PROJECT REFERENCE	PROJECT ACRONYM	PROJECT TITLE	KEYWORDS	ABSTRACT	PI SURNAME	PI NAME	PI 2 NAME & SURNAME	RESEARCH INSTITUTION	DEPARTMENT	CENTRE	START DATE	END DATE	FUNDING AGENCY	COUNTRY
AGL2007-66716-C03-01		ADVANCED MANAGEMENT OF SPRINKLER IRRIGATION SYSTEMS	SPRINKLER IRRIGATION MANAGEMENT\SPRINKLER IRRIGATION UNIFORMITY\WIND DRIFT AND EVAPORATION LOSSES\WATER PRODUCTIVITY	SPRINKLER IRRIGATION IS BROADLY INTRODUCED IN SPAIN, AND ITS AREA IS QUICKLY INCREASING. THIS IRRIGATION SYSTEM HAS A HIGH POTENTIAL APPLICATION EFFICIENCY AND CAN ATTAIN HIGH YIELDS OF FIELD CROPS. HOWEVER, SPRINKLER IRRIGATION PERFORMANCE IS AFFECTED BY DESIGN AND MANAGEMENT VARIABLES (PARTICULARLY ENVIRONMENTAL CONDITIONS), WHICH CAN SEVERELY REDUCE ITS POTENTIAL. IT IS URGENT TO IMPROVE THE PERFORMANCE OF SPRINKLER IRRIGATION SYSTEMS IN ARID-SEMIARID AREAS DUE TO THE INCREASING SCARCITY OF IRRIGATION WATER AND THE INCREASED COMPETITION IN AGRICULTURE. A PREVIOUS RESEARCH GRANT IN SOLID-SET SYSTEMS (AGL2004-06675, TO BE COMPLETED IN 2007) RESULTED IN A DATABASE OF CURRENT DESIGN AND MANAGEMENT IN SPANISH FARMERS FIELDS, ESTABLISHED THE MICROCLIMATIC CHANGES DURING IRRIGATION REPORTING ON THE CONTRIBUTION OF PART OF THE WATER LOSSES TO CROP WATER REQUIREMENTS, DETERMINED THE INCREASE OF MAIZE YIELD UNDER NIGHTTIME IRRIGATION, CHARACTERIZED AND MODELED THE BEHAVIOR OF MOST POPULAR SPRINKLER MODELS, CHARACTERIZED THE VARIABILITY OF WIND AND WATER PRESSURE IN AN IRRIGATION DISTRICT AND LED TO THE CURRENT DEVELOPMENT OF A SIMULATION SOFTWARE FOR COLLECTIVE SOLID-SET SPRINKLER IRRIGATION. IT IS NECESSARY TO COMPLETE THIS WORK IN SOLID SETS AND TO PERFORM SIMILAR STUDIES IN CENTER PIVOT SYSTEMS. MOREOVER, IT IS NECESSARY TO STUDY IN MORE DEPTH THE EFFECT OF SPRINKLER IRRIGATION MANAGEMENT ON CROP GROWTH AND YIELD, AND TO DEVELOP TOOLS FOR IMPROVING IRRIGATION EFFICIENCY AT FARMERS FIELDS.	CAVERO CAMPO	JOSE		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION EXPERIMENTAL DE AULA DEI (EEAD-CSIC)	ESTACION EXPERIMENTAL DE AULA DEI (EEAD-CSIC)	01-10-07	31-12-10	MINECO	Spain
AGL2007-62648		POROUS STRUCUTRE, HYDRAULIC PROPERTIES AND TRANSPORT OF CONTAMINANTS IN STRUCTURATED SOILS: PARAMETRIC QUANTIFICATION AND MODELING BY MEANS OF FRACTAL TECNIQUES AND RELATED MATHEMATICAL METHODS	WATER ALLOTMENT,\ALLOTMENT RULES,\SOCIAL CHOICE,\ENVIRONMENTAL POLICIES,	SOIL STRUCTURE GREATLY AFFECTS THE ABILITY OF SOIL TO TRANSMIT AND RETAIN WATER, COLLOIDAL OR ANY KIND OF CONTAMINANTS. FINDING QUANTITATIVE RELATIONSHIPS BETWEEN PARAMETRIC CHARACTERIZATIONS OF SOIL STRUCTURE AND SOIL HYDRAULIC PROPERTIES OR PARAMETERS OF SOLUTE TRANSPORT IS ESSENTIAL IN ORDER TO PREDICT THE FATE OF INDUSTRIAL OR AGRICULTURAL CONTAMINANTS IN SOIL. THE ULTIMATE GOAL IS UNDERSTANDING TRANSPORT PROCESSES IN NATURAL AQUIFERS AND THE VADOSE ZONE BY THEIR RELATIONSHIP WITH THE TEXTURE AND THE STRUCTURE OF THE SOIL PORE SPACE. THE PRESENT PROJECT IS STRUCTURED ALONG THE FOLLOWING LINES: 1) ACQUISITION OF UNALTERED SAMPLES OF SOIL BLOCKS WITH KUBIENA CASES AND SOIL COLUMNS WITH CYLINDERS. 2) 2D AND 3D ANALYSIS OF SOIL PORE SPACE: A) DEVELOPMENT OF A NEW PROTOCOL TO ANALYZE IMAGES OF SOIL THIN SECTION TO AVOID THE DISADVANTAGES OF THE METHODS IN USE TO DATE. IT REQUIRES THE USE OF NEW DYES AND EQUIPMENTS, AS WELL AS THEIR CALIBRATION, TO COLLECT QUALITY IMAGES. B) 3D RENDERING OF SOIL COLUMNS PORE SPACE WITH DATA FROM X-RAY COMPUTED TOMOGRAPHY. 3) SOIL STRUCTURE QUANTIFICATION FROM 2D DATA BY FRACTAL TECHNIQUES AND PARAMETERS THAT WILL ALLOW US TO CHARACTERIZE THE HETEROGENEITY /SPATIAL VARIABILITY OF SOIL POROSITY, PORE-SIZE DISTRIBUTION	MARTIN MARTIN	MIGUEL ANGEL		UNIVERSIDAD POLITECNICA DE MADRID	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-10-07	30-04-11	MINECO	Spain

AGL2007-66716-C03-02		ADVANCED MANAGEMENT OF SPRINKLER IRRIGATION SYSTEMS	IRRIGATION\CENTRE PIVOTS\CROPS\IRRIGATION UNIFORMITY\DRIFT AND EVAPORATION LOSSES\WATER DROPS SIZE	SPRINKLER IRRIGATION IS BROADLY INTRODUCED IN SPAIN, AND ITS AREA IS QUICKLY INCREASING. THIS IRRIGATION SYSTEM HAS A HIGH POTENTIAL APPLICATION EFFICIENCY AND CAN ATTAIN HIGH YIELDS OF FIELD CROPS. HOWEVER, SPRINKLER IRRIGATION PERFORMANCE IS AFFECTED BY DESIGN AND MANAGEMENT VARIABLES (PARTICULARLY ENVIRONMENTAL CONDITIONS), WHICH CAN SEVERELY REDUCE ITS POTENTIAL. IT IS URGENT TO IMPROVE THE PERFORMANCE OF SPRINKLER IRRIGATION SYSTEMS IN ARID-SEMIARID AREAS DUE TO THE INCREASING SCARCITY OF IRRIGATION WATER AND THE INCREASED COMPETITION IN AGRICULTURE. A PREVIOUS RESEARCH GRANT IN SOLID-SET SYSTEMS (AGL2004-06675, TO BE COMPLETED IN 2007) RESULTED IN A DATABASE OF CURRENT DESIGN AND MANAGEMENT IN SPANISH FARMERS¿ FIELDS, ESTABLISHED THE MICROCLIMATIC CHANGES DURING IRRIGATION REPORTING ON THE CONTRIBUTION OF PART OF THE WATER LOSSES TO CROP WATER REQUIREMENTS, DETERMINED THE INCREASE OF MAIZE YIELD UNDER NIGHTTIME IRRIGATION, CHARACTERIZED AND MODELED THE BEHAVIOR OF MOST POPULAR SPRINKLER MODELS, CHARACTERIZED THE VARIABILITY OF WIND AND WATER PRESSURE IN AN IRRIGATION DISTRICT AND LED TO THE CURRENT DEVELOPMENT OF A SIMULATION SOFTWARE FOR COLLECTIVE SOLID-SET SPRINKLER IRRIGATION. IT IS NECESSARY TO COMPLETE THIS WORK IN SOLID SETS AND TO PERFORM SIMILAR STUDIES IN CENTER PIVOT SYSTEMS. MOREOVER, IT IS NECESSARY TO STUDY IN MORE DEPTH THE EFFECT OF SPRINKLER IRRIGATION MANAGEMENT ON CROP GROWTH AND YIELD, AND TO DEVELOP TOOLS FOR IMPROVING IRRIGATION EFFICIENCY AT FARMERS¿ FIELDS.	FACI GONZALEZ	JOSE Mª		CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	01-10-07	31-12-10	MINECO	Spain
AGL2007-66716-C03-03		AGRONOMIC AND TECHNICAL IRRIGATION ANALYSIS WITH CENTRE PIVOTS	ACCLIMATION\CLIMATE CHANGE\DROUGHT\DISTRIBUTION\MORTALITY\SCOTS PINE (PINUS SYLVESTRIS)\VEGETATION DYNAMICS MODELLING\WATER-USE\WILDFIRES\RECRUITMENT	IRRIGATION WITH CENTER PIVOTS HAS IMPROVED A LOT WITHIN THE LAST DECADES THANKS TO THE VERSATILITY OF ADAPTATION THE NEW SPRINKLER HAVE (CONCAVE OR CONVEX, FIXED OR ROTATING PLATE SPRINKLERS). WITH THIS NEW SPRINKLERS, HEIGHT OVER THE SOIL SURFACE CAN BE MODIFIED, TRYING TO OBTAIN THE BEST COMBINATION OF UNIFORMITY OF WATER APPLICATION, REDUCTION OF WIND DRIFT AND EVAPORATION LOSSES AND AN ACCEPTABLE CROP YIELD. IN ORDER TO OBTAIN A UNIFORM AND EFFICIENT WATER APPLICATION, MOST OF THE DROPS DISTRIBUTED SHOULD BE OF MEDIUM SIZE (BETWEEN 1.5 AND 4 MM DIAMETER), BECAUSE SMALL DROPS WOULD MAKE WIND DRIFT AND EVAPORATION LOSSES TO INCREASE AND TOO BIG DROPS COULD DAMAGE SOIL AND PLANTS. THE AIM OF SUBPROJECT 3 IS TO ANALYZE BOTH, AGRONOMIC AND TECHNICALLY, IRRIGATION WITH CENTER PIVOTS. THREE MAIN TASKS ARE GOING TO BE CONDUCTED IN ORDER TO SATISFY THIS OBJECTIVE: 1.CHARACTERIZATION OF THE DESIGN AND MANAGEMENT OF CENTER PIVOTS. A DATABASE WILL BE DEVELOPED ON IRRIGATION FACILITIES OF THE MOST REPRESENTATIVE AREAS OF CASTILLA ¿ LA MANCHA. FIFTY FIELD TESTS WILL BE CONDUCTED IN ORDER TO CHARACTERIZE THE WAY CENTER PIVOTS ARE OPERATING WITHIN THE REGION AND THE QUALITY OF THE WATER APPLICATION PROCESS. MOREOVER, COSTS OF WATER APPLICATION WITH CENTER PIVOTS WILL BE STUDIED. THUS, TECHNICAL INFORMATION	DE JUAN VALERO	JOSE ARTURO		UNIVERSIDAD DE CASTILLA-LA MANCHA	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	01-10-07	04-10-10	MINECO	Spain
AGL2007-66279-C03-01		USE OF DENDROMETRY FOR AUTOMATED ADJUSTMENT OF DEFICIT IRRIGATION IN ORNAMENTAL ARBORICULTURE AND FRUIT TREES (PEACH)	DENDROMETRY\IRRIGATION SCHEDULING\DEFICIT IRRIGATION\WOODY CROPS	THE OBJECTIVES OF THIS SUBPROJECT CONSIST ON THE EVALUATION OF DIFFERENT PROTOCOLS FOR REGULATED DEFICIT IRRIGATION BASED ON THE USE OF DENDROMETERS IN ORNAMENTAL ARBORICULTURE AND PEACH. THIS INVOLVES THE COMPARISON OF DIFFERENT TREATMENTS OF REGULATED DEFICIT IRRIGATION BASED ON THE INTENSITY OF EITHER THE MDS OR THE MAXIMUM ACCUMULATED SHRINKAGE, COMBINED WITH THE SOIL WATER TENSION AND THE AMOUNT OF WATER SUPPLIED IN PREVIOUS DAYS. IN PEACH, PREVIOUS EXPERIENCES INDICATE THE BEST MOMENTS TO APPLY REGULATED DEFICIT BUT NOT IN ORNAMENTAL TREES. THE SECOND OBJECTIVE IS TO INTEGRATE THE SENSORS IN PLANT IN A DECISION SUPPORT SYSTEM FOR IRRIGATION CONTROL OPEN TO OTHER AVAILABLE SOURCES OF INFORMATION SUCH AS AGROMETEOROLOGICAL DATA AND VOLUME OF WATER APPLIED IN PREVIOUS IRRIGATION EVENTS. THIS SUBPROJECT WILL ALSO EVALUATE HOW THE VARIATION IN TRANSPIRATION DEMAND (I.E. BY REDUCTION OF LEAF AREA AND INCIDENT RADIATION) AFFECTS THE DAILY DYNAMICS OF THE TRUNK DIAMETER VARIATION. ALSO, IT PROPOSES TO VERIFY THE PROPER IRRIGATION MANAGEMENT FOR USING RECLAIMED WATER IN ORNAMENTAL ARBORICULTURE, WHOSE CHEMICAL CHARACTERISTICS (ELECTRICAL CONDUCTIVITY, NITROGEN AND PHOSPHORUS CONCENTRATION, ETC.) FLUCTUATE	BIEL LOSCOS	CARMEN		INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTARIES (IRTA)	XCENTRE DE CABRILS	XCENTRE DE CABRILS	01-12-07	30-11-10	MINECO	Spain

AGL2007-66279-C03-03		OPTIMIZATION OF REGULATED DEFICIT IRRIGATION IN ALMOND TREES BY SCHEDULING WITH DENDROMETERS	IRRIGATION\SPRINKLER\LOSSES\WIND\ UNIFORMITY\PHOTOSYNTHESIS\PROG RAMMING\SIMULATION\MICROCLIMA TE	THIS PROJECT IMPLIES THE CONTINUITY OF WORKS ABOUT IRRIGATION THAT STARTED ON YOUNG ALMOND TREES. THE MAIN OBJECTIVE IS IMPROVE THE PRODUCTIVITY OF THE TREE THROUGH A MORE SCIENTIFIC AND TECHNICAL IRRIGATION SCHEDULING, BASED ON THE USE OF DENDROMETERS, AND IN PARTICULAR, ON THE MAXIMUM DAILY TRUNK SHRINKAGE (MDS). THE PROJECT IS ABOUT: I) VALIDATING/ADJUSTING THE EQUATIONS THAT RELATE THE MDS TO THE CLIMATIC VARIABLE VAPOUR PRESSURE DEFICIT OF THE ATMOSPHERE (DPV) AND THAT WERE OBTAINED BEFORE THE MATURITY OF THE TREE, II) OBTAINING REFERENCE OR BASELINES FOR THE MATURE STAGE, PRESENT SITUATION OF THE ORCHARD, BEING THIS PERIOD THE LONGEST AND THE MOST ECONOMICALLY IMPORTANT, III) ESTABLISHING CRITERIA FOR OPTIMIZING REGULATED DEFICIT IRRIGATION, THIS BEING A LINE OF GREAT INTEREST FOR THE MAINTENANCE AND EVEN THE BOOST OF THIS CROP, IV) DEMONSTRATING THE EFFICIENCY OF THESE NEW IRRIGATION SCHEDULING SYSTEMS BASED ON PLANT SENSORS, FROM A COMPARATIVE STUDY OF THE CROP¿S RESPONSE TO THE IRRIGATION REGIME AND THE WATER AMOUNTS APPLIED. SINCE THE FINAL GOAL OF THESE SERIES OF WORKS IS THE AUTOMATION OF IRRIGATION, THE DEVELOPMENT OF A COMPILER THAT	DOMINGO MIGUEL	RAFAEL		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	DPTO. PRODUCCION VEGETAL	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-12-07	28-02-11	MINECO	Spain
AGL2008-00153		WATER DISTRIBUTION IN SOILS WITH SUBSURFACE DRIP IRRIGATION SYSTEMS	CATCH CROPS\COVER CROPS\NITROGEN\WATER\SOIL QUALITY	WATER AND ENERGY SAVINGS ARE GOALS OF PERMANENT / SUSTAINABLE IRRIGATED AGRICULTURE. A PRIORITY IN THE IMPROVEMENT AND MODERNIZATION OF IRRIGATION SYSTEM DESIGN AND MANAGEMENT, THAT AIM HAS FAVOURED CHANGES FROM TRADITIONAL TO DRIP IRRIGATION METHODS. FURTHER DEVELOPMENTS ARE EXPECTED WITH A TREND TOWARDS SUBSURFACE DRIP IRRIGATION (SDI), A VARIANT OF THE FORMER WITH POTENTIAL ADVANTAGES FOR REDUCING EVAPORATION AND FOR USING WASTEWATERS. MEASURING INFILTRATION WITH SDI IS COMPLEX AND IS NOT FREQUENTLY DONE NOR ITS EVOLUTION ALONG IRRIGATION CAMPAIGNS ATTENDED. ITS NEED TO KNOW IRRIGATION EFFICIENCY IS FREQUENTLY IGNORED. INSTEAD, ROUGH ESTIMATIONS OF A PERCENTAGE OF WATER VOLUMES ARE OFFERED. A KNOWLEDGE OF INFILTRATION VALUES AND THEIR COMPARISON WITH VALUES FROM OTHER IRRIGATION METHODS WOULD ALLOW IMPROVING PRECISE CRITERIA ABOUT SDI OPERATIONS AND ITS SUITABILITY FOR CERTAIN SOIL TYPES. IT IS THEN OF SOME INTEREST TO CHARACTERIZE WATER DISCHARGE FROM THEIR IRRIGATION SYSTEMS, WHICH HAVE A KNOWN INTERFERENCE IN THE INTERFACE BETWEEN PIPELINE HYDRAULICS AND SOIL INFILTRATION IN THE FIELD UNITS. A BETTER UNDERSTANDING OF PHYSICAL PRINCIPLES INVOLVED SHOULD LEAD TO IMPROVE IRRIGATION EFFICIENCY, TO REDUCE PERCOLATION OF WATER AND FERTILIZERS AND TO SAVE ENERGY. CRITERIA TO DETERMINE WATER USE EFFICIENCY DELIVERED	RODRIGUEZ SINOBAS	LEONOR		UNIVERSIDAD POLITECNICA DE MADRID	DPTO. INGENIERIA RURAL	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-01-09	30-06-13	MINECO	Spain
AGL2008-03774		USE OF A COMBINED MODELLING AND MONITORING APPROACH TO OPTIMISE MANAGEMENT OF FERTILISER N FOR VEGETABLE PRODUCTION IN GREENHOUSES	MEDITERRANEAN PLANTS\WATER RELATIONS\SALINITY\IRRIGATION\OSM OTIC ADJUSTMENT\ELASTIC ADJUSTMENT\SALINE IONS\OSMOTIC STRESS	GREENHOUSE-BASED VEGETABLE PRODUCTION IN SOUTH-EAST SPAIN IS ASSOCIATED WITH CONSIDERABLE ON-GOING NITRATE CONTAMINATION OF UNDERLYING AQUIFERS. MOST OF THESE AREAS HAVE BEEN DECLARED NITRATE VULNERABLE ZONES. THIS HORTICULTURAL SYSTEM HAS THE TECHNICAL CAPACITY FOR PRECISE NUTRIENT AND IRRIGATION MANAGEMENT, WHICH IS NOT BEING EFFECTIVELY USED. THERE IS AN URGENT REQUIREMENT FOR MANAGEMENT TOOLS THAT OPTIMISE N AND IRRIGATION MANAGEMENT, THEREBY REDUCING NITRATE LEACHING LOSS. THE PROPOSED WORK WILL DEVELOP A PRESCRIPTIVE-CORRECTIVE MANAGEMENT APPROACH FOR BOTH N AND IRRIGATION MANAGEMENT OF VEGETABLE GROWN IN SOIL IN GREENHOUSES IN SOUTH EAST SPAIN. THE PRESCRIPTIVE COMPONENT FOR N AND IRRIGATION MANAGEMENT WILL BE BASED ON THE USE OF THE CROPSYST SIMULATION MODEL. CORRECTIVE MANAGEMENT FOR N WILL USE NITRATE IN THE SOIL SOLUTION, OBTAINED WITH CERAMIC CUP SUCTION SAMPLERS, AND FOR IRRIGATION, MANUAL TENSIOMETERS. BECAUSE MODELLING WILL BE USED FOR THE PRESCRIPTIVE COMPONENT, AND MONITORING FOR THE CORRECTIVE COMPONENT, THE APPROACH IS ALSO REFERRED TO AS A ¿MONITORING-MODELLING¿ APPROACH. CROPSYST HAS BEEN ADAPTED TO THIS VEGETABLE PRODUCTION SYSTEM,	THOMPSON	RODNEY		UNIVERSIDAD DE ALMERIA	DPTO. PRODUCCION VEGETAL	DPTO. PRODUCCION VEGETAL	01-01-09	30-06-12	MINECO	Spain

