirokoitia Water Treatment Plant System (Total cost €60.690).

5.43 Completed installation of pipelines to connect Panthea water tank to the Limassol Water Treatment Plant (Total cost €204.000).

5.44 Completed the project connecting Souni Zanatzia Water Supply Network with the Limassol Water Treatment Plant Conveyer (Total cost €1.632.581).

5.45 Completed the study and commenced the construction of a water reservoir with capacity of 1000 cubic meters of water and pumping station in the Community Theletra in Paphos for the needs of Anadiou Government Water Project.

5.46 Prepared study amendment by the Government Water Project Low Villages in Paphos which provides 1,5 MCM, of water per year to the Communities, Konia, Mesogi, Empa, Mesa Chorio, Armou, Marathounta, Episkopi, etc. in order to save electricity.

5.47 Completed and presented to the Environmental Authority a Preliminary Environmental Impact Report, in accordance with Article 14 of Law N.140 (I) / 2005, for the construction of recycled water storage tank from Anthoupolis Wastewater Treatment Plant of Nicosia Sewerage Board. A positive assessment for the Project was issued in December 2013.

5.48 Completed and presented an Appropriate Assessment of Environmental Impact for the construction of Dhali dam in Yialias River. A negative assessment for the Project was issued in August 2013.

5.49 A techno economical and environmental study for the construction of a treatment plant for domestic and industrial wastes in Vati area was also completed.

5.50 During 2013 the construction of the sewerage collection network at the complex of Communities of Avgorou-Achna, Kakopetria-Galata and the Municipality of Derynia are completed.

5.51 The renovation / upgrading of Wastewater Treatment Plants in the Communities of Pano Platres, Kyperounda, Agros, Alassa and Palaichori is completed.

5.52 The construction of water reservoir with capacity of 1000 m³ of water in to the Community Kathikas in Paphos for the needs of Anadiou Government Water Project has been completed.

5.53 The contract and Trial Operation of the Water Treatment Plant in Kannaviou dam, which will have a production capacity of 10.000 m³ per day, was completed and the operation will take over under the Water Development Department

5.54 The defect liability period (final acceptance) of sewerage collection networks in Communities Astromeritits, Peristerona and Akaki end the Municipality of Athienou was completed.

Projects in progress

5.55 Coordination of the Final Study for the Irrigation Project at Solea during the Construction and Guarantee period of the Project.

5.56 Coordination of the final study for the Vathia Gonia Storage Reservoir during the Construction Period of the project. The project is part of Nicosia Recycled Water Reuse Scheme.

5.57 Design of hydraulic studies for the irrigation networks at Communities Evrychou, Flasou, Linou and Katydata. The project is part of Solea Valley Irrigation Scheme.

5.58 Revision of the hydraulic study for the irrigation networks at Lymbia Consolidation area. The study depends on the final input from the Consolidation Department.

5.59 Revision of the hydraulic study for the irrigation networks at Aradippou Consolidation Area. The project depends on the final decision for the construction of the sewage treatment plant at Municipality of Aradippou.

5.60 Revision of the hydraulic study for the EAC Desalination Plant product water conveyance to Larnaca, Nicosia and Limassol.

5.61 Feasibility Study is being prepared for the disposal of recycled water from Anthoupolis Wastewater Treatment Plant of Nicosia Sewerage Board

5.62 In accordance with Law N.140(I)2005, an Environmental Impact Assessment Study was undertaken for the construction of two storage tanks at “Vathia Gonia” area, for the storage of recycled water from Wastewater Treatment Plant of Mia Milia.

5.63 A preliminary Environmental Impact Report in accordance with Article 14 of Law N.140(I) 2005, is being prepared for the disposal of recycled water from Anthoupolis Wastewater Treatment Plant of Nicosia Sewerage Board.

5.64 A consultation procedure with the Municipalities of the Wider Nicosia Area and various Governmental Departments is in progress, for future users of recycled water that will be produced by the Wastewater Treatment Plants of Anthoupolis and Vathia Gonia respectively.

5.65 Consultation procedures have begun and are in progress with the Municipality of Meneou-Dromolaxia and with the Communities of Tersefanou and Klavdia and various Governmental Departments, regarding future users of recycled water from Larnaca Wastewater Treatment Plant, of which the expansion and upgrade is in progress.

5.66 Feasibility Study is being prepared for the Project of domestic water supply of the Western Nicosia Communities with desalinated water from the Vasilikos Desalination Plant. This pipeline will be used as an alternative water supply of Nicosia in the occurrence of a serious problem either in Larnaca / Dhekelia Desalination Plant or on Tersefanou pipeline.

5.67 Continued and completed the first phase of the project of linking the Desalination Plant of Vasilikos with the Southern Conveyor Project. Also started the second phase of this project, which provides connection to the reservoir of Choirokoitia, that transporting the potable water to Southern Conveyor Project.

5.68 Under preparation is an extension of the Appropriate Assessment of the Environmental Impact from the construction of Souskiou Dam in Dhiarizos River, including a research report under the provision of Article 4.7 of the WFD (2000/60/EC).

5.69 There was continuation of installations of electromechanical equipment at Government and Community works for water supply and irrigation.

5.70 There are on-going contracts for renovation of four Sewage Treatment Plants as well as contracts of Operation and Maintenance of 16 Sewage Treatment Plants and Sewage Pumping Stations in Army Camps and Communities. Furthermore, the construction of Sewage Treatment Plant at Mennoyia and Community of Agioi Vavatsinias was completed.

5.71 The Works of Anadiou Government Water Project are in progress. The main pipelines for transferring and pumping of water have been completed except pipeline Akoursos and the construction of the water reservoir and pumping station in the region Theletra in Paphos that will cover the Communities of Laona, is on-going.

5.72 There is continuation of the works of the refurbishment project of the Ha-Potami diversion.

5.73 During 2013, the construction of the sewerage collection network at the Communities of Phrenaros and Acheritou continued.

5.74 There was commencement and continuation of the project for extension of telemetry system so that it includes:

- (a) Western Villages of Limassol District.(22 points). At every points there exists the possibility of automatic flow control) and
- (b) The Vasilikos Desalination Plant.

5.75 The management and supervision of the Contract for the construction works of the Solea Dam continued, located in the twelve months defects liability period.

5.76 There is work-in-progress for the refurbishment, operation and maintenance of the Vathia Gonia Domestic and Industrial Sewerage Treatment Plant.

5.77 There is work-in-progress for the study for upgrading of the telecommunication system of the Kokkinochoria Irrigation Project with the telemetry system.

5.78. There is work-in-progress for the project of construction two pumping stations at the Ypsonas reservoir for the purpose of transporting water to the Southern Conveyer and to Communities of the area.

5.79 There was completion of the studies and acquisition of equipment for the second phase of improvement of the automatic electric panels and the pumping stations of the Kokkinochoria Irrigation Project.

5.80 Participation to the research programme “Thermal Solar production of water and Electricity” of the inter-boundary cooperation Greece-Cyprus 2007-2013 scheme is on-going. The programme’s aim is the construction of a small scale experimental cogeneration unit which will make use of solar energy for the simultaneous production of water and electricity and will confirm the idea of cogeneration.

5.81 There was commencement and there is work-in-progress for the application of the plan of condition monitoring for the pumping stations of the Tersephanou and Kornos Water Treatment plants and the Dipotamos pumping station.

5.82 There is work-in-progress for the project of the Vathia Gonia treated water pumping station.

5.83 There is continuation of the works for the refurbishment of the Stavrovouni pumping station and the renovation of the Dipotamos pumping station.

5.84 Replacement of existing domestic water supply network within Alassa village continued during 2013 (Total cost €166.044).

5.85 The replacement of the conveyor pipeline from Troodos springs to Pelendri village water tanks continued (Total cost €218.311).

5.86 The replacement of a pipe from Kilani water tank to Lofou water tank for Arkolachania water network continued (Total cost €232.594).