AGL2008-02216-C02-01		OPTIMIZATION OF NITROGEN FERTILIZATION IN OLIVE ORCHARDS	NITROGEN\TOMATO\MODELLING\NITRATE LEACHING\DECISION SUPPORT SYSTEMS	THE PRESENT PROJECT IS THE CONTINUATION OF FIVE PREVIOUS PROJECTS. THE GENERAL OBJECTIVE WAS TO STUDY DIFFERENT ASPECTS OF OLIVE TREE NUTRITION IN ORDER TO ESTABLISH RATIONAL FERTILIZATION PROGRAMS FOR OLIVE ORCHARDS WITHIN THE PHILOSOPHY OF A SUSTAINABLE AGRICULTURE, THAT IS, MINIMIZING FERTILIZER APPLICATIONS AND DEVELOPING TECHNIQUES TO REDUCE AIR AND WATER POLLUTION. THE RESULTS OBTAINED IN PREVIOUS PROJECTS ALLOW US TO OPEN NEW OBJECTIVES. THE PRESENT PROJECT WILL BE FOCUSED ON THE OPTIMIZATION OF NITROGEN FERTILIZATION BECAUSE NITROGEN IS THE MINERAL ELEMENT MOST COMMONLY USED IN THE FERTILIZATION PROGRAMS, CONTRIBUTES TO SOIL AND GROUNDWATER POLLUTION AND COULD NEGATIVELY AFFECT FRUIT QUALITY. THE SPECIFIC OBJECTIVES ARE: 1) TO COMPLETE THE ANNUAL NITROGEN BALANCE IN THE OLIVE ORCHARD; 2) TO STUDY AND MINIMIZE THE ADVERSE EFFECTS OF NITROGEN EXCESS IN THE TREE AND, PARTICULARLY, THE EFFECT ON FROST TOLERANCE, ON FLOWER QUALITY AND ON FRUIT MATURATION; 3) DEVELOPING TECHNIQUES TO REDUCE THE ENVIRONMENTAL IMPACT THROUGH THE UTILIZATION OF NITRIFICATION INHIBITORS AND THE USE OF FOLIAR FERTILIZATION; 4) TO ADJUST LEAF CRITICAL NITROGEN LEVELS, BOTH OF DEFICIENCY AND EXCESS; AND 5) TO	FERNANDEZ ESCOBAR	RICARDO		UNIVERSIDAD DE CORDOBA	DPTO. AGRONOMÍA	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS Y DE MONTES	01-01-09	31-12-11	MINECO	Spain
AGL2008-05532-C02-01		PLANT SPATIAL PATTERN AND HYDROLOGICAL FUNCTION IN SEMIARID ECOSYSTEMS. A MANIPULATIVE APPROACH.	REFORESTATION\RUNOFF\SOIL MOISTURE\MICORCATCHMENT\SEWAGE SLUDGE\WATER USE EFFICIENCY\MINERALIZATION\NUTRIENT BALANCE	IN SEMIARID ECOSYSTEMS, THE TRANSFER OF WATER, SEDIMENTS, AND NUTRIENTS FROM BARE (SOURCE AREAS) TO VEGETATED PATCHES (SINK AREAS) IS KNOWN TO BE CRUCIAL FOR THE ECOSYSTEM FUNCTIONING AND MAINTENANCE OF VEGETATION PATCHES. BECAUSE OF THIS IMPORTANCE OF SOURCE-SINK DYNAMICS TO THE FUNCTIONING OF SEMIARID ECOSYSTEMS, THE KNOWLEDGE OF THEIR CONTROL FACTORS, PARTICULARLY THE ROLE OF PLANT SPATIAL PATTERN AND FUNCTIONAL DIVERSITY, MAY GREATLY IMPROVE NATURAL RESOURCE MANAGEMENT, AS WELL AS RESTORATION TECHNIQUES BASED ON WATER HARVESTING TECHNIQUES. THE OBJECTIVE OF THIS PROPOSAL IS THE STUDY AND MODELLING OF THE RELATIONSHIPS AMONG SPATIAL PATTERN, DIVERSITY, AND HYDROLOGICAL FUNCTION BY PERFORMING MANIPULATIVE EXPERIMENTS THAT ALLOW TO SEPARATELY TEST THE EFFECTS OF PLANT SPATIAL PATTERN AND DIVERSITY, AND THEIR INTERACTIONS, ON THE HYDROLOGICAL BEHAVIOUR OF SEMIARID ECOSYSTEMS. IN ADDITION, THE PROJECT WILL EVALUATE THE EFFECT OF THE CHANGES IN THE SOURCE-SINK SPATIAL PATTERN DRIVEN BY THE RESTORATION ACTIONS ON CATCHMENT HYDROLOGY, AND WILL DEVELOP HYDROLOGICAL FUNCTION INDICATORS THAT RESULT FROM THE PLANT SPATIAL PATTERN.	BAUTISTA AGUILAR	SUSANA		UNIVERSIDAD DE ALICANTE	DPTO. ECOLOGIA	FACULTAD DE CIENCIAS	01-01-09	31-12-11	MINECO	Spain
AGL2008-05532-C02-02		WATER-NUTRIENT INTERACTIONS IN THE RESTORATION OF LOW RAINED DEGRADED SITES	CONTINUOUS AND DISCONTINUOUS NUMERICAL M\INTERFACES\RIVERS\ESTUARIES\LANDFORM EVOLUTION	THIS PROPOSAL CONSIDERS THE JOINT UTILIZATION OF SIMPLE RUNOFF HARVESTING SYSTEMS (MICROCATCHMENTS) AND APPLICATION OF ORGANIC REFUSES (COMPOSTED SEWAGE SLUDGE) TO IMPROVE THE RESULTS OF REFORESTATION PROJECTS IN SEMIARID MEDITERRANEAN AREAS. THE APPROACH IS ESSENTIALLY PRACTICAL AND THE FINAL AIM IS TO PROVIDE USEFUL CRITERIA TO FOREST MANAGERS FOR IMPLEMENTING THESE TECHNIQUES IN THE RESTORATION OF DEGRADED RANGE AREAS. THESE CRITERIA WILL BE ESTABLISHED FROM AVAILABLE SCIENTIFIC INFORMATION AND THAT RELEASED FROM THE PROJECT. WE HYPOTHESIZE THAT BOTH A DECREASE IN WATER STRESS, ESPECIALLY IN THE MORE SEVERE DROUGHT PERIODS, AND AN INCREASE IN SOIL ORGANIC MATTER AND NUTRIENT AVAILABILITY WILL SIGNIFICANTLY IMPROVE FOREST RESTORATION ACTIVITIES IN SEMIARID AREAS. THE FIRST IMPLIES THE ESTABLISHMENT OF EXPERIMENTAL FIELD PLOTS WITH DIFFERENT SITE PREPARATION IN THE SOURCE AND/OR SINK AREAS (RUNOFF HARVESTING STRUCTURES, PLASTIC MULCH, BURIED CLAY POTS, COMPOST AMENDMENTS). THE RESOLUTION OF THE INITIAL HYPOTHESIS IMPLIES AN INCREASE IN WATER AVAILABILITY IN THE CRITICAL PERIODS. ONE OF THE LIMITATIONS FOR THE EFFECTIVENESS OF THE MICROCATCHMENTS IS THAT A THRESHOLD INTENSITY RAIN EVENT IS NEEDED TO PRODUCE RUNOFF. WE CONSIDER AN ALTERNATIVE TREATMENT ("BENCH WITH IMPROVED MICROCATCHMENT ") WITH	VALDECANTOS DEMA	ALEJANDRO		FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	01-01-09	31-03-12	MINECO	Spain

AGL2008-01399		SOIL WATER REPELLENCY IN FOREST SOILS OF GALICIA: TEMPORAL VARIABILITY AND EFFECTS OF FIRE	WILDFIRES\SOIL QUALITY\POST-FIRE EROSION\PROTECTION AND RECOVERY OF BURNED SOILS\IMPLANTATION OF A VEGETATION COVER\MULCHING\ORGANIC AMENDMENTS.	WATER REPELLENCY OCCURS WIDELY IN SOILS IN GALICIA (NW SPAIN) AND YET LITTLE INFORMATION ABOUT IT APPEARS TO HAVE BEEN COMPILED TO DATE. THIS PHENOMENON CAN HAVE HIGHLY ADVERSE EFFECTS ON PLANT GROWTH, THE HYDROLOGICAL BEHAVIOUR OF SOIL AND SOIL EROSION. ITS VARIABILITY AND CHARACTERISTICS CONSIDERABLY HINDER DETECTION, ASSESSMENT AND MANAGEMENT, PARTICULARLY AS REGARDS MODELLING SOME SOIL PROPERTIES WITH A VIEW TO ENSURING EFFICIENT, RATIONAL USE OF SOILS. THIS PROJECT IS AIMED AT ACQUIRING A DEEPER KNOWLEDGE OF WATER REPELLENCY IN FOREST SOILS IN GALICIA, WITH SPECIAL EMPHASIS ON THE INFLUENCE OF VARIOUS TREE SPECIES, ITS TEMPORAL AND SPATIAL VARIABILITY, AND ITS IMPACT ON SOIL WATER INFILTRATION. FOREST FIRES INCREASE THE SEVERITY OF THE PROBLEM AND HAVE STRONG EFFECTS ON SURFACE RUNOFF AND SOIL EROSION. IN RESPONSE, THE PROJECT IS ALSO AIMED AT STUDYING WATER REPELLENCY IN SPACE AND TIME AFTER FIRES, AND, ESPECIALLY, ITS INFLUENCE ON THE HYDROLOGICAL BEHAVIOUR OF BURNT SOILS AND THEIR RISK OF EROSION. THE PROJECT WITH BE COMPLETED WITH LABORATORY TESTS INTENDED TO HELP ALLEVIATE THE CONSEQUENCES OF WATER REPELLENCY WITH A VIEW TO FACILITATING	BENITO RUEDA	MARIA ELENA		UNIVERSIDAD DE VIGO	DPTO. BIOLOGIA VEGETAL Y CIENCIA DEL SUELO	DPTO. BIOLOGIA VEGETAL Y CIENCIA DEL SUELO	01-01-09	31-12-11	MINECO	Spain
AGL2009-11310		CONSEQUENCES OF THE STOMATAL CONTROL OF TRANSPIRATION IN FRUIT TREES UNDER DEFICIT IRRIGATION DUE TO LIMITATIONS IMPOSED BY HYDRAULIC CONDUCTIVITY OF THE SYSTEM SOIL-PLANT AND THE HORMONAL SIGNALS FRO	FERTILIZING VALUE\SEWAGE SLUDGE\MANAGEMENT\APLICATION RATE\NIR\QICK ESTIMATION\NUTRIENT AVAILABILITY	BOTH SPECIES OBJECT OF STUDY IN THIS PROJECT PROPOSAL, OLIVE AND ALMOND, RESPOND WELL TO DEFICIT IRRIGATION, WHICH WILL BE A COMPULSORY PRACTICE IN AGRICULTURE IN THE NEAR FUTURE DUE TO THE SCARCITY OF WATER EXPECTED. ALTHOUGH THERE ARE MANY WORKS DEALING WITH THE MAIN MECHANISMS ALLOWING THESE SPECIES FOR SUCH A GOOD RESPONSE, WE ARE STILL FAR FROM UNDERSTANDING THEM ALL AS A WHOLE. ON THE OTHER HAND, THE VARIETY AND COMPLEXITY OF THESE MECHANISMS MAKE VERY INTERESTING THEIR INTEGRATION IN A MODEL WHERE THESE FACTORS INTERACT TO DETERMINE THE PLANT WATER USE. AMONG THESE FACTORS WE HIGHLIGHT IN THIS PROJECT THE HYDRAULIC LIMITATIONS IMPOSED BY BOTH SOIL AND PLANT; THE CHEMICAL SIGNALS FROM THE ROOTS LOCATED IN DRY SOIL; THE STOMATAL REGULATION OF TRANSPIRATION. CURRENTLY, THERE ARE SOME MODELS WHICH CONSIDER THE EFFECT OF EACH OF THESE FACTORS INDEPENDENTLY, BUT THERE ARE NOT MODELS FOCUSING ON AGRONOMICAL PURPOSES WHICH COMBINE ALL THE CITED FACTORS IN A MECHANISTIC AND INTEGRATIVE WAY. THESE MODELS WOULD BE ENORMOUSLY USEFUL IN ORCHARDS WITH LOCALIZED IRRIGATION, BECAUSE IN THESE SYSTEMS ONLY A FRACTION OF THE ROOT SYSTEM IS WETTED, AND	DIAZ ESPEJO	ANTONIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	01-01-10	31-12-12	MINECO	Spain
AGL2009-13105-C03-01		REMOTE SENSING METHODS WITH NARROW-BAND HYPERSPECTRAL AND THERMAL IMAGERY FOR MONITORING CROP PHYSIOLOGY	WATER STRESS\REMOTE SENSING\PLANT ECOPHYSIOLOGY\VINEYARDS\GRAPE QUALITY	THE PROPOSAL AIMS AT DEVELOPING NEW RESEARCH METHODS FOR PHOTOSYNTHETIC FUNCTIONING AND PHYSIOLOGY CONDITION ESTIMATION USING HYPERSPECTRAL AND THERMAL REMOTE SENSING IMAGERY COUPLED WITH RADIATIVE TRANSFER SIMULATION MODELS IN TWO IMPORTANT CASH CROPS FOR THE MEDITERRANEAN REGION, SUCH AS OLIVE AND VINEYARDS. TRADITIONAL SATELLITE REMOTE SENSING METHODS HAVE FAILED TO PROVIDE OPTIMUM SPECTRAL, SPATIAL AND TEMPORAL RESOLUTIONS TO ENABLE THE DETECTION OF WATER AND NUTRIENT STRESS IN VEGETATION, PARTICULARLY DUE TO THE SPECTRAL AND TEMPORAL LIMITATIONS OF THE CURRENT SATELLITE SENSORS. PHOTOSYNTHETIC FUNCTIONING THROUGH CHLOROPHYLL FLUORESCENCE DETECTION, PRI INDEX AS FUNCTION OF XANTHOPHYLL ABSORPTION, CHLOROPHYLL AND CAROTENOID PIGMENT CONCENTRATION AND LEAF BIOCHEMICAL ESTIMATION USING NARROW-BAND HYPERSPECTRAL IMAGING SENSORS, AND VEGETATION SURFACE TEMPERATURE DETECTION WITH THERMAL IMAGING SENSORS WILL ADVANCE CURRENT RESEARCH APPROACHES FOR PHOTOSYNTHESIS, CROP PHYSIOLOGY AND DISEASE DETECTION IN THE CONTEXT OF PRECISION AGRICULTURE. MOREOVER, THIS PROJECT IS CONNECTED WITH CURRENT EFFORTS BY NASA (USA), EUROPEAN SPACE AGENCY, ESA (EUROPE), CSIRO (AUSTRALIA) AND CSA (CANADA), AMONG OTHER SPACE AGENCIES, TO DEVELOP SUCCESSFUL METHODS FOR GLOBAL VEGETATION	ZARCO TEJADA	PABLO J.		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. DE AGRONOMIA	INSTITUTO DE AGRICULTURA SOSTENIBLE (IAS)	01-01-10	31-12-12	MINECO	Spain

AGL2009-08353		LAND-CLIMATE INTERACTION IMPACT OF SOIL EROSION AND WATER QUALITY AT CATCHMENT SCALE IN A NE SPAIN DO VINEYARD REGION	SALINE WETLANDS\SOILS\VEGETATION\HALOPHYTES\REMOTE SENSING	THE AIM OF THE PROJECT IS TO ANALYSE THE IMPACT OF LAND-CLIMATE INTERACTION IN SOIL EROSION AND WATER QUALITY, AS WELL AS THE EFFECTS IN CROP VARIABILITY, IN A REFERENT AGRICULTURAL AREA WITH VINEYARDS AS MAIN CROP LOCATED IN NE SPAIN. THE PROJECT INTENDS TO INTEGRATE THE KNOWLEDGE AND EXPERIENCE OF THE RESEARCH GROUP ON LAND DEGRADATION BY EROSION PROCESSES, LAND USE CHANGE AND CLIMATE VARIABILITY IN VINEYARD LANDS, MAINLY AT FIELD SCALE, AND BRING IT TO MODEL THEIR INTERACTIONS AT CATCHMENT SCALE, TO ASSESS THE EFFECTS ON SOIL EROSION, DRAINAGE WATER QUALITY AND CROP VARIABILITY. THE STUDY AREA, LOCATED IN THE DO PENEDES (CATALONIA, NE SPAIN), IS SENSIBLE TO BOTH SOIL DEGRADATION PROCESSES BY RUNOFF AND CLIMATE CHANGE, WITH A POTENTIAL INCREASE OF EXTREME EVENTS, WHICH ARE RESPONSIBLE FOR HIGHER EROSION RATES AND FOR DIFFUSE POLLUTION OUT OF THE PLOTS, AFFECTING THE SUSTAINABILITY OF THE VINEYARDS IN THE MID TERM. IN ADDITION, A PRELIMINARY ANALYSIS OF CLIMATE EFFECTS IN THIS STUDY AREA POINTS OUT THAT, AS IN OTHER VINEYARD AREAS AROUND THE WORD, VINES MAY BE AFFECTED BY CLIMATE CHANGE AND NEW ADAPTATION MEASURES WILL BE NEEDED. THE PURPOSE OF THIS PROJECT IS TO DEEP IN THE EFFECTS OF CLIMATE, SOIL CHARACTERISTICS AND MANAGEMENT PRACTICES, UNDER A CLIMATE CHANGE SCENARIO, ANALYSING SOIL AND NUTRIENT LOSSES IN A SMALL CATCHMENT. THE SOIL AND WATER ASSESSMENT TOOL (SWAT) WILL BE USED TO MODEL THESE EFFECTS AT	RAMOS MARTIN	MARIA CONCEPCION		UNIVERSIDAD DE LLEIDA	DPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	DPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	01-01-10	30-09-13	MINECO	Spain
AGL2009-08931		SOILS, VEGETATION AND REMOTE SENSING OF SALINE WETLANDS IN THEIR AGRICULTURAL ENVIRONMENT	DEFICIT IRRIGATION\OLIVE\ALMOND\HYDRAULIC CONDUCTIVITY\ABA\PHOTOSYNTHESIS LIMITATIONS\MESOPHYLL CONDUCTANCE\STOMATAL CONDUCTANCE\YIELD\FRUIT QUALITY	AGRICULTURE IS URGED FOR PRODUCTION, BUT ALSO FOR SUSTAINABILITY AND FOR PRESERVATION OF ENVIRONMENT, INCLUDING VALUABLE SITES CONCERNED BY EUROPEAN DIRECTIVES. MANY COUNTRIES HAVE ACTIVATED POLICIES TO STOP THE DEGRADATION OF WETLANDS, TO MANAGE THE ADJACENT AGRICULTURAL LANDS, AND TO PUT UNDER LEGAL PROTECTION THE INTERFACE WITH SALINE WETLANDS. SALINE WETLANDS ARE FREQUENT IN MANY DEVELOPING ARID COUNTRIES, WHERE THEIR DESTRUCTION OR DEGRADATION CAN GO UNNOTICED. THIS PROJECT WILL CONTINUE PREVIOUS RESEARCHES OF OUR GROUP, AND WILL ENLARGE OUR SCOPE TO HEAVILY DISTURBED SALINE WETLANDS IN THE CENTRAL EBRO VALLEY, SPAIN, BY SEVERAL KINDS OF HUMAN INTERVENTIONS. WE WILL MAP HABITATS, FLORA AND VEGETATION AT SCALE ≥ 1:10000 IN SALINE WETLANDS. THESE MAPS WILL BE RELATED TO INFORMATION FROM SOIL PROSPECTIONS IN THE SELECTED WETLANDS BASINS. OUR METHODOLOGY FOR DISCRIMINATING SOILS AND FACIES ¿A CONCEPT DEFINED IN OUR PAST PUBLICATIONS¿ WILL BE APPLIED TO THE WETLANDS TO BE INCORPORATED IN THE FRAMEWORK OF THIS PROJECT. WE WILL CHECK IF OUR METHODS WORK ON WETLANDS SHOWING HABITAT SUBSTITUTION BECAUSE OF THE WATER FLOWS FROM CONTERMINOUS IRRIGATED LANDS. THIS ENLARGED SCENARIO WILL ALLOW US TO DEVELOP THE ADAPTATIONS IN THE REMOTE SENSING TECHNIQUES BASED ON SYNTHETIC APERTURE RADAR (SAR), VISIBLE AND INFRA-RED SPECTRA. OBJECTIVES: 1. TO MAP HABITATS, FLORA, AND VEGETATION OF THE	HERRERO ISERN	JUAN		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION EXPERIMENTAL DE AULA DEI (EEAD-CSIC)	ESTACION EXPERIMENTAL DE AULA DEI (EEAD-CSIC)	01-01-10	31-12-12	MINECO	Spain
AGL2009-12371-C02-01		AGRONOMIC MANAGEMENT OF SEWAGE SLUDGE USING NEAR INFRARED SPECTROSCOPY (NIRS)	CARBON FILTER\SOIL FLUSING\HEAVY METALS\SOIL REMEDIATION	THE OPTIMIZATION OF THE AGRONOMIC MANAGEMENT OF SEWAGE SLUDGE IS AN URGENT NECESSITY DUE TO ITS NATURE, COMPOSITION AND GREAT PRODUCTION. THE ADDITION OF SEWAGE SLUDGE INTO AGRICULTURAL SOILS HAS ASSOCIATED SEVERAL AGRONOMIC, ECONOMIC AND ENVIRONMENTAL BENEFITS, PROVIDED THAT THIS APPLICATION BE CARRIED OUT BASED ON SCIENTIFIC-TECHNICAL CRITERIA THAT MINIMISE ENVIRONMENTAL RISKS, SUCH AS THE INPUT OF HEAVY METALS INTO THE AGRICULTURAL SYSTEM, LEACHING OF SALTS, ETC. HOWEVER, THE ADDITION OF SEWAGE SLUDGE INTO THE SOIL IS OFTEN CARRIED OUT WITHOUT CONSIDERING SCIENTIFIC, AGRONOMIC OR HOMOGENOUS CRITERIA. EVEN IN THE BEST SITUATION, THE DECISION OUTLINE IN WHICH THE APPLICATION AND THE AGRONOMIC DOSAGE ARE BASED CANNOT BE VERY ACCURATE AND THEN, THE LACK OF A SUITABLE ADJUSTMENT OF THIS APPLICATION PRODUCES A LACK IN THE FERTILISING EFFICIENCY AND SIGNIFICANT IMPACTS IN THE ENVIRONMENT. THE OPTIMIZATION OF THE APPLICATION IMPLIES KNOWING: A) THE SPECIFIC CHARACTERISTICS OF SEWAGE SLUDGE IN ORDER TO EVALUATE THE INPUT OF NUTRIENTS AND TOXIC ELEMENTS IN THE RECEIVING ENVIRONMENT; B) THE MINERALIZATION DYNAMICS OF THIS BIOSOLID IN EACH RECEIVING SOIL. THE AVAILABILITY OF THIS INFORMATION IS ALMOST IMPOSSIBLE FOR FARMERS AND RESIDUE MANAGERS, DUE TO THE TIME AND COST THAT IMPLY ITS ACHIEVEMENT, AS WELL AS THE INFINITE NUMBER OF SEWAGE SLUDGE-SOIL COMBINATIONS THAT ARE POSSIBLE	MORAL HERRERO	RAUL		UNIVERSIDAD MIGUEL HERNANDEZ DE ELCHE	SECCION DEP. AGROQUIMICA Y MEDIO AMBIENTE (EPSO)	DPTO. AGROQUIMICA Y MEDIO AMBIENTE	01-01-10	30-06-13	MINECO	Spain

AGL2009-12897-C02-02		AGRONOMICAL STRATEGIES TO OPTIMIZE N USE EFFICIENCY OF SPRINKLER IRRIGATED MAIZE	REMOTE SENSING\HYPERSPECTRAL\THERMAL\RADIATIVE TRANSFER\STRESS DETECTION\FLUORESCENCE	HIGH YIELDING MAIZE IN THE SPANISH AGRICULTURAL SYSTEMS RELIES, IN ADITTION TO WATER, ON SATISFACTORY N AVAILABILITY. BUT EXCESSIVE APPLICATIONS OF N IN AGRICULTURAL SYSTEMS PRODUCE CONTAMINATION OF WATER AND ATMOSPHERE AND REDUCE FARMS PROFITABILITY. THESE TWO POINTS OF VIEW CONVERGE TOWARDS THE DEVELOPMENT OF MANAGEMENT PRACTICES TO INCREASE THE EFFICIENCY IN THE USE OF N BY THE CROPS, I.E., INCREASING FARM BENEFITS AND MINIMIZING ENVIRONMENTAL IMPACTS. SEVERAL EUROPEAN DIRECTIVES ARE RELATED TO THE CONTAMINATION DERIVED N FERTILIZATION, AS THE DIRECTIVE CONCERNING THE PROTECTION OF WATERS AGAINST POLLUTION CAUSED BY NITRATES FROM AGRICULTURAL SOURCES (91/676/EEC), THE WATER FRAMEWORK DIRECTIVE (2000/60/EC) AND THE DIRECTIVE ON EMISSION CEILINGS FOR ATMOSPHERIC POLLUTANTS, THAT NEED TO BE ADDRESSED IN DEPTH. IN ADDITION, THE REFORM OF THE EUROPEAN AGRICULTURAL POLICY (CAP) WILL IMPROVE INTEGRATION OF ENVIRONMENTAL OBJECTIVES WITH THE AIM TO PRESERVE THE ENVIRONMENT AND EUROPEAN RURAL HERITAGE THROUGH AGRI-ENVIRONMENTAL MEASURES. THE WORK FOCUS IN FERTIGATION OF SPRINKLER IRRIGATED MAIZE DUE TO THE CHANGES FROM SURFACE TO SPRINKLER IRRIGATION IN THE LAST YEARS, AND THE EXPECTED FUTURE INCREASED OF SPRINKLER IRRIGATED SYSTEMS. THE MAIN OBJECTIVES OF THE PROJECT ARE: OBJECTIVE 1. TO COMPARE STRATEGIES OF FERTIGATION	ISLA CLIMENTE	RAMON		CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	01-01-10	31-12-12	MINECO	Spain
AGL2009-13124		TECHNIQUES FOR MEASUREING WATER BALANCE IN ENERGY CROPS: LYSIMETRY, REMOTE SENSING AND MODELLING	SAMPLE TREATMENT\MIP\MSPD\HPLC\ANTIBIOTIC\ESTROGENS\AZOIC COLORANTS\TAP WATER\FOODS	THIS PROJECT FITS INTO THE FRAMEWORK OF A GROUP OF ACTIONS ALREADY CARRIED OUT OR IN THE PROCESS OF BEING CONDUCTED. ALL OF THEM TEND TO OPTIMISE THE MANAGEMENT OF GROUNDWATER RESOURCES, SUCH AS THE AQUIFER 08.29 MANCHA ORIENTAL ON THE JUCAR RIVER BASIN. ALL ALSO AIM TO MAKE SOCIOECONOMIC AND ENVIRONMENTAL SUSTAINABILITY COMPATIBLE WITH EXPLOITATION. THE PURPOSE OF THE PROJECT IS TO GO DEEPLY INTO THE KNOWLEDGE OF WATER REQUIREMENTS FOR CROPS SUITABLE FOR THE PRODUCTION OF ENERGY (ENERGY CROPS) SUCH AS RAPE (BRASSICA NAPUS), SWEET SORGHUM (SORGHUM BICOLOR) AND OTHERS THROUGH LYSIMETRIC MEASURESMENTS, SATELITE IMAGING AND FIELD RADIOMETRY, AND TO INTEGRATE THE RESULTS INTO A MODEL ALLOWING THE GENERALIZATION OF THIS EXPERIMENTAL WORK. ENERGY CROPS ARE SEEN AS A VERY INTERESTING AGRICULTURAL ALTERNATIVE IN SEMIARID AREAS, GIVEN THEIR CAPACITY OF ADAPTATION TO SUCH CLIMATIC CONDITIONS AND ENVIRONMENTS. SPECIFICALLY, THE PROPOSED OBJECTIVES ARE: OBJECTIVE 1: DIRECT MEASUREMENT OF WATER REQUIREMENTS (OR EVAPOTRANSPIRATION) FOR CERTAIN ENERGY CROPS BY A WEIGHING LYSIMETERY IN A SEMIARID ENVIRONMENT. OBJECTIVE 2. ESTIMATION OF EVAPOTRANSPIRATION OF THESE CROPS BY DETERMINING CROP COEFFICIENT THROUGH FIELD RADIOMETRY AND REMOTE SENSING.	LOPEZ URREA	RAMON		FUNDACION PARA EL DESARROLLO DE CASTILLA-LA MANCHA	FUNDACION PARA EL DESARROLLO DE CASTILLA-LA MANCHA	FUNDACION PARA EL DESARROLLO DE CASTILLA-LA MANCHA	01-01-10	31-12-12	MINECO	Spain
AGL2010-21681-C03-01		SPRINKLER IRRIGATION: WATER APPLICATION, AGRONOMY AND RETURN FLOWS	WATER\ENERGY\SOSTEINABLE AGRICLTURE\SPRINKLER IRRIGATION\MODELLING.	SPANISH IRRIGATED AGRICULTURE IS FACING RELEVANT SUSTAINABILITY CHALLENGES: AGEING RURAL SOCIETIES, DECREASING ECONOMIC PROFITS AND MOUNTING PRESSURE ON WATER RESOURCES FROM THE QUANTITATIVE AND QUALITATIVE POINTS OF VIEW. SPRINKLER IRRIGATION IS CURRENTLY BEING INSTALLED IN PUBLIC AND PRIVATE MODERNIZATION PROJECTS AS A RESPONSE TO THESE AND OTHER CHALLENGES. THE PRESENT PROPOSAL AIMS AT DEVELOPING SCIENCE AND TECNOLOGY FOSTERING THE SUSTAINABILITY OF SOLID-SET AND CENTRE-PIVOT SPRINKLER IRRIGATION, FOCUSING ON THE EBRO BASIN AND THE EASTERN MANCHA AQUIFER. THE SCIENTIFIC OBJECTIVES OF THE PROPOSAL ARE: 1) TO DEVELOP COUPLED MODELS (HYDRAULICS, IRRIGATION SYSTEM AND CROP) FOR SPRINKLER IRRIGATED FIELDS, INCLUDING SOLID-SETS AND CENTRE-PIVOTS. A) DEVELOPING A MODEL FOR SOLID-SETS, SIMULATING SEQUENTIAL IRRIGATION OF THE DIFFERENT SHIFTS AND THE AGRONOMIC RESPONSES. B) DEVELOPING A MODEL FOR CENTRE-PIVOTS, SIMULATING TOWER MOVEMENT, WATER DISTRIBUTION AND AGRONOMIC RESPONSES. 2) TO ANALYSE THE AGRONOMIC RESPONSE OF SPECIFIC CROPS TO SPRINKLER IRRIGATION DURING THE IRRIGATION EVENT AND IN THE FULL CROP CYCLE. A) OPTIMISING SOLID-SET SPRINKLER IRRIGATION IN ALFALFA. B) PRODUCING MANAGEMENT STRATEGIES FOR CENTRE-PIVOT IRRIGATED POTATO. 3) TO DEVELOP OPTIMUM HYDRAULIC AND ENERGETIC DESIGN PROCEDURES FOR CENTRE-PIVOTS AND SOLID-SETS. 4) TO CHARACTERIZE AND MODEL THE ENVIRONMENTAL IMPACT OF SPRINKLER IRRIGATION ON WATER QUALITY.	ZAPATA RUIZ	VALVANERA (NERY)		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO SUELO Y AGUA	ESTACION EXPERIMENTAL DE AULA DEI (EEAD-CSIC)	01-01-11	31-12-13	MINECO	Spain