5.87 Replacement of the potable water supply network of Vouni village continued (Year expenditure €78.623).

5.88 Irrigation network and tank for Yermasogia roundabout continued during 2013 (recycled water supply) (Budget amount € 57.264).

5.89 New pipelines from Limassol Water Treatment Plant for the Eastern Limassol areas continued during 2013 (year expenditure € 804.105).

5.90 The upgrading, modernisation and replacement of Community water supply systems in all Districts continued during 2013 for the supply of good quality domestic water and the reduction of losses, as well as the construction new reservoirs, where necessary.

5.91 The construction works has begun for the utilization of boreholes to supply water or even strengthen different areas continued.

5.92 The contract for Design and Construction of Astromeritits Sewage Treatment Plant continued.

5.93 The Management of the contract of the Astromeritits Sewage Treatment Plant continued in what concerns the design of electromechanical installations.

Projects initiated in 2013

5.94 Construction work has begun on the wastewater collection network in Community of Liopetri and the Municipality of Sotira under the supervision of the Department of Public Works.

5.95 Preparation of the Tender Documents for the Construction of the Anthoupolis Recycled Water Storage Reservoir. The project is part of Nicosia Recycled Water Reuse Scheme.

5.96 Hydraulic Study, preparation of Construction Drawings and Bill of Quantities for the conveyance pipework from Anthoupolis reservoir to Nicosia irrigation areas. The project is part of Nicosia Recycled Water Reuse Scheme.

5.97 Preparation of Tender Documents for the Design of Tersefanou Dam and the conveyance pipework of recycled water from the Larnaca Sewage Treatment Plant. The project is part of Larnaca Recycled Water Reuse Scheme.

5.98 Study and preparation of Construction Drawings and Bill of Quantities for the construction of an equalization water storage tank receiving water from Vasilikos Desalination Plant to supply the East Limassol Communities.

5.99 Hydraulic Study for the revision of the Kokkinochoria Irrigation Scheme in order to include the Pyrgos Xylofagou Area.

5.100 Commencement of the works concerning the repair, maintenance and upgrading of the building of Pumping station downstream Kourris Dam.

5.101 Execution of works for the construction of the recycled water storage reservoir at Vathia Gonia.

5.102 An Environmental Impact Assessment study for the construction and operation of a Photovoltaic Park of capacity 120 KW at the Achna long term storage pond area has been prepared. The EIA report was approved by the Environmental Authority on September 2013 (Ref: 70/2013).

5.103 An Environmental Impact Assessment study for the construction and operation of a Photovoltaic Park of capacity 500 KW at the Achna Sewage Treatment Plant area has been prepared. The EIA report was approved by the Environmental Authority on September 2013 (Ref: 71/2013).

5.104 Commencement of the contracts for three Civil Engineers which are responsible for the management of three (3) co-financed sewerage projects,

namely the Astromeritis-Peristerona-Akaki Complex, Athienou Municipality and Kokkinochoria Complex

6. WATER MANAGEMENT OPERATION AND MAINTENANCE

6.1 The Water Development Department is responsible for the management, operation and maintenance of installations for the production and transfer of water belonging to the Government. It also coordinates all actions which are related to the management and operation of the Government Irrigation Projects and applies the Government's water policy, in cooperation with the other Divisions and Organizations.. The Government Water Works consist of the Government Irrigation networks, which provide irrigation water to areas that are imbedded in them, and by the Government Water Supply Systems which provide drinking water to more local water supply authorities. The Government Water Supply Systems include the Water Treatment Plants, the Desalination Plants, the government boreholes, as well as the pumping systems, the central reservoirs and the main diversion pipelines carrying water from the production points to the reservoirs of the Water Boards, the Municipalities and Communities.

6.2 Total domestic water output in 2013 reached 77,6 MCM compared to 79 MCM in 2012. The production of water treatment plants in 2013 was 50.2 MCM, compared to 45.6 MCM in 2012. The increase in water treatment was due to the decision to operate the Desalination Plants at the lowest possible production capacity while most of the plants were set in standby mode. The Water Treatment Plant of Choirokoitia, which was held in reserve until June 2012, continued to operate. During 2013, the construction of Fast-Water-Treatment plants Tamasos and Klirou was completed. In October 2013 the Fast-Water-Treatment Plant in Tamasos was switched on and supplies drinking water to Communities Episkopeio, Psimolofou, Pera and Kambia.