AGL2010-19201-C04-01		STRATEGIES OF MANAGEMENT OF DEFICIT IRRIGATION FOR OPTIMISING QUALITY AND HEALTHINESS OF THE EXTRA EARLY MATURING PEACH AND THE POMEGRANATE FRUITS.	FRESH-CUT\ANTIOXIDANT\HEALTH\ABIOTIC STRESS\POMEGRANATE\STONE FRUIT\TABLE GRAPE\DEFICIT IRRIGATION\GLOBAL QUALITY\NUTRITIONAL	THE MEDITERRANEAN AGROSYSTEMS ARE CHARACTERISED NOT ONLY BY THE ARIDITY OF THE CLIMATE, BUT ALSO BY THE SHORTAGE OF AVAILABLE WATER RESOURCES. DURING THE LAST YEARS, A GROWING COMPETITION HAS BEEN OBSERVED IN SPAIN FOR THE AVAILABILITY OF WATER DUE TO THE DEMAND FOR OTHER USES LIKE HUMAN AND INDUSTRIAL CONSUMPTION AND THE ENVIRONMENTAL AND RECREATIONAL USE. MOREOVER, THE CLIMATE CHANGE POINTS TO A FUTURE INCREASE IN THE EFFECTS OF THE WATER SHORTAGE WITH MORE FREQUENT AND SEVERE DROUGHTS. THIS SITUATION CAN IMPLY SIGNIFICANT ECONOMIC LOSSES AND AFFECT A HIGH PERCENTAGE OF THE POPULATION. THIS PROJECT STARTS FROM THE PREMISE THAT THE MEDITERRANEAN AGRICULTURAL SYSTEMS NEED TO ADDRESS THE NEED OF COPING WITH WATER SCARCITY AND FOR SUSTAINABLE RESOURCE MANAGEMENT REQUIRES A CHANGE IN POLICY FROM THE POINT OF VIEW OF DEMAND, WHICH MUST COME HAND IN HAND WITH TECHNOLOGICAL INNOVATION. AMONG THE STRATEGIES TO BE DEVELOPED INCLUDE THE USE OF PLANT MATERIALS RESISTANT TO DROUGHT OR THAT THEIR MOMENTS OF PEAK IRRIGATION REQUIREMENTS MAY NOT MATCH THE PERIODS OF MAXIMUM EVAPORATIVE DEMAND. MOREOVER, IT IS NECESSARY TO DEVELOP NEW AND PRECISE TOOLS BASED ON BIOLOGICAL AND PHYSICAL CRITERIA TO ACHIEVE MORE APPROPRIATE AND ACCURATE IRRIGATION MANAGEMENT	TORRECILLAS MELENDR	ARTURO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO DE RIEGO	CENTRO DE EDAFOLOGIA Y BIOLOGIA APLICADA DEL SEGURA (CEBAS)	01-01-11	31-12-13	MINECO	Spain
AGL2010-21681-C03-03		SPRINKLER IRRIGATION: WATER APPLICATION, AGRONOMY AND RETURN FLOWS	SUSTAINABLE DEVELOPMENT\LAND OWNERSHIP AND TENURE; LAND REFORM; \AGRICULTURAL POLICY; FOOD POLICY\WATER\VALUATION OF ENVIRONMENTAL EFFECTS\CLIMATE; NATURAL DISASTERS; GLOBAL WARMI\GOVERNMENT POLICY\LAND USE AND OTHER REGULATIONS\OPTIMIZATION TECHNIQUES; P	SPANISH IRRIGATED AGRICULTURE IS FACING RELEVANT SUSTAINABILITY CHALLENGES: AGEING RURAL SOCIETIES, DECREASING ECONOMIC PROFITS AND MOUNTING PRESSURE ON WATER RESOURCES FROM THE QUANTITATIVE AND QUALITATIVE POINTS OF VIEW. SPRINKLER IRRIGATION IS CURRENTLY BEING INSTALLED IN PUBLIC AND PRIVATE MODERNIZATION PROJECTS AS A RESPONSE TO THESE AND OTHER CHALLENGES. THE PRESENT PROPOSAL AIMS AT DEVELOPING SCIENCE AND TECNOLOGY FOSTERING THE SUSTAINABILITY OF SOLID-SET AND CENTRE-PIVOT SPRINKLER IRRIGATION, FOCUSING ON THE EBRO BASIN AND THE EASTERN MANCHA AQUIFER. THE SCIENTIFIC OBJECTIVES OF THE PROPOSAL ARE: 1)TO DEVELOP COUPLED MODELS (HYDRAULICS, IRRIGATION SYSTEM AND CROP) FOR SPRINKLER IRRIGATED FIELDS, INCLUDING SOLID-SETS AND CENTRE-PIVOTS. A)DEVELOPING A MODEL FOR SOLID-SETS, SIMULATING SEQUENTIAL IRRIGATION OF THE DIFFERENT SHIFTS AND THE AGRONOMIC RESPONSES. B)DEVELOPING A MODEL FOR CENTRE-PIVOTS, SIMULATING TOWER MOVEMENT, WATER DISTRIBUTION AND AGRONOMIC RESPONSES. 2)TO ANALYSE THE AGRONOMIC RESPONSE OF SPECIFIC CROPS TO SPRINKLER IRRIGATION DURING THE IRRIGATION EVENT AND IN THE FULL CROP CYCLE. A)OPTIMISING SOLID-SET SPRINKLER IRRIGATION IN ALFALFA. B)PRODUCING MANAGEMENT STRATEGIES FOR CENTRE-PIVOT IRRIGATED POTATO. 3)TO DEVELOP OPTIMUM HYDRAULIC AND ENERGETIC DESIGN PROCEDURES FOR CENTRE-PIVOTS AND SOLID-SETS. 4)TO CHARACTERIZE AND MODEL THE ENVIRONMENTAL IMPACT OF SPRINKLER IRRIGATION ON WATER QUALITY.	ISIDORO RAMIREZ	DANIEL		CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	CENTRO DE INVESTIGACION Y TECNOLOGIA AGROALIMENTARIA DE ARAGON (CITA)	01-01-11	31-12-13	MINECO	Spain
AGL2010-20766		MODELING THE TRANSPIRATION OF OLIVE AND ALMOND UNDER WATER DEFICIT CONDITIONS.		THE IRRIGATED AGRICULTURE OF SOUTHERN SPAIN HAS STILL THE POTENTIAL TO DEVELOP AND GENERATE EMPLOYMENT, BUT ONLY BANKING UPON THE NECESSARY WATER RESOURCES. THE CLIMATE CHANGE PERSPECTIVES ARE ENDANGERING THE FUTURE OF IRRIGATED FARMING IN SOUTHERN SPAIN, COMPELLING TO INCREASE THE AGRICULTURAL WATER PRODUCTIVITY. THIS GOAL CAN BE ACHIEVED IN TREE CROPS BY USING REGULATED DEFICIT IRRIGATION STRATEGIES, TOGETHER WITH THE SPREADING OF IRRIGATION SCHEDULING TECHNIQUES BASED ON THE PRECISE CALCULATION OF THE WATER BUDGET. UNFORTUNATELY, THE CONSUMPTIVE WATER USE OF TREE CROPS SUBMITTED TO WATER STRESS IS POORLY KNOWN, AND THE PROBLEM IS FURTHER COMPLICATED WHEN THE LOCALISED IRRIGATION GENERATES HETEROGENEOUS SOIL WETTING. WE PROPOSE HERE TO: A) DEVELOP A MODEL OF CANOPY CONDUCTANCE FOR OLIVE AND ALMOND, CAPABLE TO BE USED TO CALCULATE TRANSPIRATION UNDER VARIABLE WATER STRESS CONDITIONS; AND B) ADDRESS THE STILL UNRESOLVED ISSUE OF THE DISTRIBUTION OF THE TREE WATER UPTAKE BETWEEN TWO SOIL "COMPARTMENTS" DIFFERING IN WATER CONTENT, NAMELY THE VOLUME WETTED BY THE EMITTERS AND THE REST OF THE SOIL; AND C) INCORPORATE THE RESULTS OF A) AND B) INTO A PREVIOUSLY DEVELOPED MODEL OF TREE	TESTI	LUCA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. DE AGRONOMIA	INSTITUTO DE AGRICULTURA SOSTENIBLE (IAS)	01-01-11	31-12-13	MINECO	Spain

AGL2010-17553		EFFECTS OF TREATED WASTEWATER IRRIGATION ON CITRUS. ANALYSIS AND IMPROVEMENT OF WATER AND FERTILIZER USE EFFICIENCY UNDER DIFFERENT IRRIGATION STRATEGIES		TREATED WASTEWATER PLAYS A KEY ROLE AS A NEW WATER RESOURCE FOR IRRIGATION. ITS USE MAY BE A SOURCE OF NUTRIENTS FOR OUR CROPS, BUT ALSO MAY INVOLVE RISKS OF SALINIZATION AND SOIL POLLUTION. IN THIS SENSE, FROM AN AGRONOMIC STANDPOINT, THIS PROJECT PROPOSES TO DEEPEN THE KNOWLEDGE OF THE RESPONSE OF CITRUS TO IRRIGATION WITH WATER OF VARYING QUALITY, EVALUATING THE IMPACT ON THE PLANT (PHYSIOLOGY, PRODUCTION AND QUALITY AND SAFETY OF THE CROP), SOIL (ACCUMULATION OF SALTS AND NUTRIENT AVAILABILITY) AND ANALYZE FROM A HOLISTIC PERSPECTIVE, SUSTAINABILITY IN THE MEDIUM TO LONG TERM (APPLICATION OF A MODEL THAT PREDICTS THE ACCUMULATION OF SALTS IN THE SOIL DEPENDING ON THE IRRIGATION TREATMENT AND THE QUALITY OF WATER SUPPLIED). MOREOVER, IMPROVING THE QUALITY AND YIELD OF CROPS, AS WELL AS OPTIMIZATION OF SCARCE RESOURCES IN AGRICULTURE SUCH AS WATER, NEEDS FURTHER BASIC KNOWLEDGE OF THE PHYSIOLOGICAL MECHANISMS THAT ALLOW A SPECIES TO ACCLIMATIZE AND ADAPT TO WATER DEFICIT. TO THIS END, FROM A PHYSIOLOGICAL STANDPOINT, WE WILL ANALYZE THE BEHAVIOR OF CITRUS PHOTOSYNTHESIS UNDER DIFFERENT IRRIGATION CONDITIONS AND QUALITY, STUDYING IN	NICOLAS NICOLAS	EMILIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	OPTO DE RIEGO	CENTRO DE EDAFOLOGIA Y BIOLOGIA APLICADA DEL SEGURA (CEBAS)	01-01-11	31-12-13	MINECO	Spain
AGL2010-19201-C04-02		INFLUENCE OF DEFICIT IRRIGATION ON THE POSTHARVEST QUALITY OF THE WHOLE AND THE MINIMALLY FRESH PROCESSED PRODUCT	DEFICIT IRRIGATION\OLIVE TREE\FRUIT QUALITY\OIL QUALITY\CARBON SEQUETRATION	SPAIN IS IMMERSED IN A DROUGHT SITUATION, MANIFESTED MAINLY IN THE MEDITERRANEAN AREA. THE ORCHARDS OF THESE SEMI-ARID AREAS SHOULD BE DIRECTED TO THE USE OF PLANT MATERIALS LESS DEMANDING OF WATER AND RESISTANT TO ENVIRONMENTAL STRESSES, AND USING IRRIGATION TECHNIQUES SUCH AS DEFICIT IRRIGATION (DRC) OR PARTIAL ROOT DRYING (PRD), WHICH CONTRIBUTE TO SUBSTANTIAL WATER SAVINGS WITH COST-EFFECTIVE AND HIGH QUALITY PRODUCTION AND FOOD TRAITS. LOWERING THE WATER CONSUMPTION THROUGH SUCH IRRIGATION METHODS COULD ALSO CONTRIBUTE POSITIVELY TO NET CARBON BALANCE. BOTH FACTORS (WATER USE AND CARBON BALANCE) CONTRIBUTE TO THE PRODUCTION OF FRUIT IN A MORE ECO-EFFICIENT AND ACCOUNTABLE WAY. CURRENTLY CONSUMERS DEMAND, APART FROM FRUITS WITH GOOD PHYSICAL CHARACTERISTICS, QUALITY FRUIT WITH GOOD SENSORIAL, MICROBIOLOGICAL AND NUTRITIONAL. HOWEVER, LITTLE INFORMATION EXISTS ON THE INFLUENCE OF WATER DEFICIT ON THE QUALITY OF HORTICULTURAL PRODUCE DURING POSTHARVEST, NOR ON THEIR INFLUENCE WHEN THEY ARE PROCESSED INTO PRODUCTS AS MINIMALLY FRESH PROCESSED (MFP) AND THE SHELF-LIFE. IT IS ALSO KNOWN THAT DIFFERENT ENVIRONMENTAL FACTORS (SUCH AS DROUGHT) CAN	AGUAYO GIMENEZ	ENCARNA		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-01-11	31-12-13	MINECO	Spain
AGL2010-21681-C03-02		SPRINKLER IRRIGATION: WATER APPLICATION, AGRONOMY AND RETURN FLOWS	SPRINKLE IRRIGATION\CONSUMPTIVE USE\IRRIGATION EFFICIENCY\IRRIGATION RETURN FLOW\EXPORT LOADS\MODELLING\SALINITY\CIRFLE\APEX	SPANISH IRRIGATED AGRICULTURE IS FACING RELEVANT SUSTAINABILITY CHALLENGES: AGEING RURAL SOCIETIES, DECREASING ECONOMIC PROFITS AND MOUNTING PRESSURE ON WATER RESOURCES FROM THE QUANTITATIVE AND QUALITATIVE POINTS OF VIEW. SPRINKLER IRRIGATION IS CURRENTLY BEING INSTALLED IN PUBLIC AND PRIVATE MODERNIZATION PROJECTS AS A RESPONSE TO THESE AND OTHER CHALLENGES. THE PRESENT PROPOSAL AIMS AT DEVELOPING SCIENCE AND TECNOLOGY FOSTERING THE SUSTAINABILITY OF SOLID-SET AND CENTRE-PIVOT SPRINKLER IRRIGATION, FOCUSING ON THE EBRO BASIN AND THE EASTERN MANCHA. THE SCIENTIFIC OBJECTIVES OF THE PROPOSAL ARE: 1)TO DEVELOP COUPLED MODELS (HYDRAULICS, IRRIGATION SYSTEM AND CROP) FOR SPRINKLER IRRIGATED FIELDS, INCLUDING SOLID-SETS AND CENTRE-PIVOTS. A)DEVELOPING A MODEL FOR SOLID-SETS, SIMULATING SEQUENTIAL IRRIGATION OF THE DIFFERENT SHIFTS AND THE AGRONOMIC RESPONSES. B)DEVELOPING A MODEL FOR CENTRE-PIVOTS, SIMULATING TOWER MOVEMENT, WATER DISTRIBUTION AND AGRONOMIC RESPONSES. 2)TO ANALYSE THE AGRONOMIC RESPONSE OF SPECIFIC CROPS TO SPRINKLER IRRIGATION DURING THE IRRIGATION EVENT AND IN THE FULL CROP CYCLE. A)OPTIMISING SOLID-SET SPRINKLER IRRIGATION IN ALFALFA. B)PRODUCING MANAGEMENT STRATEGIES FOR CENTRE-PIVOT IRRIGATED POTATO. 3)TO DEVELOP OPTIMUM HYDRAULIC AND ENERGETIC DESIGN PROCEDURES FOR CENTRE-PIVOTS AND SOLID-SETS. 4)TO CHARACTERIZE AND MODEL THE ENVIRONMENTAL IMPACT OF SPRINKLER IRRIGATION ON WATER QUALITY.	ORTEGA ALVAREZ	JOSE FERNANDO		UNIVERSIDAD DE CASTILLA-LA MANCHA	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	01-01-11	31-12-13	MINECO	Spain

AGL2010-14861		ROOT DYNAMICS STUDIES UNDER DIFFERENT DRIP IRRIGATION CONDITIONS		THE PROJECT AIMS TO OPTIMIZE THE USE OF WATER IN AGRICULTURE AND REDUCE 'WATER FOOTPRINT' ON THE BASIS OF THE PREVIOUS KNOWLEDGE OF THE APPLICANT RESEARCH TEAM REGARDING IRRIGATION AND FRUIT ROOT SYSTEM IN PREVIOUS PROJECTS (AGL2006-12914-C02-01, AGL2009-06981). IT IS EXPECTED TO DEVELOP PROTOCOLS FOR THE MANAGEMENT OF THE IRRIGATION THROUGH THE INTEGRATION OF INFORMATION OF THE ROOT DYNAMICS AND WATER STATUS IN THE CONTINUOUS SOIL-PLANT-ATMOSPHERE UNDER DIFFERENT DEFICIT IRRIGATION AND CROP MANAGEMENT CONDITIONS. IN SEMI-ARID AREAS AS THE REGION OF MURCIA, WITH INCREASINGLY WATER RESOURCES SHORTAGE, THE IMPLEMENTATION OF THE LOW MAINTENANCE IRRIGATION WILL ENABLE SAVINGS IN WATER, ENERGY AND LABOR, DECREASING THE IMPACT OF IRRIGATION, AS DEMAND A SUSTAINABLE AGRICULTURE, FORMING THE SO-CALLED "NEW CULTURE OF WATER". TO DO THIS, IN FRUIT TREE PLANTATIONS (ADULT PEACH TREES AND YOUNG NECTARINE TREES) UNDER DRIP IRRIGATION, IT WILL BE STUDIED SOIL WATER-ROOTS INTERACTION FOR PRECISELY DEFINE THE VARIATIONS OF SOIL WATER CONTENT AS A FUNCTION OF EVAPORATION AND ROOT ABSORPTION PROCESSES UNDER DIFFERENT DEFICIT IRRIGATION AND CROP MANAGEMENT (CROP LOAD) CONDITIONS. IN ADDITION, VEGETATIVE AND PRODUCTIVE	RUIZ SANCHEZ	MARIA DEL CARMEN		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO DE RIEGO	CENTRO DE EDAFOLOGIA Y BIOLOGIA APLICADA DEL SEGURA (CEBAS)	01-01-11	31-12-13	MINECO	Spain
AGL2010-15976		ASSESSMENT OF SOIL AND WATER CONTAMINATION BY PESTICIDES IN VINEYARD AREAS OF LA RIOJA: DIAGNOSIS AND DEVELOPMENT OF PHYSICOCHEMICAL STRATEGIES FOR PREVENTION AND/OR CONTROL		THE NEED TO ENSURE THE PRODUCTION OF CROPS OF SUFFICIENT QUALITY AND QUANTITY REQUIRES A LARGE CONSUMPTION OF PESTICIDES IN AGRICULTURAL PRACTICES. THIS CAUSES A GREAT ENVIRONMENTAL CONCERN BECAUSE THESE COMPOUNDS ARE TOXIC IN VARYING DEGREES AND THEIR PRESENCE IN SURFACE WATER AND GROUNDWATER IS BECOMING INCREASINGLY COMMON. AS A RESULT, THE EVALUATION OF SOIL AND WATER CONTAMINATION BY PESTICIDES IS OF GREAT INTEREST, ESPECIALLY IN REGIONS SUCH AS LA RIOJA, WHERE A LARGE PART OF ITS AREA IS DEVOTED TO AGRICULTURE AND PESTICIDE CONSUMPTION IS VERY HIGH, ESPECIALLY IN VINEYARD AREAS. FURTHERMORE THE RECOMMENDATIONS OF SOME EUROPEAN DIRECTIVES ADVISE TO ESTABLISH SPECIFIC MEASURES TO PREVENT CONTAMINATION OF SOIL AND TO LIMIT THE ACCESS OF POLLUTANTS INTO GROUNDWATER ESPECIALLY. ACCORDINGLY, THE PROJECT PROPOSES TO STUDY THE SPATIAL DISTRIBUTION AND TEMPORAL EVOLUTION OF PESTICIDES COMMONLY USED IN VINEYARD AREAS OF LA RIOJA IN SOILS AND WATER TO OBTAIN AN ENVIRONMENTAL DIAGNOSTIC RELATIVE TO CONTAMINATION BY THESE COMPOUNDS AND ESTABLISH A RELATIONSHIP WITH THE PROCESSES THAT INFLUENCE THE DYNAMICS OF PESTICIDES IN SOILS AND THE FACTORS THAT CONTROL THEM. MOREOVER, PHYSICOCHEMICAL METHODS	SANCHEZ MARTIN	MARIA JESUS		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASA)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASA)	01-01-11	31-12-13	MINECO	Spain
AGL2010-16575		ENERGY CROPS OF WOODY SPECIES: GROWTH, WATER USE AND MINERAL NUTRIENTS	SOIL MOISTURE\REMOTE SENSING\MICROWAVES\HYDROLOGICAL MODELLING\SOIL MOISTURE INDEX	THE ENERGY DEFICIT IN THE UE, THE POLLUTANTS AND CO2 EMISSIONS BY THE CONSUMPTION OF FOSSIL FUELS, THE ABANDONMENT OF MARGINAL FARMLANDS AND RURAL DEPOPULATION CAN GIVE A BOOST TO THE CULTIVATION OF LINGO-CELLULOSIC BIOMASS FOR USING AS A RENEWABLE ENERGY SOURCE. HOWEVER, THE WATER CONSTRAINTS OF MEDITERRANEAN CLIMATE AND THE VULNERABILITY OF THE CULTIVATED SOILS IN IT MIGHT LEAD TO IRREVERSIBLE DEGRADATION PROCESSES IN THESE ECOSYSTEMS. IT IS THEREFORE NECESSARY TO CONDUCT STUDIES LEADING TO DETERMINE WHICH SPECIES, AND WITH WHAT ECONOMIC AND ENVIRONMENTAL COSTS, CAN BE IMPLANTED IN DIFFERENT SOIL AND CLIMATE CONDITIONS. THE FEW PREVIOUS STUDIES WITH WOODY SPECIES SUITABLE FOR GROWING IN TEMPERATE ZONES HAVE BEEN CARRIED OUT MAINLY IN NORTH AMERICA AND CENTRAL EUROPE, FOCUSING PRIMARILY ON THEIR PRODUCTION RATE AND THEIR ADAPTATION TO THE ENVIRONMENT. BUT STUDIES ARE STILL LUCKING IN THE MEDITERRANEAN AREAS, AND ALSO IT IS NECESSARY TO DEEPEN THE KNOWLEDGE OF WATER CONSUMPTION AND NUTRIENT CYCLING IN THE SOIL-PLANT SYSTEM, TO ENSURE THE SUSTAINABILITY OF CULTIVATION AND ENVIRONMENTAL CONSERVATION. ALSO, FOR ACQUIRING	FERNANDEZ MARTINEZ	MANUEL		UNIVERSIDAD DE HUELVA	DPTO. CIENCIAS AGROFORESTALES	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-11	31-12-13	MINECO	Spain

AGL2010-19201-C04-04		SUSTAINABLE MANAGEMENT OF IRRIGATION WATER IN EXTRA EARLY NECTARINE AND TABLE GRAPE. IMPROVEMENT OF WATER PRODUCTIVITY AND CROP QUALITY	GROUNDWATER\SOLAR PHOTOCATALYSIS\HERBICIDE LEACHING\SOIL	IT IS WELL KNOWN THAT MEDITERRANEAN AGROSYSTEMS HAVE THE CHALLENGE TO COEXIST WITH WATER SCARCITY, AND IN SOME OCCASIONS, WITH LOW WATER QUALITY. THUS, THE SUSTAINABLE IRRIGATION MANAGEMENT REQUIRES A CHANGE IN MENTALITY IN TERMS OF DEMAND, AND THIS CHANGE MUST NECESSARILY COME FROM TECHNOLOGICAL INNOVATION. AMONGST THE STRATEGIES TO DEVELOP WITH REGARDS OF THIS COEXISTENCE, WE HAVE TO HIGHLIGHT THE USE OF CROPS WITH LOW WATER REQUIREMENTS, OR THOSE WITH HIGH ECONOMICAL VALUE WHOSE MAXIMUM WATER REQUIREMENTS PERIODS ARE NOT COINCIDENT WITH PERIODS OF MAXIMUM CLIMATIC DEMAND. INDEPENDENTLY OF THE POTENTIAL ADVANTAGES OF DEFICIT IRRIGATION, IT IS NECESSARY TO DEAL WITH ASPECTS RELATED TO SUSTAINABILITY BECAUSE, APART FROM REDUCING THE USE OF A LIMITED RESOURCE, IT COULD POSITIVELY CONTRIBUTE TO THE NET CARBON BALANCE. BOTH FACTS COULD CONTRIBUTE TO THE FRUIT PRODUCTION IN A MORE ECO-EFFICIENT AND RESPONSIBLE WAY. IN ADDITION, NOWADAYS, THERE IS A CLEAR AND GROWING TREND BY THE CONSUMERS TO DEMAND FRUITS WITH GOOD PHYSICAL CHARACTERISTICS AND OPTIMUM SENSORY, MICROBIOLOGICAL AND NUTRITIONAL QUALITIES. ACCORDING TO THIS, THE MAIN OBJECTIVE OF THIS SUBPROJECT IS THE CREATION OF NEW IRRIGATION STRATEGIES TENDING TO SUSTAINABLE USE AND MANAGEMENT OF IRRIGATION WATER IN TWO WOODY CROPS WITH HIGH ECONOMIC VALUE, EXTRA EARLY NECTARINE, 'VIOWHITE' VARIETY, AND TABLE GRAPEVINE	PEREZ PASTOR	ALEJANDRO		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	DPTO. PRODUCCION VEGETAL	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-01-11	31-12-13	MINECO	Spain
AGL2010-17634		HYDROLOGICAL DROUGHT INSURANCE FOR IRRIGATION, AN ADAPTATION TOOL FOR CLIMATE CHANGE	DEFICIT IRRIGATION\FRUIT QUALITY\PEACH TREE\POMEGRANATE TREE	DROUGHT IS ONE OF THE MAIN RISK FACTORS IN MEDITERRANEAN EUROPE. AND YET, CLIMATE CHANGE PREDICTS THE SEVERITY AND FREQUENCY OF DROUGHTS IN THE REGION. ONE OF THE MAIN ADAPTATION TOOLS TO CLIMATE CHANGE FOR ARID ZONES IS IRRIGATION. HOWEVER, NOWADAYS DROUGHT DOES NOT ONLY AFFECT RAINFED AGRICULTURE, BUT SOMETIMES IT CAN EVEN AFFECT THE AVAILABILITY OF WATER FOR IRRIGATION, EXPOSING IRRIGATED PRODUCTIONS TO SCARCITY RISK WITH STILL MORE IMPORTANT ECONOMIC LOSSES THAN IN THE CASE OF NON-IRRIGATED. FURTHERMORE, IT CAN BE EXPECTED THAT THE RISK OF LACK OF WATER FOR IRRIGATION MAY INCREASE IN THE FUTURE DUE TO CLIMATE CHANGE. AGRICULTURAL INSURANCES IN SPAIN ARE VERY DEVELOPED, WITH ALMOST ALL THE MAIN RISKS AFFECTING AGRICULTURAL PRODUCTION BEING COVERED, INCLUDING DROUGHT FOR SOME RAIN-FED CROPS. ALL THESE FACTS MAKE EVIDENT THE NEED FOR AN INSURANCE POLICY TO COVER THE RISK OF WATER SCARCITY, AS IT HAS ALRADY BEEN REQUESTED BY THE AGRICULTURAL SECTOR. THIS INSURANCE POLICY WOULD CONSTITUTE A MEANS OF ADAPTATION TO CLIMATE CHANGE FOR IRRIGATED AGRICULTURE, AND AT THE SAME TIME IT WOULD PERMIT INVESTMENT IN TRANSFORMATION INTO IRRIGATION AS MEANS OF ADAPTATION FOR DRYLAND. THE AIM OF THE PROJECT IS TO CREATE THE BASIS FOR THE DEVELOPMENT OF (AGRICULTURAL, BUT NOT ONLY)	BIELZA DIAZ-CANEJA	MARIA		UNIVERSIDAD POLITECNICA DE MADRID	DPTO. ECONOMIA Y CIENCIAS SOCIALES AGRARIAS	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-01-11	31-12-13	MINECO	Spain
AGL2010-19201-C04-03		STRATEGIES OF REGULATED DEFICIT IRRIGATION FOR OPTIMISING THE PRODUCTION IN QUALITY AND QUANTITY OF TABLE AND OIL OLIVE	DEFICIT IRRIGATION\SENSORS\FRUIT QUALITY\NECTARINE TREE AND TABLE GRAPEVINE	THIS SUBPROJECT CONSIDERS THAT THE MEDITERRANEAN AGROSYSTEMS MUST FACE THE NEED TO LIVE WITH THE WATER SCARCITY, AND THAT FOR THE SUSTAINABLE MANAGEMENT OF THIS RESOURCE A CHANGE OF POLICY IS NEEDED FROM THE DEMAND POINT OF VIEW; A CHANGE THAT MUST COME FROM THE TECHNOLOGICAL INNOVATION. AMONG THE STRATEGIES THAT MUST BE DEVELOPED WE CAN HIGHLIGHT THE USE OF DROUGHT RESISTANT PLANT MATERIALS WITH LOW WATER NEEDS AS OLIVE TREES. MOREOVER, NEW AND PRECISE TOOLS FOR ACCESSING BETTER ESTIMATION METHODS OF CROPS WATER REQUIREMENTS ARE NEEDED, AS WELL AS BIOLOGICAL AND PHYSICAL CRITERIA FOR OBTAINING MORE ADEQUATE AND PRECISE IRRIGATION MANAGEMENT PRACTICES. REGARDLESS THE POTENTIAL ADVANTAGES OF THE DEFICIT IRRIGATION, IT IS NECESSARY TO DEAL WITH ASPECTS RELATED TO SUSTAINABILITY BECAUSE, APART FROM REDUCING THE USE OF A LIMITED RESOURCE, IT COULD POSITIVELY CONTRIBUTE TO THE NET CARBON BALANCE. BOTH FACTS COULD CONTRIBUTE TO THE OLIVE FRUIT AND OIL PRODUCTION IN A MORE ECO-EFFICIENT AND RESPONSIBLE WAY. FOR ALL THESE REASONS, THIS SUBPROJECT AIMS TO USE NEW CRITERIA OF WATER MANAGEMENT IN OLIVE TREE IN ORDER TO REDUCE THE WATER USAGE AND TO IMPROVE THE GLOBAL QUALITY OF THE OBTAINED PRODUCT AS TABLE OLIVE AND OIL. THEREFORE, THE DURATION AND INTENSITY	MORENO LUCAS	FELIX		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	01-01-11	31-12-13	MINECO	Spain

AGL2010-15001		SHADE-COVERS ON WATER RESERVOIRS FOR IRRIGATION: CHARACTERISATION AND MODELLING OF EVAPORATION PROCESS AND EFFECTS ON WATER QUALITY		AGRICULTURAL WATER RESERVOIRS (AWRS) FOR IRRIGATION ARE REQUIRED FOR IRRIGATION IN ARID AND SEMI-ARID AREAS, WHERE WATER RESOURCES ARE OFTEN SCARCE AND NOT WELL DISTRIBUTED THROUGHOUT THE YEAR. IN LAST DECADE, AS A CONSEQUENCE OF THE IMPORTANT DEVELOPMENT OF IRRIGATED LANDS, NUMEROUS WATER STORAGES HAVE BEEN BUILT. THE OVERALL WATER BUFFER EFFECT PROVIDED BY AWRS DURING DROUGHT PERIODS IS SUBSTANTIALLY DECREASED BY THE EVAPORATION LOSSES, ESPECIALLY IN CLIMATES WITH HIGH SOLAR RADIATION AND HIGH VAPOUR PRESSURE DEFICIT. IN SOUTH-EASTERN SPAIN THE MAGNITUDE OF THE LOSSES CAN BE UP TO 8.5% OF THE TOTAL WATER ALLOTTED TO IRRIGATION AT REGIONAL SCALE. IN ORDER TO IMPROVE THE AWRS STORAGE EFFICIENCY, THE EVAPORATION LOSS NEEDS TO BE PREVENTED. DIFFERENT TECHNIQUES TO MITIGATE EVAPORATION HAVE BEEN PROPOSED. AMONG ALL THESE AVAILABLE TECHNIQUES, THE INSTALLATION OF POROUS SHADE-COVERS APPEARS TO BE THE MOST SUITABLE FOR SOUTH-EASTERN SPAIN CONDITIONS. THE CANDIDATE RESEARCH GROUP HAS LOOKED INTO THE PERFORMANCE OF SEVERAL COVER MATERIALS. SUBSTANTIAL DIFFERENCES IN THE EFFICIENCY TO REDUCE OF EVAPORATION WERE FOUND DEPENDING ON THE PHYSICAL AND OPTICAL PROPERTIES (REFLECTIVITY, ABSORBENCY AND TRANSMISSIVITY) OF THE MATERIAL. THESE PROPERTIES DETERMINE THE CLIMATE (EVAPORATION-DRIVING METEOROLOGICAL VARIABLES) BELOW THE COVER. BESIDES, SOME MATERIALS APPEAR TO INFLUENCE THE PROCESS OF CONDENSATION AT THE SURFACE OF THE COVER, SUCH AS BLACK POLYETHYLENE WHICH STRONGLY ENHANCE THE CONDENSATION OF	MARTINEZ ALVAREZ	VICTORIANO		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	DPTO DE INGENIERÍA DE ALIMENTOS Y DEL EQUIPAMIENTO	DPTO DE INGENIERÍA DE ALIMENTOS Y DEL EQUIPAMIENTO	01-01-11	31-12-13	MINECO	Spain
AGL2010-20458-C02-01		REMOVAL OF HERBICIDE RESIDUES IN GROUNDWATER THROUGH SOLAR PHOTOCATALYSIS		GROUNDWATER IS A TERM USED TO DENOTE ALL THE WATERS FOUND BENEATH GROUND SURFACE, AS A PART OF THE HYDROLOGICAL CYCLE. HOWEVER, OFTEN THIS DEFINITION IS RESERVED FOR THE TERM SUBSURFACE WATER, WHILE THE TERM GROUNDWATER IS ASSOCIATED PRIMARILY WITH THE PART OF THE WATER IN THE HYDROLOGICAL CYCLE THAT OCCURS ONLY IN THE ZONE OF SATURATION. THEY ARE ONE OF THE MAIN SUPPLY SOURCES FOR DOMESTIC USE AND WATERING IN MANY REGION OF SPAIN AND THE WORLD. IN SPAIN AROUND THE THIRD PART OF THE WATER USED IN THE CITIES AND THE INDUSTRY, AND THE FOURTH PART OF WHICH IS USED IN AGRICULTURE IS GROUNDWATER. IN MANY SITES WHERE THE PRECIPITATIONS ARE SCARCE AND IRREGULAR BUT THE CLIMATE IS VERY SUITABLE FOR THE AGRICULTURE, THEY CONSTITUTE A VITAL RESOURCE AND A GREAT SOURCE OF WEALTH, SINCE THEY ALLOW CULTIVATING PRODUCTS VERY APPRECIATED IN THE INTERNATIONAL MARKETS. NOWADAYS, THE USE OF PESTICIDES IS A COMMON PRACTICE IN AGRICULTURE WITH THE PURPOSE OF DIMINISHING THE LOSSES FOR PESTS AND DISEASES IN THE CROPS. HOWEVER, THEIR USE IMPLIES THE APPEARANCE OF OTHER PROBLEMS, SUCH AS THE PRESENCE OF RESIDUES OF THESE SUBSTANCES IN GROUNDWATER, AS A RESULT OF THEIR LIBERATION TO THE ENVIRONMENT. THIS WAY, IT IS	NAVARRO GARCIA	SIMON		UNIVERSIDAD DE MURCIA	DPTO. QUIMICA AGRICOLA, GEOLOGIA Y EDAFOLOGIA	FACULTAD DE QUIMICA	01-01-11	31-12-13	MINECO	Spain
AGL2011-30461-C02-01		MICROBIOLOGICAL RISKS IN RECLAIMED WATER AND FOOD, RELATED TO NOVEL VIRUSES IDENTIFIED BY DEEP SEQUENCING AND LEGIONELLA POTENTIALLY GROWING IN PROTOZOA	ADAPTATION\CLIMATE CHANGE\ECOPHYSIOLOGY\ECOLOGY\NUTRIENTS\PINUS\FROST RESISTANCE\DROUGHT RESISTANCE\REFORESTATION	WASTEWATER IS INCREASINGLY RECOGNIZED AS A KEY RESOURCE OF WATER AND NUTRIENTS. RECLAIMED WATER IS USED IN INDUSTRY, AQUIFER RECHARGE AND, FOR IRRIGATION OF LANDSCAPE AND VEGETABLE PRODUCTS FOR HUMAN CONSUMPTION. NEW VIRUSES AND EMERGENT PATHOGENIC BACTERIA HAVE RECENTLY BEEN DISCOVERED; HOWEVER, THE PUBLIC HEALTH RISK OF THESE PATHOGENS IN RECLAIMED WATERS AND FOOD PRODUCTS IS UNKNOWN. THE OVERALL AIM OF THE PROJECT IS TO EVALUATE NEW FOOD AND WATER-BORNE MICROBIOLOGICAL RISKS CHARACTERIZING NEW VIRUSES DETECTED IN URBAN SEWAGE AND EMERGING PATHOGENIC BACTERIA AND STUDYING THEIR POTENTIAL RE-GROWTH IN SEWAGE AND RECLAIMED WATER. THE STUDY WILL INTEGRATE DATA OF RISK ASSESSMENT ANALYSIS AND INDICATORS OF FAECAL POLLUTION TO DERIVE IMPROVED MICROBIOLOGICAL CONTROL MEASURES FOR FOOD AND RECLAIMED WATER. SPECIFIC SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES ARE: 1. IDENTIFICATION OF HUMAN VIRUSES EXCRETED BY THE POPULATION IN URBAN SEWAGE USING MASS SEQUENCING METHODS. THE LIST OF KNOWN VIRUSES PRESENT IN URBAN SEWAGE WILL BE EXPANDED BY USING METAGENOMIC ANALYSIS (AS PRELIMINARY DATA HAVE SHOWN) AND THE MOST SIGNIFICANT GROUPS OF VIRUSES EXCRETED WILL BE IDENTIFIED. VIRAL GENOMES WILL BE ANALYZED DIRECTLY FROM URBAN SEWAGE AND ALSO FROM FAECAL SAMPLES OF EXPERIMENTAL INOCULATIONS OF SEWAGE FROM AN AREA IN SPAIN IN RHESUS MONKEYS AT THE NIH, USA, FROM A PREVIOUS COLLABORATIVE STUDY. 2. EVALUATION OF THE EFFICIENCY OF REMOVAL OF	GIRONES LLOP	ROSINA		UNIVERSIDAD DE BARCELONA	DPTO. MICROBIOLOGIA	DPTO. MICROBIOLOGIA	01-01-12	31-12-14	MINECO	Spain

AGL2011-30498-C02-01		COUPLING LAND SURFACE ENERGY AND WATER BALANCE FROM REMOTE SENSING FOR MAPPING EVAPOTRANSPIRATION, WATER STRESS AND SOIL MOISTURE, CERESS	EVAPOTRANSPIRATION\REMOTE SENSING\SURFACE ENERGY BALANCE\WATER STRESS\SOIL MOISTURE	THE CERESS PROPOSAL ADDRESSES THE COUPLING OF REMOTE SENSING-DERIVED LAND SURFACE ENERGY BALANCE, SEB, AND THE [REMOTE SENSING] SATELLITE-ASSISTED WATER BALANCE, SAWB, FOR THE PURPOSE OF MAPPING EVAPOTRANSPIRATION (ET), SOIL MOISTURE, AND CANOPY WATER STRESS OVER TIME, AT HIGH SPATIAL AND TEMPORAL RESOLUTION (AROUND 1 HECTARE, 1 DAY). THE ENERGY BALANCE AND THE WATER BALANCE AT THE LAND SURFACE ARE LINKED THROUGH THE EVAPOTRANSPIRATION. THIS ALLOWS US TO COMBINE TWO COMPLETELY INDEPENDENT AND RELIABLE APPROACHES. BOTH APPROACHES HAVE CONCEPTUAL AND OPERATIONAL ADVANTAGES AND LIMITATIONS, THEREFORE, THE CHALLENGE IS TO INTEGRATE THEM IN A WAY THAT BENEFITS FROM THE ADVANTAGES AND MINIMIZES THE SHORTCOMINGS OF EACH OF THEM. THE COUPLING PROCEDURE ADDRESSES (A) THE INTERPOLATION ISSUE TO FILL THE GAPS BETWEEN AVAILABLE THERMAL AND OPTICAL SATELLITE IMAGES FOR A COMPLETE HIGH-RESOLUTION SPATIO-TEMPORAL ESTIMATION OF ET, (B) THE CANOPY WATER STRESS DETECTION, AS THE RATIO BETWEEN ACTUAL ET OF THE CANOPY, OBTAINED FROM THE SEB MODEL, AND ITS MAXIMUM TRANSPIRATION, DERIVED FROM REFLECTANCE-BASED CROP COEFFICIENT, AND (C) THE SOIL MOISTURE ESTIMATION. IMPROVED ACCURACY OF THE ESTIMATION OF THE WATER BALANCE COMPONENTS, IN PARTICULAR	CALERA BELMONTE	ALFONSO		UNIVERSIDAD DE CASTILLA-LA MANCHA	INSTITUTO DE DESARROLLO REGIONAL	INSTITUTO DE DESARROLLO REGIONAL	01-01-12	31-12-14	MINECO	Spain
AGL2011-24296		TOLERANCE AND ECOPHYSIOLOGICAL STRATEGIES OF IBERIAN PINES AT JUVENILE STAGES IN RESPONSE TO DROUGHT, LOW TEMPERATURE AND NUTRIENT AVAILABILITY		THE GENUS PINUS CONTAINS 111 SPECIES, SIX OF WHICH HAVE NATIVE POPULATIONS IN THE IBERIAN PENINSULA: PINUS HALEPENSIS, P. PINASTER, P. PINEA, P. NIGRA, P. SYLVESTRIS AND P. UNCINATA. THESE SPECIES FORM LARGE FORESTS THAT PROVIDE IMPORTANT ECOSYSTEM SERVICES AND HAVE A HIGH SOCIOECONOMIC AND CULTURAL VALUE. NATIVE POPULATIONS OF IBERIAN PINES SHOW AN IMPORTANT SPATIAL SEGREGATION THAT CORRELATES WITH RAINFALL, LOW WINTER TEMPERATURE AND SOIL PROPERTIES. FORESTRY AND ECOLOGICAL RESEARCH HAS MADE A CONSIDERABLE EFFORT TO IDENTIFY FUNCTIONAL DIFFERENCES AMONG PROVENANCES IN IBERIAN PINUS SPECIES. HOWEVER, IN CONTRAST, WE HAVE NOT YET DEVELOPED A SOLID ECOPHYSIOLOGICAL BASIS, EXPERIMENTALLY-SUSTAINED, FOR EXPLAINING THE DISTRIBUTION PATTERN OF IBERIAN PINES. THE AIM OF THE PROJECT IS TO STUDY THE ECOPHYSIOLOGICAL STRATEGIES AT JUVENILE STAGES OF GROWTH IN RESPONSE TO DROUGHT, LOW TEMPERATURE AND SOIL NUTRIENT AVAILABILITY. THE GENERAL HYPOTHESIS IS THAT IBERIAN PINES HAVE DIFFERENT TOLERANCE AND FUNCTIONAL STRATEGIES TO FACE ABIOTIC STRESSES, WHICH CORRELATE WITH THE DISTRIBUTION OF THEIR NATIVE POPULATIONS. SPECIFIC OBJECTIVES ARE TO COMPARE: 1) SURVIVAL AND GROWTH TO LOW WINTER TEMPERATURE, 2) THE WATER POTENTIAL THRESHOLD AT WHICH PINE SEEDLING MORTALITY OCCURS, 3) WATER USE	VILLAR SALVADOR	PEDRO		UNIVERSIDAD DE ALCALA	FACULTAD DE CIENCIAS AMBIENTALES	FACULTAD DE CIENCIAS AMBIENTALES	01-01-12	31-12-14	MINECO	Spain
AGL2011-24732		REPLACING BARE FALLOW BY COVE CROPS IN IRRIGATED SYSTEMS: EFFECT ON NITROGEN AND WATER DYNAMICS AND SOIL QUALITY	CITRUS\WATER USE EFFICIENCY\DROUGHT\SALINITY\FRUIT YIELD\FRUIT QUALITY\LEAF GAS EXCHANGE PARAMETERS\WATER RELATION\SHADE SCREEN	REPLACING BARE FALLOWS BY COVER COP COULD INCREASE SUSTAINABILITY IN IRRIGATED SYSTEMS, WHERE BARE SOILS ARE PRESENT DURING SEVERAL MONTHS. THE USE OF WINTER COVER CROPS CAN ALSO PROVIDE ADDITIONAL BENEFITS SUCH AS IMPROVE SOIL STRUCTURE STABILITY, WATER RETENTION CAPACITY OR PREVENT NITRATE LEACHING. HOWEVER, THESE ADVANTAGES NEED TO BE COMPENSATED WITH POTENTIAL DISADVANTAGES THAT CAN BE ORIGINATED WHEN COVER CROPS ARE INTRODUCED, LIKE COMPETITION FOR WATER AND NUTRIENTS WITH THE SUBSEQUENT CROP AND ADDITIONAL ECONOMIC COSTS. IN SPAIN COVER CROPS ARE RARELY USED EXCEPT FOR EROSION CONTROL IN PERENNIAL ORCHARDS, PROBABLY BECAUSE OF A LACK OF INFORMATION ABOUT THEIR FUNCTION AND MANAGEMENT. IN ADDITION, REDUCING N FERTILIZER APPLICATION IS A MAIN CONCERN IN EU, AS A MEAN TO DIMINISH ENVIRONMENTAL PROBLEMS RELATED TO WATER CONTAMINATION AND N GASEOUS LOSSES FROM AGRICULTURE. IRRIGATED AGRICULTURAL AREAS ARE PARTICULARLY SUSCEPTIBLE TO NITROGEN LOSSES BECAUSE IRRIGATED CROPS ARE ABUNDANTLY FERTILIZED. PROPER MANAGEMENT OF COVER CROPS COULD ALLOW INCREASING NITROGEN USE EFFICIENCY IN IRRIGATED SYSTEMS, DIMINISHING THE HIGH DEPENDENCY OF MINERAL N FERTILIZER OF THESE SYSTEMS. FINALLY, COVER CROPS RESIDUES AD BIOMASS TO THE SOIL AND COULD BE OF GREAT HELP TO DIMINISH PROBLEMS RELATED TO LOW SOIL ORGANIC MATTER CONTENT IN IRRIGATED AREAS. THE GOAL OF THIS PROPOSAL IS TO STUDY THE EFFECT OF REPLACING BARE FALLOW BY COVER CROPS IN IRRIGATED CROPPING SYSTEMS, ON THE MAIN ASPECTS OF NITROGEN	QUEMADA SAENZ-BADI	MIGUEL		UNIVERSIDAD POLITECNICA DE MADRID	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-01-12	31-12-14	MINECO	Spain