6.3 During 2013 the management of the BOOT contracts of the Desalination Plants continued for the two permanent Plants of Dhekelia and Larnaca, as well as for the Mobile Plants of Garyllis and Paphos. The water production from the above Desalination Plants, was 10.7 MCM in 2013, compared to 18 MCM in 2012. In 2013 the Larnaca and Dhekelia Desalination plants were instructed to reduce production, while all other plants were set in stand-by mode. These instructions were according to contractual provisions which allow WDD to manage the water production taking into account the water reserves. The following are also noted: (a) The Larnaca Desalination Plant, following an open competition in 2012, is under renovation for two years, and operation and maintenance for another 25 years and (b) in 2013 construction was completed of Desalination Plant of Vasilikos (EAC) and was set in Stand-by mode. In standby is also the Desalination Plant of Limassol.

6.4 During 2013, the total irrigation water supplies in areas irrigated by the Government Water Works reached 64.8 MCM, of which 52.5 MCM came from water dams, 3.2 MCM from boreholes and 9.1 MCM from recycled water of tertiary treatment.

6.5 The recording of the water quantities supplied and the invoicing of these quantities using the current rates continued in 2013. All invoicing was done using the computerised water invoicing system. The payments of the accounts for the invoiced water were monitored according to the relevant laws. During 2013 the operation of the computerised Water Invoicing System continued, as were the recording and invoicing of the water quantities used for domestic and irrigation purposes from the Government Water Projects. Payments continued to be received through the web based JCC Smart service.

6.6 During 2013, the collection of arrears for both domestic supply and irrigation purposes water from the Government works continued. The arrears for domestic water supply at the end of 2013 were €99m plus interest. Judicial procedures against debtors continued in collaboration with the Justice department of the Republic. Legal action has been taken to recover the cost due to the disposal of industrial waste in the Wastewater Treatment Plant of Vathia Gonia.

6.7 During the year, WDD continued various actions to address the problems encountered at the individual Irrigation Divisions due to the implementation of the State Aid Regulations.

6.8 In the framework of the implementation of the Government's policy for the development of golf courses in Cyprus, the Department continued the assessment of the various applications with respect of water supply of these developments, in accordance with the decisions of the Council of Ministers and the evaluation of other water management issues and protection within the jurisdiction of the Department. In the same concept, the Department had a considerable input in the Environmental assessment procedure related to each golf course development.

6.9 The Department was also responsible for the preparation of the water allocation scenarios, as well as for the implementation of these scenarios and the related irrigation water supply restrictions. Daily water balances of all dams and daily reports for storage, inflow, releases and losses were prepared and distributed and also published on the WDD's website.

6.10 The maintenance of the Southern Conveyor pipeline continued and inspections carried out of the various structures and equipment of the project to maintain the proper operation and safety.

6.11 Supervision of the operation and maintenance of dams and the Major Water Works and the Wastewater Treatment Plants in Camps and Communities as well as of industrial waste in the Wastewater Treatment Plant at Vathia Gonia continued.

6.12 Coordination of Works Operation and Maintenance of Governmental Water systems continued, (production facilities and transport potable water such as Water Treatment Plants, pumping stations, main diversion pipelines,

storage tanks potable water, etc.) and their monitoring for correct operation and safety of the works and to ensure the production and distribution of good quality potable water to consumers.

6.13 Contribution to the Department rulemaking concerning the management and pricing of water continued, and in the process of preparation of the Rural Development Programme (RDP) 2014-2020 and related to these issues working groups of EU

7. MANAGEMENT OF INFORMATION TECHNOLOGY AND TRAINING

7.1 In the context of further personnel education within the Department, 13 courses were organised with 200 participants. The educational programmes and lectures addressed mainly Technical Software Programmes and Legislative issues, as well as issues on Communication, and training for the induction of newcomers to the Public Service.

7.2 The monitoring of the Southern Conveyor Project is carried out through the use of a Telemetry System, which provides for a continuous and overall view of the functioning of Major Water Works and the possibility to take repair action.

7.3 The WDD electronic infrastructure includes over 500 network appliances, such as personal computers, printers, scanners and other network peripherals. The entire scientific personnel and almost all of the technical and clerical staff have access to the internal network files of common use, as well as to the Internet and email services.

7.4 Technical support in equipment and software Programmes is provided on a daily basis at the main offices, district offices and isolated offices of the Department. In the context of technological upgrading, a partial replacement of old computers, printers and other network peripherals has taken place.

7.5 The WDD website is updated every day. The website includes information on the water resources of Cyprus, the environment, the Water Framework Directive 2000/60/EC, the Floods Directive 2007/60/EK and the relevant Cyprus legislation, water saving measures, etc. In addition, the website allows the public to communicate through e-mail. According to data from the Information Technology Services of the Department, some 11.000 persons visit the website every month.

7.6 The 1st Phase of the project "Introduction / Supply / Customisation / Development and Operation of an integrated Geographic Information System (GIS)" has been completed, and its main objective, which was the creation of infrastructure at WDD and importing of expertise in the operation of the various applications, was successfully fulfilled.

The System is a complete database management system, which supports the geographical dimension of entities and therefore it will offer to the Department the common platform for graded access to all data and an essential tool for the preparation / implementation of various studies.

Furthermore, the various (sub)systems and applications offered, will support the monitoring of water supply, irrigation and sewerage networks and will help to analyse trends affecting the future demand.

Moreover, the project "Development of a subsystem for the Management / Licensing of Boreholes" has been successfully completed, and its main objective, which had as the computerization of various Licensing procedures and permit issuing, was successfully fulfilled.

This subsystem is an integral part of an integrated Geographic Information System (GIS) owned by the WDD, which facilitates and enhances the geographical representation of data as well as the production of maps and related reports.

Additionally, within 2013 digitization and data capturing of WDD infrastructure proceeded in accordance with the digitization plan. Data capturing focused on the digitization of the Main Conveyors (Water Supply, Irrigation & Grey Water) along with distribution networks under WDD responsibility.

8. DEVELOPING WATER SAVING AWARENESS

8.1 In the context of intensifying efforts for the creation of water saving awareness among the public, during 2013 the WDD organised and participated in the following events:

a) The annual event at the headquarters of the Department within the framework of the World Water Day with the theme "**water...drops of life**" in collaboration with the Primary Education of the Ministry of Education and Culture.

b) Event to a Elementary School for the World Water Day.

c) Cooperation with other Organisations, participation in Festivals organized by primary schools, Municipalities, environmental organizations, radio stations, etc.

d) Award event competition results with Universities of Cyprus in the field of graphic arts on cultivating water consciousness.

e) Presentation event Documentary shorts on the Water, in collaboration with the Press Information Office

f) Lectures to organized groups.

g) Preparation of informative articles from WDD officers for the AGROTIS Magazine, radio and television, as well as in the daily press.

8.2 In addition, the WDD participated in exhibitions and other events, concerning water saving.

9. SAFEGUARDING QUALITY

9.1 During 2013 the draft work on the accreditation of WDD laboratories continued. Accreditation is expected to take place in 2014.

Monitoring domestic water quality

9.2 During 2013, more than 17,600 physicochemical tests were carried out on 1,505 water samples and more than 5,400 bacteriological tests on 1,362 water samples. The chemical and bacteriological tests were performed for the following Water Quality Monitoring Programmes:

- Desalination Plants of Dhekelia and Episkopi according to the relative contract specifications.
- Cyprus' Potable Water Network according to Cyprus Law 87(I)/2001 for the quality of water used for human consumption.
- Water Treatment Plants of Tersefanou, Kornou, Choirokoitias, Lemesou, Kannaviou and Asprokremmou according to Cyprus Law 87(I)/2001 for the quality of water used for human consumption.
- Fast-Water-Treatment Plants of Tamasou and Klirou according to Cyprus Law 87(I)/2001 for the quality of water used for human consumption.
- Community Boreholes and Springs of Nicosia, Limassol, Larnaca, Famagusta and Paphos District according to Cyprus Law 87(I)/2001 for the quality of water used for human consumption.
- Cyprus Irrigation Network.
- Ezousas' Aquifer enrichment program according to Water Framework Directive 2000/60/EC.
- Polis Chrysochous and Paphos underwater chloride salts monitoring program
- Minor Dams, according to Water Framework Directive 2000/60/EC.
- Major Springs of Nicosia district, according to Water Framework Directive 2000/60/EC.

In 2013, the water quality controls trial operations' of Episcope and Vasilikou (EAC) Desalination Plants were also completed.

Monitoring of recycled treated wastewater quality

9.3 The collection of samples continued for Chemical and microbiological analyses, toxicity tests and metal ion analyses of samples from 33 Wastewater Treatment Plants, and from the Wastewater Treatment Plants of Sewerage Boards of Nicosia, Larnaca, Limassol, Paphos and Paralimni - Ayia Napa. Of 455 samples, in total, 3634 parameters were analysed.

9.4 Sample taking for chemical and microbiological water tests took place at the Polemidhia Dam, before and after the period recycled water was discharged in it.

Sample taking for chemical and microbiological water tests took place at the Athalassa Dam, before and after the period recycled water was discharged in it.

9.5 Sample taking for chemical and microbiological analyses of Ovgos River took place before and after the discharge period of recycled treated wastewater in the river.

9.6 Sample taking for chemical and microbiological analyses : **a)** from soil irrigated with recycled treated wastewater of the Wastewater Treatment Plants of Sewerage Boards of Nicosia, Larnaca, Limassol, Paphos and Paralimni - Ayia Napa and of the Central Domestic and Industrial Wastewater Treatment Plant at Vathia Gonia **b)** from the Limassol and Larnaca coastal waters before and after the discharge of recycled treated wastewater in the sea, **c)** of soil on which sludge from the Central Domestic and Industrial Wastewater Treatment Plant at Vathia Gonia was disposed, **d)** of sludge from the Central Domestic and Industrial Wastewater Treatment Plant at Vathia Gonia before being placed to the soil **e)** of recycled treated wastewater going to farmers for irrigation, **f)** water drilling in areas irrigated with recycled treated wastewater and **g)** of untreated wastewater from 26 rural Wastewater Treatment Plants.

Safety and Health

9.7 In 2013, the Safety and Health Support Sector, applied the legislation on health and safety at work laws N33 (1) 1996-2011 for staff and third parties. Among others, the Sector conducted inspections in all the sites, facilities and premises of the Department and prepared reports. Furthermore, it coordinated 10 Safety Committees and organised courses on first aid and the use of a defibrillator, from approved trainer and has provided for the training of personnel on health and safety issues. The Sector was also involved in the preparation of relevant specifications and contracts and provide the staff with all necessary personal protective equipment (PPE).

Internal Auditing

9.8 In 2013, reactivated the internal auditing of works with on-site visits to WDD construction projects, as well as to Government Irrigation Projects across Cyprus, with the aim of maintaining good work standards and preventing and avoiding accounting and technical omissions or oversights.

9.9 Apart from routine checks, the auditing procedure continued, focusing on locating institutional and procedural problems and preparing proposals for uniform resolution, from all Divisions and District Offices of the Department.