AGL2011-30022-C02-01		IRRIGATION MANAGEMENT WITH SALINE WATER TO REGULATE STOMATA CONDUCTANCE, TO IMPROVE WATER STATUS AND TO MAINTAIN PLANT ORNAMENTAL QUALITY	GARDENING\LANDSCAPE\FLORICULTURE\HORTICULTURE\IRRIGATION\POT PLANT\ORNAMENTAL PLANT	THE GENERAL IDEA OF THIS PROJECT IS TO STUDY THE USE OF WATER RESOURCES, WHICH ARE SCARCE AND OF LOW QUALITY IN OUR AREA (SOUTHERN SPAIN), TAKING ADVANTAGE OF MORPHOLOGICAL AND PHYSIOLOGICAL CHANGES THAT PLANTS DEVELOP WHEN GROWN WITH SUCH WATER. ALSO, WE WILL STUDY IRRIGATION STRATEGIES AND TECHNIQUES TO MITIGATE ADVERSE OSMOTIC AND SALT EFFECT IN PLANTS AND SOIL. IN THIS REGARD, WE WILL LOOK FURTHER INTO THE RESPONSE OF PLANTS TO PARTIAL ROOT-ZONE DRYING (PRD), BECAUSE IRRIGATION CONTROL AND, PARTICULARLY, REGULATED DEFICIT IRRIGATION MAY PROVIDE A MORE FEASIBLE TECHNIQUE TO SAVE WATER AND TO REDUCE VEGETATIVE GROWTH, WITHOUT AFFECTING THE ORNAMENTAL AND ECONOMIC VALUE. WE WILL TEST THE USE OF SALINE WATER OF DIFFERENT ORIGINS AND COMPATIBLE MYCORRHIZAL FUNGUS SPECIES, PAYING PARTICULAR ATTENTION TO THE INTERACTION OF SOME OF THESE EFFECTS. THESE ASPECTS WILL BE STUDIED IN PLANTS GROWN IN POTS AND ONCE ESTABLISHED IN THE FIELD TO DETERMINE THE INFLUENCE OF DIFFERENT VOLUMES OF WATER APPLIED AND THE EFFICIENCY OF THE ROOT SYSTEM. UNDER THESE CONDITIONS, THE WATER RELATIONS, STOMATA REGULATION, LEAF TEMPERATURE AND WATER USE EFFICIENCY WILL BE STUDIED. THE	SANCHEZ BLANCO	Mª JESUS		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO DE RIEGO	CENTRO DE EDAFOLOGIA Y BIOLOGIA APLICADA DEL SEGURA (CEBAS)	01-01-12	31-12-14	MINECO	Spain
AGL2011-30022-C02-02		EFFECT OF IRRIGATION MANAGEMENT WITH MARGINAL WATER ON ORNAMENTAL PLANT GROWTH AND CROP MEDIA: POT AND URBAN LANDSCAPE CULTURE	IRRIGATION\ENERGY\ENERGY EFFICENCY\SIMULATION MODELS	THIS RESEARCH PROJECT STUDIES THE MANAGEMENT OF IRRIGATION WITH MARGINAL-QUALITY WATER, MAINLY SALINE WATER, ON ORNAMENTAL AND LANDSCAPE NATIVE PLANTS (SHRUBS AND HERBACEOUS PERENNIALS). BOTH, POTTED PLANT PRODUCTION IN NURSERY AND THE ESTABLISHMENT AND MAINTENANCE OF GREEN SPACES IN URBAN LANDSCAPE WILL BE INVESTIGATED. IN THE POTTED PLANT ORIENTATION WILL BE DETERMINED WHETHER ELECTRICAL CONDUCTIVITY (EC) SENSORS ARE USEFUL TO CONTROL BOTH, THE WATER CONTENT AND THE PORE-EC OF SOILLESS SUBSTRATE, AND TO IMPROVE THE IRRIGATION EFFICIENCY. SO, THE NEGATIVE EFFECTS OF MARGINAL WATER IRRIGATION IN THE PLANTS CAN BE REDUCED. THE DISTRIBUTION OF ROOTS AND SALTS IN THE SUBSTRATE UNDER SALINE IRRIGATION WILL ALSO BE ASSESSED BY PLACING DIFFERENT NUMBER OF EMITTERS ON THE SUBSTRATE SURFACE. ON THE URBAN LANDSCAPE ORIENTATION, AIMS TO ADVANCE IN THE UNDERSTANDING OF THE LANDSCAPE PLANTS DEVELOPMENT WHEN THEY ARE SUBMITTED TO DEFICIT MARGINAL WATER IRRIGATION, WHICH WILL DETERMINE THE LANDSCAPE QUALITY. THE INFLUENCE OF THIS IRRIGATION WILL BE ALSO ASSESSED ON BOTH, ROOT DEVELOPMENT AND SALTS DISTRIBUTION IN THE SOIL PROFILE. THE EXPECTED RESULTS WILL CONTRIBUTE TO: 1) OPTIMIZE THE USE OF NEW TECHNOLOGIES IN NURSERY PRODUCTION SYSTEMS IN SEMI-	BAÑON ARIAS	SEBASTIAN DEL PILAR		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	DPTO. PRODUCCION VEGETAL	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-01-12	31-12-14	MINECO	Spain
AGL2011-30328-C02-01		ACTIONS FOR IMPROVING ENERGY EFFICIENCY IN IRRIGATION	IRRIGATION\ENERGY\ENERGY EFFICENCY\SIMULATION MODELS	THE PRESENT PROPOSAL IS PERFORMED UNDER THE PRACTICAL EXPERIENCE GAINED BY THE PARTICIPATING GROUPS IN THE PROJECT "SOSTENIBILIDAD EN EL USO DEL AGUA Y LA ENERGIA EN EL REGADIO. PET2008-0175" (MARCH 2009 TO SEPTEMBER 2011) IN WHICH ENERGY AUDITS AND MEASURES TO IMPROVE ENERGY EFFICIENCY IN WATER USER ASSOCIATIONS WERE PERFORMED. THUS, IT WAS DETECTED THE NECESSITY OF DEVELOPING ALGORITHMS, MODELS, AND TOOLS TO HELP TO IMPROVE THE ENERGY EFFICIENCY IN IRRIGATION, IN BOTH COLLECTIVE IRRIGATION NETWORKS AND IRRIGATION SYSTEMS IN PLOT. THE PROPOSAL CONSIST IN DEVELOPING ALGORITHMS, MODELS AND TOOLS TO IMPROVE ENERGY EFFICIENCY IN: 1) MANAGEMENT OF IRRIGATION NETWORKS, 2) MANAGEMENT AND DESIGN OF PUMPING SYSTEMS, AND 3) MANAGEMENT AND DESIGN OF IRRIGATION SYSTEMS. THE GROUP OF UCO WILL BE FOCUSED IN THE FIRST ISSUE, SOLVING PROBLEMS OF SECTORING AND DETECTION OF CRITICAL POINTS IN IRRIGATION NETWORKS FOR DECREASING THE ENERGY DEMAND OF THESE SYSTEMS. THE GROUP OF CREA-UCLM, WHICH INCLUDE THREE PROFESSORS OF UNIVERDAD MIGUEL HERNANDEZ, WILL BE FOCUSED IN THE PUMPING SYSTEMS AND IRRIGATION SYSTEMS MANAGEMENT AND DESIGN. THE SCIENTIFIC OBJECTIVES OF THE PROPOSAL ARE: 1.DEVELOPMENT AND VALIDATION OF AN OPTIMIZATION MODEL FOR MINIMUM ENERGY USE IN PRESSURIZED IRRIGATION WATER DISTRIBUTION NETWORKS. 2.NEW MODEL FOR SUSTAINABLE MANAGEMENT OF PRESSURIZED IRRIGATION NETWORKS 3.TO DEVELOP A GLOBAL PUMPING SYSTEM MODEL AND ALGORITHMS FOR PUMPING SYSTEMS DESIGN,	TARJUELO MARTIN-BEN	JOSE Mª		UNIVERSIDAD DE CASTILLA-LA MANCHA	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	CENTRO REGIONAL DE ESTUDIOS DEL AGUA (CREA)	01-01-12	31-12-14	MINECO	Spain

AGL2011-25365		ECOPHYSIOLOGICAL AND EPIGENETIC ASPECTS IN THE WATER STRESS RESPONSE OF FOREST TREE SPECIES: FAGUS SYLVATICA L. AS A STUDY MODEL	HEADWATER STREAMS\TEMPERATURE\FUNCTIONING\LEAF LITTER DECOMPOSITION\MICROCOSMS\MACROINVERTEBRATES\HYPHOMYCETES	IN A WORLD ENDURING A CLIMATIC CHANGE AS PART OF A FAST GLOBAL CHANGE, THE RESPONSE CAPACITY OF LONG-LIVING FOREST-TREE SPECIES IS MAINLY CONDITIONED BY THEIR GENETIC DIVERSITY AND THE PHENOTYPIC PLASTICITY THEY CAN DRIVE AGAINST ENVIRONMENTAL CHANGES. BOTH FACTORS ARE RELEVANT; HOWEVER, AND AS CONSEQUENCE OF THE RELATIVE FAST RECENT ENVIRONMENTAL CHANGE, THE IMPORTANCE OF PHENOTYPIC PLASTICITY AND ACCLIMATION SEEMS TO INCREASE FOR PLANT SPECIES AS THE MECHANISMS FOR ADJUSTMENT TO NEW ENVIRONMENTS IN THE SORT TERM. THIS ISSUE IS ESPECIALLY RELEVANT FOR THE IBERIAN PENINSULA, WHERE A GENERAL INCREASE OF DRYNESS AND WATER STRESS HAS BEEN FORECASTED. THIS COULD BE EVEN MORE IMPORTANT TO MOUNTAIN TEMPERATE SPECIES, FOR WHICH WATER SCARCITY HAS NOT BEEN TRADITIONALLY SHORTCOMING FOR ITS PHYSIOLOGICAL PERFORMANCE. THE PROJECT ECOFISEPI PLANS TO ASSESS THE WATER STRESS RESPONSE OF FOREST-TREE SPECIES FROM A DOUBLE POINT OF VIEW. ON ONE HAND, IT IS PROPOSED TO ASSESS THE DIFFERENTIAL DISPLAY OF IMPORTANT FUNCTIONAL PARAMETERS TO COPE WITH DROUGHT IN POPULATIONS OF FAGUS SYLVATICA THAT ARE ECOLOGICALLY DIFFERENT REGARDING THE SUFFERED INTENSITY OF DRY PERIODS. ON THE OTHER HAND, THE DEVELOPMENT OF SOME EPIGENETIC MOLECULAR	ARANDA	ISMAEL		INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (INIA)	CENTRO DE INVESTIGACION FORESTAL (CIFOR)	CENTRO DE INVESTIGACION FORESTAL (CIFOR)	01-01-12	31-12-14	MINECO	Spain
AGL2011-30328-C02-02		ACTIONS FOR IMPROVING ENERGY EFFICIENCY IN IRRIGATION	REMOTE SENSING\WATER BALANCE\ENERGY BALANCE\EVAPOTRANSPIRATION\WATER ESTRES\SOIL MOISTURE	THE PRESENT PROPOSAL IS PERFORMED UNDER THE PRACTICAL EXPERIENCE GAINED BY THE PARTICIPATING GROUPS IN THE PROJECT "SOSTENIBILIDAD EN EL USO DEL AGUA Y LA ENERGIA EN EL REGADIO. PET2008-0175" (MARCH 2009 TO SEPTEMBER 2011) IN WHICH ENERGY AUDITS AND MEASURES TO IMPROVE ENERGY EFFICIENCY IN WATER USER ASSOCIATIONS WERE PERFORMED. THUS, IT WAS DETECTED THE NECESSITY OF DEVELOPING ALGORITHMS, MODELS, AND TOOLS TO HELP TO IMPROVE THE ENERGY EFFICIENCY IN IRRIGATION, IN BOTH COLLECTIVE IRRIGATION NETWORKS AND IRRIGATION SYSTEMS IN PLOT. THE PROPOSAL CONSIST IN DEVELOPING ALGORITHMS, MODELS AND TOOLS TO IMPROVE ENERGY EFFICIENCY IN:1) MANAGEMENT OF IRRIGATION NETWORKS, 2) MANAGEMENT AND DESIGN OF PUMPING SYSTEMS, AND 3) MANAGEMENT AND DESIGN OF IRRIGATION SYSTEMS. THE GROUP OF UCO WILL BE FOCUSED IN THE FIRST ISSUE, SOLVING PROBLEMS OF SECTORING AND DETECTION OF CRITICAL POINTS IN IRRIGATION NETWORKS FOR DECREASING THE ENERGY DEMAND OF THESE SYSTEMS. THE GROUP OF CREA-UCLM, WHICH INCLUDE THREE PROFESSORS OF UNIVERDAD MIGUEL HERNANDEZ, WILL BE FOCUSED IN THE PUMPING SYSTEMS AND IRRIGATION SYSTEMS MANAGEMENT AND DESIGNTHE SCIENTIFIC OBJECTIVES OF THE PROPOSAL ARE: 1.DEVELOPMENT AND VALIDATION OF AN OPTIMIZATION MODEL FOR MINIMUM ENERGY USE IN PRESSURIZED IRRIGATION WATER DISTRIBUTION NETWORKS. 2.NEW MODEL FOR SUSTAINABLE MANAGEMENT OF PRESSURIZED IRRIGATION NETWORKS 3.TO DEVELOP A GLOBAL PUMPING SYSTEM MODEL AND ALGORITHMS FOR PUMPING SYSTEMS DESIGN,	RODRIGUEZ DIAZ	JUAN ANTONIO		UNIVERSIDAD DE CORDOBA	DPTO. AGRONOMIA	DPTO. AGRONOMIA	01-01-12	31-12-14	MINECO	Spain
AGL2011-30498-C02-02		COUPLING LAND SURFACE ENERGY AND WATER BALANCE FROM REMOTE SENSING FOR MAPPING EVAPOTRANSPIRATION, WATER STRESS AND SOIL MOISTURE	VIRUSES\BACTERIA\EMERGENT\PATHOGENS\RECLAIMED WATER\FOOD\CONTAMINATION\RISK\INDICATORS	THE CERESS PROPOSAL ADDRESSES THE COUPLING OF REMOTE SENSING LAND SURFACE ENERGY BALANCE, SEB, AND THE [REMOTE SENSING] SATELLITE-ASSISTED WATER BALANCE, SAWB, FOR A COMPLETE SPATIO-TEMPORAL ESTIMATION OF EVAPOTRANSPIRATION, SOIL MOISTURE AND CANOPY WATER STRESS ALONG THE TIME, AT HIGH SPATIAL AND TEMPORAL RESOLUTION (AROUND 1 HA, 1 DAY). THE TWO COMPLETELY INDEPENDENT AND RELIABLE REMOTE SENSING BASED APPROACHES ARE LINKED THROUGH THE EVAPOTRANSPIRATION. BOTH APPROACHES EXHIBIT CONCEPTUAL AND OPERATIONAL ADVANTAGES AND LIMITATIONS, THEREFORE THE CHALLENGE IS COMBINING BOTH APPROACHES TO TAKE ADVANTAGE OF THE CAPABILITIES OF EACH OF THEM. THE COUPLING PROCEDURE ADDRESSES (A) THE INTERPOLATION ISSUE TO FILL THE GAPS BETWEEN AVAILABLE THERMAL AND OPTICAL SATELLITE IMAGES FOR A COMPLETE SPATIO-TEMPORAL ESTIMATION OF ET, (B) THE CANOPY WATER STRESS DETECTION, AS RATIO BETWEEN ACTUAL ET OF CANOPY, OBTAINED FROM THE SEB MODEL, AND ITS MAXIMUM (POTENTIAL) TRANSPIRATION, DERIVED FROM REFLECTANCE-BASED CROP COEFFICIENT, AND (C) THE SOIL MOISTURE ESTIMATION; IMPROVEMENT ON THE ACCURACY OF SOIL MOISTURE AND OTHER WATER BALANCE COMPONENTS ESTIMATION IS ACHIEVED BY INVERSION OF THE SOIL WATER BALANCE USING AS INPUT ACTUAL ET FROM SEB.	GONZALEZ DUGO	MARIA PATROCINIO		INSTITUTO ANDALUZ DE INVEST. Y FORMACION AGRARIA PESQUERA ALIMENATRIA Y DE LA PRODUCCION ECOLOGICA	INSTITUTO ANDALUZ DE INVEST. Y FORMACION AGRARIA PESQUERA ALIMENATRIA Y DE LA PRODUCCION ECOLOGICA	INSTITUTO ANDALUZ DE INVEST. Y FORMACION AGRARIA PESQUERA ALIMENATRIA Y DE LA PRODUCCION ECOLOGICA	01-01-12	31-12-14	MINECO	Spain

AGL2011-24795		AGRONOMIC STRATEGIES FOR INCREASING THE WATER USE EFFICIENCY IN CITRUS TREES UNDER ARID CONDITION	DIFFUSE POLLUTION\NITRATES DIRECTIVE\NITRATE VULNERABLE ZONES (NVZ)\VULNERABILITY INDEXES\GROUNDWATER\AGRICULTURAL AND LIVESTOCK LAND USES\PHYSICAL ENVIRONMENT\CATCHMENT SCALE\REGIONAL SCALE\GEOGRAPHICAL INFORMATION SYSTEMS	IN THE REGION OF MURCIA, THE CITRUS INDUSTRY IS ONE OF THE MOST IMPORTANT SECTORS IN THE ECONOMY. IN WORLD RANKING, SPAIN IS THE SECOND-HIGHEST LEMON PRODUCING COUNTRY AND THE GREATEST LEMON EXPORTER. ABOUT 80% OF THE SPANISH PRODUCTION IS LOCATED IN THE "REGION DE MURCIA" AND "COMUNIDAD VALENCIANA". THESE AREAS HAVE A SEMI-ARID CLIMATE, CHARACTERIZED BY SCARCE RAIN, SUCH AS PROBLEMS OF DROUGHT AND SALINISATION LIMITING THE PRODUCTION OF CITRUS. CITRUS TREES HAVE BEEN CLASSIFIED AS A SALT AND DROUGHT SENSITIVE CROP AS SALINE IRRIGATION WATER AND/OR DROUGHT STRESS PERIODS REDUCE CITRUS TREE GROWTH AND FRUIT YIELD. THEREFORE, IN THIS AREA IS NECESSARY TO STUDY MANAGEMENT PRACTICES TO OPTIMIZE THE USE OF SCARCE WATER RESOURCES OR FOR USING POOR QUALITY WATER. SALT OR DROUGHT TOLERANCE DEPENDS ON PHYSIOLOGICAL AND ENVIRONMENTAL FACTORS AS SUCH STRESS TOLERANCES DECREASE IN ARID CLIMATE AREAS WITH HIGH EVAPORATIVE DEMAND SUCH AS THAT IN THE SOUTHEAST OF SPAIN. THE MAIN OBJECTIVE OF THIS PROPOSAL IS TO DEVELOP TOOLS TO IMPROVE TOLERANCE AND THEREFORE INCREASE YIELD AND FRUIT QUALITY OF CITRUS CULTIVATED UNDER CONDITIONS OF DROUGHT OR HIGH SALINITY. IN	GARCIA SANCHEZ	FRANCISCO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	OPTO. NUTRICION VEGETAL	CENTRO DE EDAFOLOGIA Y BIOLOGIA APLICADA DEL SEGURA (CEBAS)	01-01-12	31-12-14	MINECO	Spain
AGL2011-23673		INTEGRATION OF ADVANCED SENSING TECHNOLOGIES ON AN ON-THE-GO MULTISENSOR PLATFORM TU STUDY THE SPATIO-TEMPORAL VARIABLITY OF THE VINEYARD.	COVER CROPS\NITROGEN\WATER\SOIL QUALITY	THE GREAT ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPORTANCE OF THE WINE AND VINE INDUSTRY SPAIN ENCOURAGES THE DEVELOPMENT OF INNOVATIVE VITICULTURE TECHNOLOGIES TO ACHIEVE A MORE COMPETITIVE AND SUSTAINABLE GRAPE AND WINE PRODUCTION. THE MAIN GOAL OF THIS RESEARCH PROJECT, INVOLVING A MULTIDISCIPLINE RESEARCH TEAM, IS TO INTEGRATE SEVERAL STATE-OF-THE-ART PROXIMAL SENSIG TECHNOLOGIES, SUCH AS MACHINE VISION, THERMOGRAPHY AND FLUORESCENCE, ON AN ON-THE-GO MULTISENSOR PLATFORM TO BE ABLE TO EVALUATE THE VEGETATIVE AND PRODUCTIVE FEATURES OF THE VINEYARD IN A NON-DESTRUCTIVE, FAST AND RELIABLE MANNER. THUS, THE GOALS OF THIS PROJECT ARE: 1) TO INVESTIGATE AND VALIDATE THE USE OF NEW SENSING TECHNOLOGIES, SUCH AS MACHINE VISION, THERMOGRAPHY AND FLUORESCENCE TO EVALUATE THE VEGETATIVE FEATURES AND YIELD COMPONENTS OF THE VINEYARD, AS WELL AS THE FRUIT HEALTH STATUS AND COMPOSITION, IN THE FIELD. 2) THE DEVELOPMENT OF AN ON-THE-GO MULTISENSOR PLATFORM, WHERE ADVANCED PROXIMAL SENSING TOOLS, SUCH AS MACHINE VISION, THERMOGRAPHY AND FLUORESCENCE ARE INTEGRATED. 3) TO FIELD VALIDATE THE ON-THE-GO MULTISENSOR PLATFORM TO STUDY THE SPATIO-TEMPORAL VARIABILITY OF THE VEGETATIVE AND PRODUCTION FEATURES OF THE VINEYARD AS WELL AS THE FRUIT COMPOSITION. 4) TO DISSEMINATE AND TRANSFER THIS NEW KNOW-HOW TO	TARDAGUILA LASO	JAVIER		UNIVERSIDAD DE LA RIOJA	FACULTAD DE CIENCIAS, ESTUDIOS AGROALIMENTARIOS E INFORMATICA	FACULTAD DE CIENCIAS, ESTUDIOS AGROALIMENTARIOS E INFORMATICA	01-01-12	31-12-14	MINECO	Spain
AGL2011-29861		DEVELOPMENT OF TECHNICAL TOOLS AIMED TO IMPROVE THE ACCURACY IN THE DELIMITATION OF VULNERABLE ZONES RELATED WITH THE POLLUTION CAUSED BY NITRATES FROM AGRICULTURAL SOURCES	GROWTH\WATER USE EFFICIENCY\IRRIGATION DEFICIT\SALINITY\LEAF TEMPERATURE\STOMATA CONTROL\WATER RELATIONS\MYCORRHIZAE	POLLUTION DUE TO NITRATES FROM AGRICULTURAL SOURCES HAS BECOME ONE OF THE MAIN CAUSES OF THE REDUCTION OF GROUND AND SURFACE WATER QUALITY AROUND THE WORLD. WITHIN THE EUROPEAN UNION, THE DIRECTIVE 91/676/EEC, CONCERNING THE PROTECTION OF WATERS AGAINST POLLUTION CAUSED BY NITRATES FROM AGRICULTURAL SOURCES, RULES THAT WATERS THAT CONTAIN MORE THAN 50 MG L-1 NITRATES SHOULD BE STATED AS AFFECTED BY POLLUTION. THE DIRECTIVE DEFINES AS VULNERABLE ZONES TO NITRATE POLLUTION (NVZ) THOSE AREAS DRAINING INTO WATERS AFFECTED BY NITROGEN POLLUTANTS. IN THE DESIGNATED NVZ FARMERS MUST FOLLOW THE MANDATORY MEASURES ESTABLISHED IN THE ACTION PROGRAMMES AIMED TO IMPROVE WATER QUALITY. ADDITIONALLY, THE DIRECTIVE 2000/60/EC HAS RULED THAT BY 2015 THE WATER AFFECTED BY AGRICULTURAL SOURCES POLLUTION MUST REACH A "GOOD QUALITY "STATE. THUS, IT WOULD BE ESSENTIAL TO OPTIMIZE THE EFFICIENCY OF THE ACTION PROGRAMMES IN PROGRESS ON THE NVZ, SINCE CAP SUBSIDIES ARE UNDER CONDITIONAL ACHIEVEMENTS OF WATER QUALITY. THE DISTRIBUTION MAP OF NVZ SHOWS GREAT DISCREPANCIES AT EUROPEAN AS WELL AS NATIONAL LEVELS. THE DISCREPANCY IN THE NVZ DESIGNATION IS DUE MAINLY TO THE LACK OF A PRECISE CRITERION IN THE NITRATE DIRECTIVE IN ORDER TO CLEARLY DEFINE THEIR TERRITORIAL DEMARCATIONS. THIS LACK OF A NORMALIZED PROCEDURE COULD LEAD TO UNBALANCED OR INEFFICIENT RESULTS IN	ARAUZO SANCHEZ	Mª DE LAS MERCEDES		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE CIENCIAS AGRARIAS	INSTITUTO DE CIENCIAS AGRARIAS	01-01-12	31-12-14	MINECO	Spain

AGL2012-35196		DEFICIT IRRIGATION PRACTICES IN ALMOND ORCHARD	NITROGEN\EMISSION\OZONE TOLERANCE\DNDC\AMMONIUM TOLERANCE\N OXIDES\NITROGEN ISOTOPIC SIGNATURE	WATER SCARCITY IN MANY REGIONS OF SPAIN WILL INCREASE IN THE FORTHCOMING DECADES. THIS WILL FORCE IRRIGATED AGRICULTURE TO ADAPT TO RESTRICTIONS IN SUPPLY AND TO PRODUCE MORE WITH LESS WATER. THE CHANGES IN THE COMMON AGRICULTURAL POLICY WILL DEMAND ALTERNATIVE OPTIONS TO CURRENT CROPPING PATTERNS. ALMOND ORCHARDS GROWN INTENSIVELY ARE AN EXCELLENT CHOICE IN SIMILAR ENVIRONMENTS (E.G., CALIFORNIA) AND ARE BEGINNING TO BE INTRODUCED IN THE GUADALQUIVIR VALLEY AND OTHER AREAS OF SPAIN. HOWEVER, THE LIMITED AVAILABILITY OF IRRIGATION WATER WILL NOT ALLOW TO MEET THE FULL WATER REQUIREMENTS OF MATURE ORCHARDS, ESTIMATED IN THE AREA OF CORDOBA TO EXCEED 8,000 M3/HA. THIS IS WHY DEFICIT IRRIGATION WILL HAVE TO BE PRACTICED TO OPTIMIZE THE USE OF THE LIMITED RESOURCES AVAILABLE IN ALMOND PRODUCTION .WE PROPOSE TO CARRY OUT A FIELD EXPERIMENT TO DEVELOP A WATER PRODUCTION FUNCTION FOR ALMONDS (CV. GUARA, ONE OF THE MOST PROMISING IN NEW PLANTATIONS) WITH THE GOAL OF DEFINING THE OPTIMAL IRRIGATION LEVELS UNDER DIFFERENT AGRO-TECHNICAL AND ECONOMIC CONDITIONS. REGULATED DEFICIT IRRIGATION (RDI) PROGRAMS WILL BE DESIGNED TO APPLY	FERERES CASTIEL	ELIAS		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	OPTO. DE AGRONOMIA	INSTITUTO DE AGRICULTURA SOSTENIBLE (IAS)	01-01-13	31-12-15	MINECO	Spain
AGL2012-34544		REGULATED DEFICIT IRRIGATION IN HEDGEROW OLIVE ORCHARDS: AUTOMATIC IRRIGATION SCHEDULING BASED ON THE TREE PHYSIOLOGY AND THE ECONOMICS OF CROP MANAGEMENT	CORN\NITROGEN\EFFICIENCY\IRRIGATION\DOUBLE CROPPING\C SEQUESTRATION\RESIDUES\OPTICAL SENSORS\GAS EMISSIONS	THE MAIN GOAL OF THIS PROJECT IS TO DEVELOP PROTOCOLS FOR AUTOMATIC IRRIGATION SCHEDULING OF HIGH-PLANT-DENSITY HEDGEROW OLIVE ORCHARDS UNDER REGULATED DEFICIT IRRIGATION (RDI). OUR FINAL AIM IS TO INCREASE THE CROP WATER PRODUCTIVITY AND TO ENSURE A LONG PRODUCTIVE LIFE OF THE ORCHARD. THE PROTOCOLS WILL BE DEVELOPPED FROM PHYSIOLOGICAL MEASUREMENTS DESIGNED FOR A BETTER UNDERSTANDING OF THE RECORDS PROVIDED BY SAP FLOW, TRUNK DIAMETER VARIATION AND LEAF TURGOR PRESSURE SENSORS. EXPERIMENTS WILL BE CARRIED OUR IN A FULLY PRODUCTIVE COMMERCIAL "ARBEQUINA" OLIVE ORCHARD WITH 1667 TREES/HA. FROM THE THREE MENTIONED METHODS, WE WILL CHOOSE THE ONE YIELDING THE MOST RELIABLE AND PRECISE PROTOCOLS. WE WILL EVALUATE THE USE OF THESE PROTOCOLS FOR THE RATIONAL MANAGEMENT OF RDI IN THE ORCHARD. MAIN RESULTS FROM OUR ECOPHYSIOLOGICAL STUDIES WILL BE USED TO VALIDATE THE MECHANISTIC MODEL OF BUCKLEY ET AL. (2003) FOR THE HEDGEROW OLIVE ORCHARD. COMBINED WITH THE MODELS BY STEPPE ET AL. (2006) AND FARQUHAR ET AL. (1980), THE RESULTING MODEL WILL BE USED TO EVALUATE THE IMPACT OF CHANGES IN THE RDI STRATEGY ON CROP TRANSPIRATION AND PHOTOSYNTHESIS. THIS WILL ALLOW US TO DERIVE AN IMPROVED RDI STRATEGY.	FERNANDEZ LUQUE	JOSE ENRIQUE		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. PROTECCIÓN DEL SISTEMA SUELO AGUA PLANTA	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	01-01-13	31-12-15	MINECO	Spain
AGL2012-37815-C05-02		USE OF NITRIFICATION INHIBITORS FOR A RATIONAL MANAGEMENT OF NITROGEN IN AGRICULTURE. PHYSIOLOGICAL AND MOLECULAR BASES OF AMMONIUM TOLERANCE BY PLANTS.	NITROGEN\NUE\GREENHOUSE GASES EMISSION\AMMONIUM TOLERANCE\N OXIDES\NITROGEN ISOTOPIC SIGNATURE	THE INTENSIFICATION OF AGRICULTURAL PRODUCTION WHILE REDUCING THE ENVIRONMENTAL IMPACT SUCH AS GASEOUS EMISSIONS (N2O, CO2, CH4, NOX AND NH3) IS ONE OF MAIN PRIORITY ACTIONS RECOMMENDED BY THE COMMISSION ON SUSTAINABLE AGRICULTURE AND CLIMATE CHANGE IN 2011. UNDERSTANDING N DYNAMICS AND ITS RELATION WITH C AND WATER IN AGRO-ECOSYSTEMS IS KEY TO IMPLEMENT AGRICULTURAL PRACTICES THAT WILL ACHIEVE THIS ACTION. DUE TO THE SCARCE INFORMATION FOR OUR AGRO-ECOSYSTEMS, THE FIRST OBJECTIVE OF THIS COORDINATED PROJECT IS THE DEVELOPMENT OF TECHNIQUES TO MITIGATE N OXIDE EMISSIONS THROUGH AGRICULTURAL PRACTICES WHILST MAINTAINING CROP PRODUCTION. THE COLLABORATION OF THIS SUBPROJECT 2 (NEREA-2) TO OBJECTIVE 1 WILL FOCUS ON STUDIES OF THE EFFECT OF NITRIFICATION INHIBITORS BY COMBINING FIELD AND GREENHOUSE OR PHYTOTRON EXPERIMENTS. EVALUATION OF GAS EMISSIONS (N2O, CH4, CO2 AND NH3) WILL BE RELATED TO DATA PRODUCTION AND CROP QUALITY, AS WELL AS THE QUANTITY OF NITRIFYING AND DENITRIFYING SOIL BACTERIA. THE USE OF NITRIFICATION INHIBITORS CAUSES A SUBSTANTIAL CHANGE IN THE NITROGEN SOURCE AVAILABLE TO BE TAKEN UP AND ASSIMILATED BY THE PLANT, HENCE THE STUDY OF THE MOLECULAR AND PHYSIOLOGICAL MECHANISMS INVOLVED IN AMMONIUM TOLERANCE BY THE PLANTS IS PART OF OUR CONTRIBUTION TO OBJECTIVE 2. THUS, ALTHOUGH NITRATE IS GENERALLY THE MAIN SOURCE OF N FOR CROPS, AMMONIUM NUTRITION MAY IMPROVE FOOD QUALITY, REDUCING I.E.	GONZALEZ MURUA	CARMEN		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. BIOLOGIA VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-13	31-12-15	MINECO	Spain

AGL2012-37815-C05-05		ADVANCES IN THE DEVELOPMENT OF STRATEGIES FOR THE STUDY OF THE ORIGIN OF TOXICITY OF AMMONIUM AND MEANING OF 15N NATURAL ABUNDANCE	WEED\TILLAGE\FERTILIZATION\HEAT\SEEDLING\EMERGENCE\DIVERSITY\MODEL\HYDROTHERMAL	THE INTENSIFICATION OF AGRICULTURAL PRODUCTION WHILE REDUCING THE ENVIRONMENTAL IMPACT SUCH AS GASEOUS EMISSIONS (N2O, CO2, CH4, NOX AND NH3) IS ONE OF MAIN PRIORITY ACTIONS RECOMMENDED BY THE COMMISSION ON SUSTAINABLE AGRICULTURE AND CLIMATE CHANGE IN 2011. UNDERSTANDING N DYNAMICS AND THEIR RELATION WITH C AND WATER IN AGRO-ECOSYSTEMS IS KEY TO IMPLEMENTING AGRICULTURAL PRACTICES THAT WILL ACHIEVE THIS ACTION. DUE TO THE SCARCE INFORMATION FOR OUR AGRO-ECOSYSTEMS, THE FIRST OBJECTIVE OF THIS COORDINATED PROJECT IS THE DEVELOPMENT OF TECHNIQUES TO MITIGATE N OXIDE EMISSIONS THROUGH AGRICULTURAL PRACTICES WHILST MAINTAINING CROP PRODUCTION. A BETTER UNDERSTANDING OF THE ROLE OF ORGANIC N COMPOUNDS, ESPECIALLY SOLUBLE COMPOUNDS PRESENT IN SOILS, AND THE NH4+ TOLERANCE OF PLANTS IS ALSO NECESSARY TO IMPROVE N USE EFFICIENCY. ALTHOUGH NITRATE IS GENERALLY THE MAIN N SOURCE FOR CROPS, AND PRACTICES ARE BASED ON THIS COMPOUND, AMMONIUM NUTRITION COULD IMPROVE FOOD QUALITY BY E.G. REDUCING NITRATE IN PLANT TISSUES. HOWEVER, THE PROBLEMS ASSOCIATED WITH AMMONIUM TOXICITY NEED TO BE UNDERSTOOD AND SOLVED. TO ACHIEVE THIS OBJECTIVE WE WILL STUDY THE EFFECT OF CARBON SKELETON AVAILABILITY ON AMMONIUM TOLERANCE BY PLANTS BY MEANS OF A CONTROLLED CHAMBER EXPERIMENT WITH HIGH ENVIRONMENTAL CO2. ISOTOPIC TECHNIQUES WILL BE	APARICIO TEJO	PEDRO M.		UNIVERSIDAD PUBLICA DE NAVARRA	INSTITUTO DE AGROBIOTECNOLOGIA	INSTITUTO DE AGROBIOTECNOLOGIA	01-01-13	31-12-15	MINECO	Spain
AGL2012-39686-C02-01		OPTIMIZATION OF SOIL PROTECTION AND RE-VEGETATION TECHNIQUES FOR THE RECLAMATION OF BURNED FOREST ECOSYSTEMS: EFFECTIVENESS AND EFFECTS ON SOIL QUALITY	HERBIVORY; PLANT RESISTANCE; TOLERANCE;	THE CONSERVATION AND RECOVERY OF SOILS AFTER FOREST FIRES CLOSELY DEPEND ON THE REGENERATION OF THE VEGETATION COVER THAT PROTECTS THE SOIL FROM THE DIRECT IMPACT OF RAIN, FIXES THE SOIL WITH THEIR ROOTS AND RETAINS THE NUTRIENTS FROM THE ASH LAYER BY IMMOBILIZING THEM IN ITS PHYTOMASS (STEMS, ROOTS), DIMINISHING THEN THE LEACHING OF NUTRIENTS AND/OR THE POST-FIRE EROSION PROCESSES. IN THE MOST UNFAVOURABLE CONDITIONS (FIRES OF HIGH SEVERITY IN ZONES OF ELEVATE SLOPE) THE NATURAL RE-VEGETATION CAN BE VERY SLOW DUE TO THE DESTRUCTION OF THE BANK OF SEEDS AND THE PARTIAL LOSSES OF THE SOIL, BEING NECESSARY TO ADOPT, IMMEDIATELY OR SHORT TERM AFTER THE FIRE, MEASURES OF PROTECTION OF THE BURNED ECOSYSTEM TO AVOID THE POST-FIRE EROSION AND TO KEEP THE SOIL IN SUITABLE CONDITIONS SO THAT THE NATURAL REVEGETATION OR THE IMPLANTATION OF A NEW VEGETATION TAKES PLACE. PREVIOUS STUDIES HAVE SHOWED THAT THE EARLY IMPLANTATION OF A VEGETATION COVER AND MULCHING, PARTICULARLY THE LATTER, CAN BE USED FOR THE BURNT SOIL PROTECTION SINCE THEY REDUCE THE POST-FIRE EROSION AND HAVE NO SHORT-TERM EFFECTS ON THE SOIL-PLANT SYSTEM. THE PURPOSE OF THE PROJECT IS TO STUDY UNDER FIELD CONDITIONS: A) TO OPTIMIZE THESES TECHNIQUES FOR	DIAZ RAVIÑA	MONTSERRAT		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	BIOQUÍMICA DEL SUELO	INSTITUTO DE INVESTIGACIONES AGROBIOLOGICAS DE GALICIA (IIAG)	01-01-13	31-12-15	MINECO	Spain
AGL2012-39929-C03-01		FERTILIZATION REDUCTION IN CONVENTIONAL AND CONSERVATION TILLAGE SYSTEMS FOR RAIN-FED CROPS IN SEMI-ARID CONDITIONS. EFFECTS ON CROPS AND WEED VEGETATION	FERTILIZERS\CONSERVATION TILLAGE\SEMIARID SOILS\SOIL THERMAL CHARACTERISTICS\SOIL QUALITY	THE AGRICULTURAL PRODUCTION COST INCREASE AS A RESULT OF THE CONTINUOUS RISE IN PRICE OF INPUTS SUCH AS FUEL, FERTILIZERS AND PESTICIDES IS CHALLENGING CONVENTIONAL TILLAGE SYSTEMS FOR RAINFED CROPS IN SEMI-ARID CONDITIONS. REVERSING THIS SITUATION MAY BE ACCOMPLISHED ADOPTING PRODUCTION SYSTEMS THAT INCLUDE CONSERVATION TILLAGE AS IT IS AN INTERESTING AND ECONOMICALLY SUSTAINABLE ALTERNATIVE. DESPITE THE PROVEN FEASIBILITY OBSERVED IN OUR COUNTRY WHEN CONSERVATION TILLAGE PRACTICES ARE ADOPTED FOR RAINFED CROP PRODUCTION, IT IS ESTIMATED THAT ONLY 13% OF THE TOTAL CULTIVATED AREA IN SPAIN IN 2009 WERE TILLED WITH THESE SYSTEMS. FARMERS, PARTICULARLY THOSE INVOLVED IN DRY-LAND CROP PRODUCTION, ADOPT CONSERVATION TILLAGE SYSTEMS WITH THE AIM OF REDUCING PRODUCTION COSTS AND AT THE SAME TIME TO INCREASE, OR AT LEAST TO MAINTAIN, THE PROFIT OF THEIR ENTERPRISES. HOWEVER, IN THESE SYSTEMS, COST REDUCTION IS BASED PRIMARILY ON SAVING TIME, MACHINERY AND FUEL, BUT AS THEY ARE VERY INTENSIVE IN THE USE OF AGROCHEMICALS THEIR COST INCREASE DRAMATICALLY. MOREOVER, THE AMOUNT OF RESIDUE REMAINING IN THE SOIL SURFACE FLUCTUATES ACCORDING TO THE TILLAGE SYSTEM USED VARYING THEREFORE THE AMOUNT OF RADIATION ABSORBED BY THE SOIL. AS A CONSEQUENCE, THE HEAT BALANCE AND THE	NAVARRETE MARTINEZ	LUIS		INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	01-01-13	31-12-15	MINECO	Spain

AGL2012-35122		STRATEGIES FOR THE MAXIMIZATION OF THE NITROGEN USE EFICIENCY AND CARBON SEQUESTRATION IN HIGH YIELDING MAIZE CROPPING SYSTEMS.	REGULATED DEFICIT IRRIGATION\ALMOND\MINERAL NUTRITION\WATER DEFICITS\WATER STRESS	MAIZE IS A TRADITIONAL CROP IN THE IRRIGATED AREAS OF THE EBRO VALLEY AND IN CENTRAL AND NORTHERN CATALONIA, BEING AN IMPORTANT PART OF THEIR CROPPING SYSTEMS AS A BASIC PRODUCT FOR ANIMAL FEEDING. FOR THIS REASON AND ALSO BECAUSE OF ITS HIGH PRICES IS BECOMING A STRATEGIC CROP. SPAIN IMPORTS ABOUT 4MILIONS METRIC TONS, MORE THAN HALF OF ITS CONSUMPTION. HIGH YIELDING MAIZE IN THE SPANISH AGROSYSTEMS IS BASED, IN ADDITION TO WATER, ON SATISFACTORY NITROGEN AVAILABILITY. FOR THIS REASON CORN HAS BEEN NORMALLY OVERFERTILIZED AROUND THE WORLD, CAUSING OF NITRATE CONTAMINATION OF WATER BODIES BECAUSE OF THE CONTRIBUTION OF N TO EUTROPHICATION OF CONTINENTAL AND COASTAL WATERS. FOR THESE REASONS IT NECESSARY A CONTINUOUS EFFORT TO INCREASE ITS EFFICIENCY, NOT ONLY FOR POLLUTION PURPOSES, BUT ALSO BECAUSE NITROGEN FERTILIZATION IN CORN REPRESENTS MORE THAN 30% OF THE COST OF PRODUCTION. THE REFORM OF THE EUROPEAN AGRICULTURAL POLICY (CAP) WILL IMPROVE INTEGRATION OF ENVIRONMENTAL OBJECTIVES WITH THE AIM TO PRESERVE THE ENVIRONMENT AND EUROPEAN RURAL HERITAGE VIA AGRI¬ENVIRONMENTAL MEASURES. IN SPAIN, THE AGRICULTURAL AREAS WITH HIGHER NITRATE EXPORT ARE THOSE RELATED TO IRRIGATED AGRICULTURAL SYSTEMS WHERE CROPS OF HIGH NITROGEN USE, SUCH AS MAIZE, ARE GROWN.	LLOVERAS VILAMANYA	JAUME		UNIVERSIDAD DE LLEIDA	DPTO. PRODUCCION VEGETAL Y CIENCIA FORESTAL	ESCUELA TECNICA SUPERIOR DE INGENIERIAS AGRARIAS	01-01-13	31-12-15	MINECO	Spain
BIA2008-00522		SIMULATION OF FLOWS WITH INTERFACES OF FLUIDS AND FRICTIONAL MATERIALS IN HYDRAULICS		THE AIM OF THE PROJECT IS THE NUMERICAL SIMULATION OF FLOWS WITH INTERFACES AND COMPRISES THREE LINES. FIRST, WE PROPOSE A NOVEL APPROACH FOR THE NUMERICAL SIMULATION OF FLUID FLOW AND SEDIMENT TRANSPORT PAST EVOLUTIONARY LANDFORMS WITH EMPHASIS IN EXTREME FLOW CONDITIONS. THE APPROXIMATION IS BASED ON AN EXTENSION OF PREVIOUS MODEL FOR SAND DUNES DEVELOPING IN THE ATMOSPHERIC BOUNDARY LAYER (ORTIZ AND SMOLARKIEWICZ [2]), FOR A FULLY COUPLING OF FREE SURFACE FLOWS AND THE EVOLUTIONARY BED, EMPLOYING TIME-DEPENDENT CURVILINEAR COORDINATES. THE CONSERVATION LAW THAT DEFINES SHAPE OF THE LOWER BOUNDARY HAS A STRONG DEPENDENCE ON DETAILS OF LOCAL SURFACE STRESS, THEREBY FAVOURING LARGE EDDY SIMULATION INCORPORATED IN THE MODEL AND DIRECT NUMERICAL SIMULATION FOR SMALL SCALE FORMS. WE FORMULATE THE INTERFACE PROFILE AS ADVECTION-DIFFUSION EQUATION, INCLUDING SALTATION AND AVALANCHES TRANSPORT, WHILE THE FREE SURFACE (AS UPPER BOUNDARY) IS DEFINED BY THE NON-DISPERSIVE (IN FREQUENCY) SHALLOW WATER EQUATIONS. NUMERICAL EXPERIMENTS TO STUDY FORMATION OF META-STABLE STATES, CELERITY OF FORMS FOR DIFFERENT SCALES, AVERAGE WAVELENGTH AND HEIGHTS WERE PLANNED, TO EXPLORE THE RICH MORPHOLOGY AND ITS FULLY COUPLING WITH FREE SURFACE EVOLUTION.	ORTIZ ROSSINI	PABLO		UNIVERSIDAD DE GRANADA	DPTO. MECANICA DE MEDIOS CONTINUOS Y TEORIA DE ESTRUCTURAS	DPTO. MECANICA DE MEDIOS CONTINUOS Y TEORIA DE ESTRUCTURAS	01-01-09	31-12-11	MINECO	Spain
BIA2009-08272		DEVELOPMENT OF SYSTEMS FOR RAINWATER CATCHMENT AND STORAGE THROUGHT PERMEABLE PAVEMENTS TO ASSESS ITS NON-POTABLE USES AND AS RESOURCE OF LOW-ENTHALPY GEOTHERMAL ENERGY	INDUSTRIAL WASTE WATERS\HEAVY METALS\ARSENIC\COPPER\HALOAROMATICS\BIOREMEDIATION\ENVIRONMENTAL BIOTECNOLOGY\GMO'S\TRANSGENIC ROOTS\BIOREACTORS	THE AIMS OF THIS PROJECT ARE THE STUDY AND DEVELOPMENT OF REV SYSTEMS (RAINWATER ENERGY VALORISATION), WHICH CONSIST IN CAPTURING AND STORING RAINWATER IN SUFFICIENT QUANTITY AND QUALITY FOR ITS USE AS A LOW-ENTHALPY GEOTHERMAL RESOURCE AND OTHER NON-POTABLE USES. TO THAT END, THE RESEARCH WILL APPROACH SIMULTANEOUSLY TWO ASPECTS OF THE STATE OF THE TECHNOLOGY. AS ONE TASK, SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS) WILL BE STUDIED IN DEPTH, FOCUSING ON THE QUANTITY AND QUALITY OF THE STORED RAINWATER AND THE SUBSEQUENT POSSIBILITY OF NON-POTABLE USES OF IT. CONCERNING THE OTHER TASK, ENERGY CONSIDERATIONS ABOUT THE STORED RAINWATER WILL BE CARRIED OUT FOR THE DESIGN AND DEVELOPMENT OF LOW-ENTHALPY GEOTHERMAL ENERGY VALORISATION SYSTEMS. THE SPECIFIC OBJECTIVES OF THIS PROJECT ARE: 1. STUDY AND OPTIMIZATION OF RAINWATER HARVESTING METHODS WITHIN SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS). 2. EVALUATION AND ANALYSIS OF THE QUANTITY AND QUALITY OF STORED RAINWATER FOR ITS LATER USE IN URBAN NON-POTABLE APPLICATIONS (PARK IRRIGATION, STREET CLEANING, ETC), RECREATIONAL USES (GOLF COURSE IRRIGATION, PONDS, ETC.) AND OTHERS (EXTINGUISH FIRES, ETC). 3. RESEARCH AND DEVELOPMENT OF RAINWATER STORAGE SYSTEMS USING PERVIOUS PAVEMENTS FOR ITS USE AS A LOW-ENTHALPY GEOTHERMAL RESOURCE. 4. DEVELOPMENT OF AN INTEGRATED SYSTEM THAT COMBINES RAINWATER HARVESTING AND STORAGE METHODS, IN SUFFICIENT QUANTITY AND QUALITY FOR	CASTRO FRESNO	DANIEL		UNIVERSIDAD DE CANTABRIA	DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-10	30-06-13	MINECO	Spain