TABLE 9

WATER WORKS-DAMS		Capacity M.C.M	Storage 01-01-13	Inflow 1/1-31/12/13	Water used 2013 M.C.M			
					Domestic	Irrigation	Recharge	Total
1	SOUTHERN CONVEYOR PROJECT							
1.1	DAMS							
	(i) Kouris	115,000	101,375	13,563	29,813	28,967	0,472	59,252
	(ii) Kalavassos	17,100	11,911	2,303	8,700	1,366		10,066
	(iii) Lefkara	13,850	3,673	0,526	0,000	0,157		0,157
	(iv) Dipotamos	15,500	9,607	1,342	6,350	0,588		6,938
	(v) Germasogeia	13,500	11,882	4,481	7,232	0,655		7,887
	(vi) Polemidia	3,400	2,140	0,360		0,607		0,607
	(vii) Arminou	4,300	3,343	14,481			2,920	2,920
	(viii) Achna	6,800	2,732			2,661		2,661
	Total from Dams S.C.P.	189,450	146,663	37,056	52,095	35,001	3,392	90,488
1.2	Nicosia Boreholes-Domestic use							0,000
1.3	Germasogeia Boreholes-Domestic use				1,045			1,045
1.4	Kouris Delta Boreholes-Domestic use				2,367			2,367
1.5	Krasochria boreholes-Domestic use				0,067			0,067
1.6	Limassol Boreholes- Irrigation					0,450		0,450
1.8	Larnaca Disalination							0,000
1.9	Dekelia Disalination				10,711			10,711
1.10	Moni Disalination							0,000
1.11	Garillis Disalination							0,000
1.12	Avdimou- Paramali							0,000
1.13	Recycle Water East and West of Limassol					4,750		4,750
	Total Southern Conveyor Project				66,285	40,201	3,392	109,878
2	PAFOS PROJECT							
2.1	DAMS							
	(i) Asprokremmos	52,375	52,375	0,828	0,282	8,201		8,483
	(ii) Kannaviou-Anarita water treatment plan	17,168	17,168	2,208	5,854	0,132	0,192	6,178
	(iii) Kannaviou-Kannaviou water treat.plan				0,910			0,910
	(iv) Mavrokolymbos	2,180	1,826	0,276		1,689		1,689
	Total from Dams	71,723	71,369	3,312	7,046	10,022	0,192	17,260
2.2	Boreholes & Diversions-Domestic WBP				3,250			3,250
2.3	Boreholes-Diartzos				0,556			0,556
2.4	Boreholes-High Areas				0,431			0,431
2.5	Boreholes-Ezousa and Recycle					2,767		2,767
2.6	Pafos Disalination							0,000
	TOTAL PAFOS				11,283	12,789	0,192	24,264
3	CHRYSOCHOU PROJECT							
3.1	DAMS							
	(i) Evretou	24,000	24,000	0,371		4,062		4,062
	(ii) Pomos	0,860	0,860	0,004		0,807		0,807
	(iii) Agia Marina	0,298	0,241	0,062		0,298		0,298
	(iv) Argaka	0,990	0,990	0,002		1,026		1,026
	Total from Dams	26,148	26,091	0,439	0,000	6,193	0,000	6,193
3.2	Boreholes -Irrigation							0,000
	TOTAL CHRYSOCHOU				0,000	6,193	0,000	6,193
4	Nicosia District							
4.1	DAMS							
	Xyliatos	1,430	1,276	0,334		0,617		0,617
	Vizakia	1,690	1,191	0,481		0,450		0,450
	Kalopanayiotis	0,363	0,363	0,145		0,239		0,239
	Lymbia	0,220				0,020		0,020
	Total from Dams	3,703	2,830	0,960	0,000	1,326	0,000	1,326
4.2	Recycle Water-Vathia Gonia					1,802		
4.3	Recycle Water-Anthoupoli					0,598		
5	Recycle Water-Larnaca					1,938		
	SOURCES - TOTALS	291,024	246,953	41,767				
	DAMS				59,141	52,542	3,584	115,267
	BORHOLES				7,716	3,217		10,933
	DISALINATION				10,711			10,711
	RECYCLE WATER					9,088		9,088
	TOTALS	291,024	246,953	41,767	77,568	64,847	3,584	145,999

NOTE: From Germasogeia boreholes 8,277 mcm used for domestic, while the recharged from Germasogeia dam was 7,232 mcm.

Water transferred from Kouris dam to Achna dam 3.792 mcm and from Arminou dam to Kouris dam 13.283 mcm

The overflowed quantities not measured.