BIA2012-32463		HYDROLOGICAL REHABILITATION OF URBAN ROAD INFRASTRUCTURES	RIVER PROCESSES\ECOHYDROLOGY\ECOHYDRAULICS\RIVER METABOLISM\CATCHMENT PLANNING\RIVER RESTORATION\INTEGRATED ASSESSMENT	THE RESEARCH PROJECT ENTITLED "HYDROLOGICAL REHABILITATION OF URBAN ROAD INFRAESTRUCTURES" AIMS TO PREVENT FLOODING AND DIFFUSE POLLUTION PHENOMENA BY MEANS OF MULTIFUNCTIONAL URBAN SURFACES, WHICH NOT ONLY BEAR THE TRAFFIC FOR WHICH THEY ARE DESIGNED BUT ALSO OFFER AN IMPROVED HYDROLOGICAL PERFORMANCE. FOR THIS, INNOVATIVE CONSTRUCTION MATERIALS WILL BE STUDIED THAT HELP TO DESIGN PAVEMENT LAYERS THAT ARE RESISTANT AND ADEQUATE FROM THE HYDRAULIC AND URBAN SURFACE RUNOFF WATER TREATMENT POINTS OF VIEW. THE PROJECT PURSUES TO MAKE USE OF THE CHANCE THAT THE URBAN REHABILITATION PROCESS MEANS TO AVOID THE MASSIVE USE OF IMPERVIOUS SURFACES THAT HAS MADE THE PROBLEMS OF FLOODING AND DIFFUSE POLLUTION WORSE IN CITIES. THE STARTING HYPOTHESES IS TO ASSUME THAT WITH THE COMBINATION OF INNOVATIVE CONSTRUCTION MATERIALS IT IS POSSIBLE TO OBTAIN URBAN PAVEMENTS ABLE TO BEAR ANY KIND OF TRAFFIC, THAT ALSO MANAGE RAINWATER ON SOURCE, AVOIDING FLOODING AND DIFFUSE POLLUTION. THE SPECIFIC OBJECTIVES AROUND WHICH THE PROJECT METHODOLOGY IS STRUCTURED ARE FOUR: 1. CHARACTERIZE THE RESISTANCE OF INNOVATIVE CONSTRUCTION MATERIALS FOR THE REDESIGN OF ROAD INFRASTRUCTURES THAT MAKE POSSIBLE THE	RODRIGUEZ HERNANDE	JORGE		UNIVERSIDAD DE CANTABRIA	OPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-13	31-12-15	MINECO	Spain
BIA2012-33967		HYDRAULIC STABILITY OF QUARRYSTONE, CUBE AND CUBIPOD ARMOR LAYERS IN BREAKING CONDITIONS	EVOLUTIONARY ECOLOGY\LIFE HISTORY TRAITS\ROTIFERS\UNPREDICTABLE ENVIRONMENTS\SEXUAL REPRODUCTION\DIAPAUSING EGG HATCHING\ADAPTATION GENOMICS	THE ARMOR LAYERS OF MOUND BREAKWATERS ARE USUALLY DESIGNED WITH EMPIRICAL FORMULAE SUCH AS HUDSON'S FORMULA, BASED ON SMALL-SCALE PHYSICAL MODEL TESTS WITH FROUDE SIMILARITY. THE HYDRAULIC STABILITY DEPENDS ON THE ARMOR UNIT GEOMETRY, NUMBER OF LAYERS IN THE ARMOR, ARMOR UNIT PLACEMENT, ETC. MOST SMALL-SCALE MODEL TESTS USED TO ESTIMATE AND TO COMPARE THE HYDRAULIC STABILITY OF DIFFERENT ARMOR LAYERS HAVE BEEN CONDUCTED IN WAVE FLUMES, 2D MODELS IN NON-BREAKING CONDITIONS AND NO OVERTOPPING. HOWEVER, MOST BREAKWATERS IN THE WORLD HAVE TO RESIST DESIGN STORMS WITH A CERTAIN PORTION OF LARGE INDIVIDUAL WAVES BREAKING BEFORE ATTACKING THE STRUCTURE. THE DEPTH-LIMITING BREAKING CONDITION CAUSE THE LARGER WAVES BREAKING IN ADVANCE WHICH SIGNIFICANTLY CHANGES THE WAVE FORCES AND CURRENTS ON THE ARMOR LAYER. IN THESE CONDITIONS, THE DESIGN FORMULAE FOR NON-BREAKING CONDITIONS ARE NOT VALID; THEREFORE, EMPIRICAL MODIFICATIONS AND SPECIFIC SMALL-SCALE MODELS TO VALIDATE THEM ARE FREQUENTLY USED. THE DESIGN METHODS CURRENTLY USED FOR MOUND BREAKWATERS IN DEPTH LIMITING CONDITIONS ARE NOT SATISFACTORY; FURTHERMORE, THERE ARE NOT WAVE DISTRIBUTIONS UNIVERSALLY ACCEPTED IN THIS AREA. THERE ARE NUMEROUS RELEVANT VARIABLES AFFECTING THE DISTRIBUTIONS AND EFFECTS ON ARMOR LAYERS SUCH AS: WAVE CHARACTERISTICS (HS0, TP,	MEDINA FOLGADO	JOSEP RAMON		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DEL TRANSPORTE Y TERRITORIO	INSTITUTO DEL TRANSPORTE Y TERRITORIO	01-01-13	31-12-15	MINECO	Spain
BIA2012-33572		LAND USE LEGACY EFFECTS ON RIVER PROCESSES: IMPLICATIONS FOR INTEGRATED CATCHMENT MANAGEMENT	MOUND BREAKWATERS\CONCRETE ARMOR UNITS\BREAKING WAVES\CUBIC BLOCK\CUBIPOD\QUARRYSTONE	INTEGRATED CATCHMENT MANAGEMENT (ICM) IS AN EMERGING DISCIPLINE AND PROCESS WITHIN THE INTEGRATED ASSESSMENT FIELD, WHICH ATTEMPTS TO ADDRESS THE DEMANDS OF MANAGERS AND DECISION MAKERS FOR EFFECTIVE WATER AND NATURAL RESOURCE MANAGEMENT. AMONG ALL HUMAN INDUCED DISTURBANCES, LAND USE CHANGES SUPPOSE ONE OF THE LARGEST CAUSES OF FUNCTIONING IMPAIRMENT FOR RIVERS, ESTUARIES AND COASTAL AREAS. REVERSAL OF LAND USE COVER TO A LESS-DEVELOPED STATE IS RARELY POSSIBLE, AND SO IMPROVEMENT OF CONDITION LARGELY DEPENDS ON BEST MANAGEMENT PRACTICES AND IMPROVEMENTS IN LANDSCAPE MANAGEMENT AND DESIGN. FOR THESE PRACTICES TO BE EFFECTIVE, THEY NEED TO ACKNOWLEDGE WHICH ARE THE KEY MECHANISMS BY WHICH IMPAIRMENT IS CAUSED. HOWEVER MECHANISMS ARE STILL NOT COMPLETELY UNDERSTOOD DUE TO ANALYTICAL PROBLEMS. ENVIRONMENTAL HYDRAULICS, ECO-HYDROLOGY AND ENVIRONMENTAL ASSESSMENT ARE KEY DISCIPLINES FOR INCREASING THE UNDERSTANDING OF CATCHMENT PROCESSES AND FOR THE DEVELOPMENT OF METHODOLOGIES AND TOOLS FOR WATER AND NATURAL RESOURCE MANAGEMENT. IN THIS REGARD, RIVERLANDS AIMS AT INCREASING THE UNDERSTANDING OF HOW CURRENT AND PAST LAND USES AFFECT RIVER PROCESSES,	BARQUIN ORTIZ	JOSE		UNIVERSIDAD DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	01-01-13	31-12-15	MINECO	Spain

BIO2008-02723		ELECTRICITY AND HYDROGEN PRODUCTION FROM WASTEWATER USING MICROBIAL FUEL CELL TECHNOLOGY	BIODIVERSITY\THREATENED HABITATS\ABIOTIC STRESS\HALOPHYTES\GYPSOPHYTES\XEROPHYTES\STRESS TOLERANCE\SOIL BIOLOGICAL INDEXES\OSMOLYTES\ANTIOXIDANT SYSTEMS	THE CONCEPT OF RENEWABLE SOURCES OF ENERGY CAN BE ALTERED BY A RECENT AND EXCITING FINDING: FE(III)-REDUCING BACTERIA OF THE GENUS GEOBACTER CAN DIRECTLY TRANSFER ELECTRONS TO SOLID CONDUCTIVE SURFACES AS GRAPHITE SO CLEAN ELECTRICITY CAN BE HARVESTED THROUGH DEVICES AS MICROBIAL FUEL CELLS (MFC). MFC CAN BE MODIFIED AND TRANSFORMED INTO A BIOELECTROCHEMICALLY ASSISTED MICROBIAL REACTOR (BEAMR) WITH THE PURPOSE OF GENERATE HYDROGEN FROM H+ REDUCTION IN THE CATODE. ALL THESE TYPES OF FUEL CELLS CAN BE FUELLED BY A NUMBER OF ORGANIC COMPOUNDS THAT MICROORGANISM OXIDIZE (ACETATE, GLUCOSE, AND MORE COMPLEX MIXTURES OF ORGANIC MATTER). THE MAIN GOAL OF THIS RESEARCH PROPOSAL IS TO USE GEOBACTER TO CONVERT THE CHEMICAL ENERGY STORED IN ORGANIC MATTER FROM WASTEWATER INTO ELECTRICITY AND HYDROGEN. ONE OF THE MOST EXCITING FEATURES OF THIS TECHNOLOGY IS THE POSSIBILITY OF HARVESTING CLEAN ENERGY FROM WASTE DURING ITS TREAMENT, SO THE CLASSICAL METHANE-GENERATING PHASE IN WASTEWATER TREATMENT COULD BE ERASED.	ESTEVE NUÑEZ	ABRAHAM		UNIVERSIDAD DE ALCALA	DPTO. QUIMICA ANALITICA E INGENIERIA QUIMICA	FACULTAD DE QUIMICA	01-01-09	31-12-12	MINECO	Spain
BIO2009-07766		ENVIRONMENTAL BIOTECHNOLOGY: A PARADIGM OF NOVEL BIOTECNOLOGY STRATEGIES FOR BIOREMEDIATION OF WASTE WATERS POLLUTED BY METALS AND/OR PHENOLIC COMPOUNDS.	BIODIVERSITY\CLIMATE CHANGE\DROUGHT\FORESTS\FOREST DIE-BACK\MORTALITY\RECRUITMENT	GLOBAL INDUSTRIALISATION HAS LED TO THE RELEASE OF HUGE AMOUNTS OF TOXIC COMPOUNDS TO THE BIOSFERE, THREATENING BOTH PUBLIC HEALTH AND ENVIRONMENTAL QUALITY. AMONG THESE COMPOUNDS, HEAVY METALS AND HALOAROMATICS ARE SOME OF THE MOST TOXIC AND PERSISTENT (WWW.EPA.GOV). IN DEVELOPED COUNTRIES, REMEDIATION OF WASTE WATERS IS MANDATORY BY RESTRICTIVE ENVIRONMENTAL LAWS. BIOREMEDIATION, I.E., THE USE OF MICROORGANISMS AND PLANTS FOR ENVIRONMENTAL CLEARING, IS AN ECOLOGICAL AND LOW-COST ALTERNATIVE TO THE MOST TRADITIONAL PHYSICO-CHEMICAL REMEDIATION TECHNIQUES. BACTERIA HAVE BEEN SUCCESSFULLY USED BOTH IN THE REMEDIATION OF ORGANICS (DIAZ, 2004) AND HEAVY METALS (VALS AND DE LORENZO, 2002). MORE RECENTLY, TRANSGENIC ROOTS HAVE REVEALED AS A NEW TOOL IN BIOREMEDIATION AND PRODUCTION OF VALUABLE METABOLITES (GUILLON ET AL., 2005). IN THIS PROJECT, WE PROPOSE TWO ALTERNATIVE BIOLOGICAL SYSTEMS FOR REMEDIATION OF POLLUTED EFFLUENTS: 1. USE OF MICROORGANIMS FOR BIOREMEDIATION OF HEAVY METALS AND PHENOLICS FROM INDUSTRIAL EFFLUENTS. BACTERIA BELONGING TO DIFFERENT GENERA (OCHROBACTRUM, RHIZOBIUM, AND GENETICALLY MODIFIED E. COLI AND RHIZOBIUM) ABLE TO BIOSORB HIGH AMOUNTS OF HEAVY METALS ON THEIR CELL SURFACE (CARRASCO ET AL., 2005, PAJUELO ET AL, 2008, RODRIGUEZ-LLORENTE ET AL., SUBMITTED) ARE AVAILABLE , AND THEY	PAJUELO DOMINGUEZ	ELOISA		UNIVERSIDAD DE SEVILLA	DPTO. MICROBIOLOGIA Y PARASITOLOGIA	FACULTAD DE FARMACIA	01-01-10	31-12-12	MINECO	Spain
CGL2007-64729		SEDIMENTATION OF PARTICULATE ORGANIC CARBON AND AIR-WATER CO2 EXCHANGE IN STRATIFIED RESERVOIRS WITH DIFFERENT NET COMMUNITY METABOLISM	STREAM\PHYSICAL HABITAT\CHANNEL COMPLEXITY\WOODY DEBRIS\ECOSYSTEM FUNCTIONING\STREAM COMMUNITIES\REHABILITATION	IN MARINE SYSTEMS, LARGE-SCALE CORRELATIONS BETWEEN SEDIMENTATION AND AIR-WATER CO2 EXCHANGE SUGGEST THAT SEDIMENTATION IS AN IMPORTANT DRIVER OF CO2 FLUX WITH THE ATMOSPHERE. HOWEVER, FOR FRESHWATER ECOSYSTEMS, THIS PROCESS HAS BEEN DEMONSTRATED TO ACT AS A FACTOR CONTROLLING CO2 FLUX ONLY IN SMALL-SCALE MESOCOSM EXPERIMENTS. THIS PROJECT AIMS TO ESTIMATE THE IMPORTANCE OF AIR-WATER CO2 EXCHANGE IN RELATION TO CARBON SEDIMENTATION RATES IN STRATIFIED RESERVOIRS WITH DIFFERENT NET COMMUNITY METABOLISM. CARBON FLUXES DUE TO BOTH PROCESSES WILL BE QUANTIFIED AND SEDIMENTATION CONTROL WILL BE TESTED BY SIMULTANEOUS MEASUREMENTS OF AIR-WATER CO2 EXCHANGE AND PARTICULATE ORGANIC CARBON SEDIMENTATION RATES. PLANKTON COMMUNITY STRUCTURE AND PRODUCTIVITY WILL BE STUDIED THROUGH THE STRATIFIED PERIOD TO ANALIZE THEIR IMPORTANCE REGULATING VERTICAL FLUX OF CARBON. FINALLY, CO2 VARIABILITY WILL BE EXAMINED BY USING A COUPLED PHYSICAL-BIOGEOCHEMICAL MODEL IN ORDER TO EVALUATE CONTROL MECHANISMS AND SIMULATE HYPOTHETIC FUTURE EMISSION SCENARIOS.	GALVEZ LORENTE	JOSE ANGEL		UNIVERSIDAD DE CADIZ	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	01-10-07	30-06-11	MINECO	Spain

CGL2007-64177		PHOSPHORUS AS A FACTOR OF INTERDEPENDENCE BETWEEN BIOGEOCHEMISTRY AND POPULATION DYNAMICS IN ALPINE LAKES AT DIFFERENT TIME SCALES	UV RADIATION\XEROPHYTE\MESOPHYLLOUS\PHENOL\CLIMATE CHANGE\DROUGHT	IT CONSTITUTES A CHALLENGE FOR CURRENT ECOLOGY DISSECTING AND OUTLINING WITH ENOUGH DETAIL THE INTERDEPENDENCE BETWEEN BIODIVERSITY AND FUNCTIONALITY OF THE ECOSYSTEMS OR, IN OTHER WORDS, BETWEEN BIOGEOCHEMISTRY AND POPULATION DYNAMICS. IN LAKES MUCH IS KNOWN ON PHOSPHORUS, PARTICULARLY AFTER THE RESEARCH EFFORT MAKE OWING TO THE PROBLEMS OF EUTROPHICATION. IN ADDITION TO ITS CENTRAL ROLE IN LAKE PRODUCTIVITY, HIS INFLUENCE ON SHAPING COMMUNITIES AS LAKE TROPHIC STATUS INCREASED. DESPITE THIS KNOWLEDGE, WHEN WE MOVE AWAY FROM THE SYSTEMS SUBMITTED TO STRONG HUMAN INFLUENCE AND CONCENTRATE ON NATURAL PHOSPHORUS LEVELS, STILL THERE IS MUCH TO STUDY FOR UNDERSTANDING THE BIOGEOCHEMICAL AND ECOLOGICAL AND EVOLVING MECHANISMS IN WHICH PHOSPHORUS PLAYS A RELEVANT ROLE. THE ALPINE LAKE CONTEXT IS PARTICULAR SUITABLE TO INVESTIGATE SOME ASPECTS AND AMONG THEM WE SELECTED THREE FOR THIS PROJECT. THE OBJECTIVE INCLUDE: A) TO DETERMINE THE CLIMATIC FACTORS THAT DIRECTLY OR INDIRECTLY CONTROL THE RELEVANCE OF THE PHOSPHORUS LOADING FORM OUTSIDE THE SYSTEM (ATMOSPHERIC AND FROM CATCHMENT) AND INTERNAL TO IT; B) TO DETERMINE THE RELEVANCE OF PHOSPHORUS AVAILABILITY WITH RESPECT TO OTHER	CATALAN AGUILA	JORDI		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	CENTRO DE ESTUDIOS AVANZADOS DE BLANES (CEAB)	CENTRO DE ESTUDIOS AVANZADOS DE BLANES (CEAB)	01-10-07	30-09-10	MINECO	Spain
CGL2007-64583		ADAPTATION MECHANISMS OF MEDITERRANEAN SPECIES TO ULTRAVIOLET-B RADIATION AND ITS IMPORTANCE IN RELATION TO A DECREASE IN WATER AVAILABILITY AS A CONSEQUENCE OF CLIMATE CHANGE	CLIMATE CHANGE\FLOW DISCONTINUITY\METABOLISM\COMMUNITY STRUCTURE	DURING THE LAST YEARS, THE INTEREST ON THE UVB RADIATION EFFECT ON ORGANISMS HAS INCREASED DUE TO THE RISE IN THE UVB RADIATION FLUX THAT REACHES THE EARTH CAUSED BY THE STRATOSPHERIC OZONE DEPLETION. ALTHOUGH EMISSIONS OF CFCS (THE MAIN CAUSE OF THIS DEPLETION) WERE BANNED IN 1987, SOME STUDIES SUGGEST THAT THE MOST SEVERE DEPLETIONS WILL OCCUR DURING 2010-2019. ON THE OTHER HAND, DESPITE THE LEVELS OF UVB RADIATION REACHING THE BIOSPHERE WILL TEND TO RECOVER, MODELS PREDICT THAT AS A CONSEQUENCE OF CLIMATE CHANGE: A) WATER AVAILABILITY, ONE OF THE MOST IMPORTANT FACTORS MODULATING PLANT RESPONSES TO UVB RADIATION, WILL BE REDUCED IN EXTENSIVE AREAS OF THE PLANET AS FOR INSTANCE THE MEDITERRANEAN REGION, AND B) SOME SPECIES WILL MIGRATE UPWARDS BEING EXPOSED TO HIGHER LEVELS OF UVB RADIATION. THUS, WE AIM TO INVESTIGATE THE MECHANISMS OF PLANT ADAPTATION TO UVB RADIATION, FOCUSING ON TWO MAIN POINTS: 1) TO ESTABLISH WHETHER THE COMPOUNDS THAT ABSORB THE UVB RADIATION IN THE LEAVES MAY ACT AS A BIOLOGICAL INDICATOR OF THE UVB RADIATION LEVELS. THIS WILL BE IMPORTANT SINCE WE HAVE AN INSUFFICIENT KNOWLEDGE ABOUT THE HISTORICAL VARIATIONS OF THE UVB	LLORENS GUASCH	LAURA		UNIVERSITAT DE GIRONA	DPTO. CIENCIAS AMBIENTALES	FACULTAD DE CIENCIAS	01-10-07	30-09-10	MINECO	Spain
CGL2007-63453		EVALUATION OF RUNOFF AND EROSION IN AGRICULTURAL AREAS SUPPORTED BY HYDROLOGIC SIMULATION TOOLS	RAINFALL-RUNOFF TRANSPORT\POLLUTANT TRANSPORT\EVOLUTIVE COMPUTING	THE PRESENT PROJECT IS DIRECTLY RELATED TO A PREVIOUS ONE, WHICH WAS APPROVED AS A BRIDGE PROJECT CGL2006-0723/CLI (PROYECTO PUENTE). IT HAS BEEN IMPROVED BY TAKING INTO CONSIDERATION EVERY RECOMMENDATION AND SUGGESTION MADE, WHICH HAVE BEEN INCLUDED IN THIS NEW PROPOSAL. NOW, IT IS SUBMITTED TO THE NATIONAL SUBPROGRAM OF EARTH SCIENCES (SUBPROGRAMA NACIONAL DE CIENCIAS DE LA TIERRA), WHERE THIS PROJECT FITS BETTER. THE EFFECT OF THE AGRICULTURAL ACTIVITY ON HYDROLOGICAL RESOURCES AND SOILS IS NOT WELL KNOWN YET. IN ADDITION, IT IS VERY DIFFICULT TO FORESEE OR ESTIMATE THE CONSEQUENCES THAT LAND USES AND LAND MANAGEMENT CHANGES MAY HAVE IN THE (AGRO)ECOSYSTEM. THIS ISSUE IS NOWADAYS PARTICULARLY IMPORTANT IN THE CONTEXT OF A POSSIBLE CLIMATIC GLOBAL CHANGE AND OF LARGE-SCALE DESERTIFICATION RISKS. THE STUDY OF THE HYDROLOGICAL BEHAVIOUR OF AGRICULTURAL WATERSHEDS MAY BE ADDRESSED IN TWO WAYS: BY FIELD OR IN SITU EXPERIMENTATION, AND INDIRECTLY BY PREDICTION TOOLS (E.G., MODELS). A REMARKABLE EXAMPLE OF THE FORMER ONE IS THE NETWORK OF AGRICULTURAL EXPERIMENTAL WATERSHEDS OPERATED BY THE GOVERNMENT OF	CASALI SARASIBAR	JAVIER		UNIVERSIDAD PUBLICA DE NAVARRA	DPTO. PROYECTOS E INGENIERIA RURAL	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-10-07	30-05-11	MINECO	Spain

CGL2007-66644-C04-04		SPACE-TEMPORARY BEHAVIOUR AND MODELS OF THE SEDIMENT TRASPORT ON DIFFERENT LAND USES: THE ROLE OF THE FOREST FIRES	HYDROGEOLOGY\HYDRAULIC TESTS\EFFECTIVE PARAMETERS\HETEROGENEITY	WILDFIRES OR FOREST FIRES CONSTITUTE ONE OF THE MOST FREQUENT ENVIRONMENTAL RISKS IN THE MEDITERRANEAN AREA WHERE, IN ADDITION, THE CURRENT SCENARIO OF ABANDONED FARMS AND PLANT RE-COLONIZATION IS FAVOURABLE TO AN INCREASE IN FIRE RISK. WITH MORE THAN 10.000 WILDFIRES PER YEAR AND A BURNT SURFACE IN SOME YEARS OF MORE THAN 500.000 HAS, SPAIN IS ONE OF THE MOST FIRE-AFFECTED COUNTRIES IN THE MEDITERRANEAN BASIN. FIRE BRINGS A SERIES OF ENVIRONMENTAL ALTERATIONS THAT LEAD TO A CLEAR INCREASE IN THE SOIL EROSION PROCESSES, DUE TO BOTH THE INTENSIFICATION OF THE SEDIMENT PRODUCING MECHANISMS AND THE SPEEDING-UP AND INCREASE OF THE SHALLOW RILL PROCESSES. THE ALTERATION, WHEN NOT THE DISAPPEARANCE, OF THE VEGETATION COVER CAUSES AN INCREASE IN THE RAIN EROSIVITY VALUES, OWED TO THE INCREASE OF THE PRECIPITATION¿S KINETIC ENERGY, WHICH TRIGGERS OFF SPLASH MECHANISMS ON THE SOIL SURFACE AND COMPACTS IT BY MEANS OF THE RAIN IMPACT OR THROUGH THE APPEARANCE OF HYDROPHOBIC LEVELS, DECREASING THE WATER INFILTRATION COEFFICIENTS AND FAVOURING THE CREATION OF SURFACE FLOWS CARRYING THE SEDIMENT PRODUCED. HOWEVER, THE PRESENCE OF IN SITU BURNT VEGETATION STRUCTURES AFTER THE FIRE CAN SLOW THIS EROSIVE PROCESS DOWN, INTERCEPTING THE RAIN, REDUCING ITS KINETIC ENERGY AND CONVEYING A PART OF THE PRECIPITATION TOWARDS THE SOIL THROUGH THE CORTICAL RUN-OFF.	ECHEVERRIA ARNEDO	MARIA TERESA		UNIVERSIDAD DE ZARAGOZA	OPTO. GEOGRAFIA Y ORDENACION DEL TERRITORIO	FACULTAD DE FILOSOFIA Y LETRAS	01-10-07	30-09-10	MINECO	Spain
CGL2007-60355		TREATED WASTEWATERS USED FOR IRRIGATION: CONTAMINANT AVAILABILITY ASSOCIATED WITH DISSOLVED ORGANIC MATTER AND SURFACTANTS	FLASH FLOODS\DENDROGEOMORPHOLOGY\DEBRIS FLOWS\FLOOD RISK	TREATED WASTEWATERS HAVE BEEN INCREASINGLY USED FOR AGRICULTURAL IRRIGATION DUE THE WATER SHORTAGE IN THE MEDITERRANEAN BASIN. THE IRRIGATION WITH TREATED WASTEWATER PROVIDES SOME FERTILITY TO THE SOIL BUT MAY NEGATIVELY AFFECT OTHER SOIL ASPECTS, SUCH AS ITS PHYSICOCHEMICAL AND HYDRAULIC PROPERTIES, AS WELL AS THE RETENTION, DEGRADATION AND MOBILITY OF COMPOUNDS ORIGINATING FROM FERTILIZERS AND PESTICIDES. IF THE MOBILITY OF THESE COMPOUNDS IS INCREASED THEY WILL ENTER THE SATURATED ZONE, WITH THE CORRESPONDING CONTAMINATION AND LATER REQUIREMENT OF REMEDIATION MEASURES. THE PROJECT WILL THEREFORE EVALUATE THE RISK ASSOCIATED WITH THE IRRIGATION WITH TREATED WASTEWATERS, ESPECIALLY IN WHAT CONCERNS THEIR CONTENT IN DISSOLVED ORGANIC MATTER AND SURFACTANTS, AND THE EFFECT ON SOIL PROPERTIES AND THE BEHAVIOUR OF CONTAMINANTS, IN PARTICULAR PESTICIDES AND METALS.	PEÑA HERAS	Mª ARANZAZU		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION EXPERIMENTAL DEL ZAIDIN (EEZ)	ESTACION EXPERIMENTAL DEL ZAIDIN (EEZ)	01-10-07	30-06-11	MINECO	Spain
CGL2007-61151		CLIMATE VARIABILITY IMPACTS ON INTERANNUAL AND SEASONAL PREDICTABILITY OF IBERIAN RIVER FLOWS.	CLIMATE\DATA BASE\CLIMATE CHANGE\PRECIPITATION\SPAIN	THIS PROJECT IS A CONTINUATION OF OTHER SUPPORTED PROJECTS BEING CARRIED OUT BY THE SAME RESEARCH GROUP AND REPRESENTS A NATURAL CONTINUATION OF RESEARCH ON CLIMATE VARIABILITY OF THE IBERIAN PENINSULA ON SEASONAL, INTERANNUAL AND DECADAL SCALES, INCLUDING THE STUDY OF THEIR FUNDAMENTAL CAUSES. BASED ON PREVIOUS RESULTS BY THIS GROUP AND OTHER RESEARCHERS, WE PLAN TO STUDY IBERIAN STREAMFLOWS FROM A PRACTICAL PERSPECTIVE, TAKING INTO ACCOUNT THEIR HIGH- AND LOW-FREQUENCY COMPONENTS, AND EXPLORE THE POSSIBILITY OF SEASONAL AND ANNUAL STREAM-FLOW PREDICTION. SPECIFICALLY, WE INTEND TO EXPLORE THE IMPACTS OF SEASONAL ATLANTIC SST, NAO AND ENSO ON STREAMFLOW PREDICTION IN SUBSEQUENT SEASONS. THE RELATIVE CONTRIBUTION OF ANNUAL AND SEASONAL PREDICTABILITY WILL BE STUDIED FOR EACH SEASON. WE WILL DEVELOP A STATISTICAL PREDICTION MODEL OF STREAMFLOWS INCLUDING ALL IDENTIFIED SOURCES OF PREDICTABILITY, COMPOSED OF A DETERMINISTIC COMPONENT, GIVEN BY THE LINEAR MODEL WHICH WILL INTEGRATE THE ANNUAL AND SEASONAL PREDICTION, AND A PROBABILISTIC PREDICTION WHICH WILL INCLUDE THE NON-LINEAR INFLUENCE OF THE SST, NAO AND ENSO. SINGULAR SPECTRAL ANALYSIS (SSA) WILL BE USED TO OBTAIN THE OSCILLATORY MODES AND TRENDS OF THE STREAMFLOWS SERIES. THE FILTERED SERIES WILL BE MODELLED BY MEANS OF AUTO-REGRESSIVE MOVING-	CASTRO DIEZ	YOLANDA		UNIVERSIDAD DE GRANADA	FACULTAD DE CIENCIAS	FACULTAD DE CIENCIAS	01-10-07	31-12-10	MINECO	Spain

CGL2007-61231		EVOLUTION AND BIOGEOGRAPHY OF CIRCUM-MEDITERRANEAN CIPRINIDS (CYPRINIDAE ACTINOPTERYGII): PHYLOGENIES, SPECIATION, CONSERVATION AND TESTING THE LAGO MARE DISPERSAL HYPOTHESIS	SOIL USES\WETLANDS\ECOTOXICOLOGY\AMPHIBIAN	CIRCUM-MEDITERRANEAN RIVER COURSES COMPRISE ONE OF THE RICHEST AND ENDEMIC FRESHWATER FISH FAUNA, BEING THE FAMILY CYPRINIDAE ONE OF THE MAIN FRESHWATER FISH GROUP INHABITING THESE WATER SYSTEMS. CYPRINIDS ARE STRICT FRESHWATER ORGANISMS AND THEIR DISPERSION IS LIMITED TO FRESHWATER AND CONTINENTAL ROUTES. THEREFORE, THESE SPECIES ARE CONSIDERED ESPECIALLY ACCURATE TO TEST BIOGEOGRAPHICAL HYPOTHESIS. IN ADDITION, FRESHWATER FISH COMMUNITIES HAVE RECENTLY EXPERIENCED A STRONG MODIFICATION CAUSED BY CHANGES IN AGRICULTURE PRACTICES, WHICH NOW REQUIRE HIGHER AMOUNTS OF WATER, PESTICIDES AND FERTILIZERS. FOR ALL THESE REASONS CYPRINIDS ARE CONSIDERED AS AN IDEAL GROUP TO CARRY ON STUDIES ON EVOLUTION, BIOGEOGRAPHY AND CONSERVATION. IN THIS PROJECT WE ATTEMPT TO CONSTRUCT THE MOST COMPLETE PHYLOGENY OF THE CYPRINIDS SPECIES INHABITING THE CIRCUM-MEDITERRANEAN AREA, THE ATLANTIC EUROPE, AND SOME SPECIES ACROSS TROPICAL AFRICA, AND ASIA. WE WILL USE DIFFERENT MOLECULAR MARKERS TO ADDRESS THE COMPLETE PHYLOGENY OF CYPRINIDS, AND TO ELUCIDATE THEIR EVOLUTIONARY HISTORY. ONCE THE CYPRINID PHYLOGENY WILL BE	DOADRIO VILLAREJO	IGNACIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	MUSEO NACIONAL DE CIENCIAS NATURALES (MNCN)	MUSEO NACIONAL DE CIENCIAS NATURALES (MNCN)	01-10-07	30-09-10	MINECO	Spain
CGL2007-60565		ASSESSING OF BIOTIC AND ABIOTIC FACTORS RELATED WITH EDWARDSIELLOSIS DISEASE OCCURRING IN WILD EEL POPULATIONS FROM RAMSAR WETLANDS	SYSTEMATICS\MOLECULAR PHYLOGENY\MOLLUSCS\GASTROPODS\MITOCHONDRIAL GENOMES\NUCLEAR GENES\GENOMIC REARRANGEMENTS	THIS PROJECT STUDIES DISTRIBUTION, RESERVOIRS AND SURVIVAL OF EDWARDSIELLA TARDA, WHICH IS AN EEL PATHOGEN, IN THE NATURAL ENVIRONMENT AS WELL AS THE INFLUENCE OF SOME OTHER BIOTIC AND ABIOTIC FACTORS OF WATER (WASTEWATER POLLUTION; AMMONIA; PH AND TEMPERATURE) ON THE BACTERIAL PATHOGEN SURVIVAL IN WATER AND ON THE YOUNG EEL SUSCEPTIBILITY TO THE EDWARDSIELLOSIS DISEASE. AT PRESENT WE KNOW THAT YOUNG WILD EELS (¿BROWN EELS¿) MOSTLY SUFFER BACTERIAL DISEASES, AMONG THEM EDWARDSIELLOSIS DISEASE, IN COMPARISON WITH ADULT WILD EELS (¿SILVER EELS¿), SO THIS KIND OF STUDIES ARE NECESSARY TO DEVELOP CONSERVATION AND MANAGEMENT MEASURES FOR THE SPECIES ANGUILLA ANGUILLA, AND ALSO TO DESIGN PROGRAMS TO REDUCE MORTALITY RATES OF WILD EELS IN THEIR HABITATS. THUS, THE PROPOSED PROJECT WILL BE CARRIED OUT ACCORDING TO THE FOLLOWING OBJECTIVES: 1. TO DETERMINE THE PRESENCE OF E. TARDA IN ALBUFERA LAKE WATER, AND ITS RELATIONSHIP WITH SOME BIOTIC AND ABITOTIC FACTORS OF WATER (WASTEWATER POLLUTION; AMMONIA; PH AND TEMPERATURE). 2. TO DETERMINE THE PRESENCE OF E. TARDA IN THE INTESTINES FROM WILD FISH CAUGHT IN ALBUFERA LAKE 3. TO KNOW THE SURVIVAL AND INFECTIVITY POTENTIAL OF E. TARDA CELLS MAINTAINED IN NATURAL WATER FROM ALBUFERA LAKE UNDER STARVATION CONDITIONS. 4. TO DETERMINE THE INFLUENCE OF PH, AMMONIA AND	ESTEVE SANCHEZ	CONSUELO		UNIVERSIDAD DE VALENCIA	DPTO. MICROBIOLOGIA	FACULTAD DE BIOLOGIA	01-10-07	30-09-10	MINECO	Spain
CGL2007-65549		EFFECTS OF FLUX INTERMITTENCY ON THE STRUCTURAL AND FUNCTIONAL CONTINUITY OF FLUVIAL SYSTEMS	DISPERSAL\RESTING EGGS\BIODIVERSITY\LAKES\SEDIMENTS	RISING EVIDENCES INDICATE THAT THE TEMPERATE RIVER SYSTEMS, AND IN PARTICULAR THOSE IN THE MEDITERRANEAN, CAN EXPERIMENT A GROWING VARIABILITY IN RUNOFF AS A RESULT OF THE GLOBAL CHANGE IN RAINFALL INTENSITY AND FREQUENCY. THE HIGHER VARIABILITY MAY CAUSE A HIGHER EXTENSION OF PERIODS WITH LOW FLOW OR DROUGHT AND THE OCCURRENCE OF FLOW INTERMITTENCY AND THE INTERRUPTION OF HYDROLOGICAL CONNECTIVITY IN THE RIVER NETWORK. THE EFFECTS WILL BE ANALYSED ON THE COMMUNITY STRUCTURE OF ALGAE, MACROINVERTEBRATES AND FISH, BEFORE AND AFTER THE EXTREME EVENTS OF LOW FLOW (TEMPORARY WATER COURSES) AND DROUGHT (DURING SUMMER). THESE ANALYSES WILL BE DEVELOPED IN HEADWATER REACHES, WHICH ARE SENSITIVE AREAS TO THE BIOLOGICAL DIVERSITY. THE RESULTS WILL CONTRIBUTE TO THE COMPREHENSION OF THE EFFECTS OF CLIMATE CHANGE ON MEDITERRANEAN STREAM ECOSYSTEMS.	SABATER CORTES	SERGI		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-10-07	30-09-10	MINECO	Spain

CGL2007-64551		STUDY OF THE PRESENCE AND FATE OF EMERGING CONTAMINANTS IN GROUND AND SURFACE WATER AND DEVELOPMENT OF ANALYTICAL TOOLS FOR THEIR ENVIRONMENTAL CONTROL	SEDIMENTATION\ORGANIC CARBON\CO2\AIR-WATER EXCHANGE\RESERVOIRS	THE MAIN OBJECTIVE OF THIS PROJECT IS TO CONTRIBUTE TO FILL THE DEEP KNOWLEDGE GAPS EXISTING IN RELATION TO THE PRESENCE AND FATE OF EMERGING CONTAMINANTS IN THE AQUATIC ENVIRONMENT AND TO CONTRIBUTE, IN THIS WAY, TO PROTECT HUMANS AND THE ENVIRONMENT AGAINST THE POTENTIALLY DANGEROUS CONSEQUENCES OF THE EXPOSITION TO THESE COMPOUNDS, IN AN EFFORT, AT THE SAME TIME, TO IMPROVE THE QUALITY AND THE SUSTAINABILITY OF THE WATER RESOURCES. TO ACHIEVE THESE OBJECTIVES THE FOLLOWING ACTIVITIES ARE PLANNED: - TO DEVELOP SENSITIVE AND RELIABLE ANALYTICAL METHODS FOR THE DETERMINATION OF VARIOUS CLASSES OF EMERGEING CONTAMINANTS IN ENVIRONMENTAL MATRICES, - TO APPLY THESE ANALYTICAL METHODS IN SELECTED SPANISH GEOGRAPHICAL AREAS - TO DETERMINE THE OCCURRENCE OF THE EMERGING CONTAMINANTS IN THE STUDIED AREAS - TO INVESTIGATE THE FATE OF THESE CONTAMINANTS IN GROUND WATER-SEDIMENT/SOIL-SURFACE WATER SYSTEMS, - TO EVALUATE THE BIODISPONIBILIDAD OF EMERGING CONTAMINANTS IN THE AQUATIC ENVIRONMENT - TO STUDY THEIR TOXICITY - TO INVESTIGATE THE PROCESSES (BIODEGRADACION, FOTODEGRADACION) AND CONDITIONS IN WHICH THESE COMPOUND ARE DEGRADATED, AS WELL AS THE METABOLITES AND THE DEGRADATION PRODUCTS FORMED, - TO IDENTIFY THE CONTAMINANTS AND THE GEOGRAPHICAL AREAS THAT DESERVE SPECIAL ATTENTION	BARCELO CULLERES	DAMIA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE INVEST. QUIMICAS Y AMBIENTALES J P. VILA (IIQAB)	INSTITUTO DE INVEST. QUIMICAS Y AMBIENTALES J P. VILA (IIQAB)	01-10-07	30-09-12	MINECO	Spain
CGL2007-66687-C02-01		INFLUENCE OF THE ANTHROPIC IMPACT ON THE CONTAMINATION IN MEDITERRANEAN COASTAL WETLAND: APARISON OF EMERGING CONTAMINANTS	HUMAN PRESSURE\CONSERVATION\SOIL SEALING\MEDITERRANEAN COASTAL WETLANDS\LAND USES\WATER EROSION\HYDROLOGY\SOIL AND WATER QUALITY	WETLANDS CONSTITUTE ONE OF THE RICHEST AND MORE PRODUCTIVE ECOSYSTEMS OF THE PLANET BECAUSE OF THEIR GREAT BIODIVERSITY. HOWEVER, IN THE LAST 50 YEARS, MORE THAN 60 % OF THE COASTAL WETLANDS HAVE DISAPPEARED IN SPAIN PRESSED BY DEVELOPMENT PROGRAMMES AND HIGH CONTAMINATION LEVELS. THE IMPORTANCE OF THEIR CONSERVATION HAS BEEN REFLECTED ON DIFFERENT NATIONAL OR INTERNATIONAL AGREEMENTS AND DIRECTIVES. FOR THE FULLFILMENT OF THIS PROJECT, TWO WETLANDS CHARACTERISTIC OF THE MEDITERRANEAN AREA HAVE BEEN SELECTED, TO ENSURE A WIDE APPLICABILITY OF THE RESULTS THAT WILL BE OBTAINED. THE OLIVA-PEGO MARSH AND L¿ALBUFERA LAGOON ARE REPRESENTATIVE ECOSYSTEMS OF A LARGE NUMBER OF WETLANDS AND SUPERCIAL LAGOONS IN EUROPE. THESE SYSTEMS HAVE BEEN PROTECTED BY DIFFERENT OFFICIAL FIGURES SUCH AS WETLANDS OF INTERNATIONAL IMPORTANCE (RAMSAR SITE), SPECIAL PROTECTION AREAS (SPAS) FOR BIRDS, AND NATURAL PARKS OR RESERVES. IN SPITE OF THIS, THESE TWO WETLANDS ARE VERY DEGRADED IN ECOLOGICAL TERMS SHOWING ALMOST THE WHOLE SPECTRUM OF PROBLEMS RELATED TO THE INCREMENT OF CONTAMINANTION, SINCE THESE NATURAL SPACES ARE SURRONDED BY VILLAGES AND INDUSTRIES THAT DISCHARGE UNTREATED WASTES, AND RECEIVE AN EXCESS OF TOXIC PRODUCTS COMING FROM THE INTENSIVE AGRICULTURE. THE OBJECTIVE OF THIS POJECT IS TO STUDY THE INFLUENCE OF THE ANTHROPIC IMPACT IN THE CONTAMINATION OF COASTAL MEDITERRANEAN WETLANDS THROUGH THE	PICO GARCIA	YOLANDA		UNIVERSIDAD DE VALENCIA	DPTO. MEDICINA PREVENTIVA Y SALUD PUBLICA, CIENCIAS DE LA ALIMENTACION, TOXICOLOGIA Y MEDICINA LEGAL	FACULTAD DE FARMACIA	01-10-07	31-12-10	MINECO	Spain
CGL2007-61482		DEVELOPMENT OF RAPID EVALUATION METHODS TO DETERMINE WETLAND DEGRADATION DEGREE: POTENTIAL USE OF AMPHIBIANS AS WETLAND DEGRADATION BIOINDICATORS AND A PROPOSAL TO USE POLLUTION BIOMARKERS IN WETLAND	ECOLOGICAL STATUS\RIVERS\PREDICTION\MACROINVERTEBRATE\WATER FRAMEWORK DIRECTIVVE	WETLANDS ARE ONE OF THE MOST FRAGILE AND ENDANGERED ECOSYSTEMS AND ARE ECOLOGICALLY AND ECONOMICALLY IMPORTANT IN AGRICULTURAL LANDSCAPES. THEY ARE HIGHLY PRODUCTIVE SYSTEMS THAT PROVIDE HABITAT AND FOOD FOR MANY WILDLIFE SPECIES. THEY ARE ALSO IN INTIMATE CONTACT WITH WATER DRAINING AGRICULTURAL WATERSHEDS, WHICH ARE SOURCES OF NUTRIENTS AND PESTICIDES. THEY HAVE SOME CHARACTERISTICS THAT MADE THEM TO BE ESPECIALLY VALUABLE, HOWEVER THESE CHARACTERISTICS ALSO MAKE THEM MORE DIFFICULT TO BE STUDIED AND TO BE UNDERSTAND. TO FULFIL THE KNOWLEDGE ON WETLAND CHANGES, THE HUMAN ACTIVITY ALTERATIONS MUST BE ALSO INCLUDED. THE INCREASE IN WETLAND KNOWLEDGE HAS BEING PROMOTED BY ALL THE ADMINISTRATIONS, BUT NO SPECIFIC TOOLS HAVE BEEN DEVELOPED. MOST OF THE WETLANDS IN JAEN PROVINCE ARE AFFECTED BY THE INTENSIVE OLIVE AGRICULTURE AND BY THE HERBICIDES AND PESTICIDES THAT ARE REGULARLY USED. THE AIM OF THIS PROJECT IS TO OBTAIN INFORMATIONS ABOUT HOW THE AMPHIBIAN POPULATIONS COULD BE AFFECTED BY XENOBIOTICS REGULARLY USED IN OLIVE TREE AGRICULTURE, MOREOVER WE WANT TO ELABORATE STRATEGIES TO OBTAIN USEFUL AND RAPID TOOLS THAT COULD BE USED TO EVALUATED THE DEGRADATION STAGE IN WETLANDS. AMPHIBIANS HAVE BEEN CHOSEN DUE TO THEIR LIFE CYCLE DEVELOPED IN AQUATIC AND LAND SYSTEMS. WE CONSIDER THEM OPTIMAL SPECIES TO ANALYSE THE EFFECT OF TOXIC SUBSTANCES IN	PARRA ANGUITA	Mª GEMA		UNIVERSIDAD DE JAEN	DPTO. BIOLOGIA ANIMAL, VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-10-07	30-04-11	MINECO	Spain

CGL2007-63450		THE DYNAMICS OF THE FRESHWATER-SEAWATER INTERFACE IN COASTAL DETRITAL AQUIFERS SUBJECTED TO HIGH-RATE PUMPING OF SEAWATER	IMPACT OF AGRARIAN ACTIVITY\AGRARIAN EXPERIMENTAL WATERSHEDS\WATERSHED MODELLING\SOIL EROSION\POLLUTION BY NITRATES\RADAR-BASED REMOTE SENSING	THE CONSTRUCTION OF NUMEROUS SEAWATER DESALINATION PLANTS THAT DRAW WATER FROM COASTAL WELLS HAS GIVEN RISE TO PROBLEMS THAT ARE NEITHER WELL KNOWN NOR WIDELY STUDIED IN THESE COASTAL AQUIFERS. PUMPING IS USUALLY INTENSIVE, AS THE PLANTS HAVE BEEN DESIGNED TO BE IN OPERATION 24 HOURS A DAY, 360 DAYS A YEAR (WITH 5 DOWN DAYS FOR MAINTENANCE). SINCE THE AQUIFERS THAT HAVE BEEN DRILLED ARE GENERALLY QUITE HETEROGENEOUS, THE DYNAMICS OF THE INTERFACE CAN BE EXTREMELY COMPLEX. THE BASIC HYPOTHESIS IS THAT THE MIXING ZONE PRACTICALLY DISAPPEARS AND DROPS OFF ABRUPTLY, ALTHOUGH THE HETEROGENEITIES CONSIDERABLY COMPLICATE THIS SIMPLISTIC SCHEME. ON THE BASIS OF THE OBSERVATIONS TO BE CARRIED OUT IN THE ANDARAX DELTA (WHICH HAS A DENSE NETWORK OF OBSERVATION WELLS), WE AIM TO: 1) CHARACTERIZE THE HYDRODYNAMIC PROCESSES OF THE FRESHWATER-SEAWATER INTERFACE AND OF THE MIXING ZONE; AND 2) CHARACTERIZE THE HYDROGEOCHEMICAL PROCESSES IN THE THREE ZONES AND DETERMINE THEIR RELATIVE IMPORTANCE. THE RESULTS WILL BE COMPARED WITH AT LEAST TWO OTHER COASTAL AREAS WHERE DESALINATION PLANTS ARE BEING BUILT OR ARE IN AN ADVANCED STAGE OF	PULIDO BOSCH	ANTONIO		UNIVERSIDAD DE ALMERIA	DPTO. HIDROGEOLOGIA Y QUIMICA ANALITICA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-10-07	30-06-11	MINECO	Spain
CGL2007-64155		QUANTITATIVE AND QUALITATIVE MODELLING BEHAVIOUR OF URBAN AND RURAL CATCHMENTS BY USING EVOLUTIVE COMPUTING METHODS	WATER\CONTAMINATION\EMERGING CONTAMINANTS\GROUNDWATER\CHEMICAL ANALYSIS\ENVIRONMENTAL ANALYSIS	HYDROLOGICAL MODELS, INCLUDING RAINFALL-RUNOFF MODELS AND FULL HYDRAULIC MODELS OVER BOTH RURAL AND URBAN CATCHMENTS ARE OF GREAT INTEREST, BUT THEY ARE VERY EXPENSIVE IN TERMS OF REQUIRED DATA. METHODS BASED ON IA AND EC (AS NN AND GP)ARE BEING PROVED TO GIVE ALSO GOOD RESULTS IN THOSE FIELDS. THE ANALYSIS OF TRANSPORT OF POLLUTANTS IN RIVER CATCHMENTS IS ALSO POSIBLE BY MEANS OF MODELS BASED ON PHYSICAL AND CHEMICAL EQUATIONS, BUT THEIR COST ARE ENORMOUS (IN TERMS OF DATA) AND THEIR REALIABILITY IS LOW. IA MODELS CAN ALSO TRY TO SOLVE THESE PROBLEMS. IN ORDER TO PROVIDE THE DATA, SOME DATA ABOUT URBAN CATCHMENTS IS AVALIABLE, AND AN EQUIPED URBAN CATCHMENT WHOSE POLLUTION LEVELS ARE QUITE HIGH IS AVAILABLE TO OBTAIN ADDITIONAL DATA.	PUERTAS AGUDO	JERONIMO		UNIVERSIDADE DA CORUÑA	CENTRO DE INNOVACION TECNOLOGICA EN EDIFICACION E INGENIERIA CIVIL	CENTRO DE INNOVACION TECNOLOGICA EN EDIFICACION E INGENIERIA CIVIL	01-10-07	30-09-10	MINECO	Spain
CGL2007-62483		SPATIAL AND TEMPORAL PATTERNS OF WETLANDS HYDRODYNAMICS. CONSEQUENCES FOR WATER QUALITY	SEDIMENTS\POLLUTION\RESUSPENSION\BIOFILM	THE WETLANDS SITUATED IN THE MEDITERRANEAN AREA ARE SUBJECTED TO CHANGING ENVIRONMENTAL AND ANTHROPOGENIC CONDITIONS RANGING FROM LOCAL TO GLOBAL. LOCAL ARE SPECIFIED BY CHARACTERISTIC METEOROLOGY, SYSTEM MORPHOLOGY AND MANAGEMENT, AND GLOBAL ARE DEFINED BY THE CLIMATE CHANGE. ACTUALLY, THERE IS A LACK OF STUDIES DEALING WITH HYDRODYNAMICS OF WETLANDS THAT CAN BE USED AS A BASE FOR ECOLOGICAL STUDIES THAT ARE WORKING AT THE PRESENT TIME. STUDIES ON HYDRODYNAMICS CAN EXPLAIN THE EFFECTS OF EMERGENT AND SUBMERGIBLE VEGETATION IN THE TRANSPORT OF SEDIMENTS AND DISTRIBUTIONS OF PHYTOPLANKTON IN WETLANDS. THOSE ARE PARAMETERS THAT EVALUATE THE WATER QUALITY. THIS PROJECT DEALS WITH THE UNDERSTANDING AND DETERMINATION OF SPATIAL AND TEMPORAL PATTERNS IN THE RUBINA WETLANDS, WHICH ARE SITUATED IN A NATURAL PARK. FIELD CAMPAIGNS WILL BE DESIGNED AT LARGE AND SHORT SCALES WITH THE PURPOSE OF CHARACTERIZE THE HYDRODYNAMICS OF AREAS WITH SUBMERGED AND EMERGENT VEGETATION, THE SEDIMENT TRANSPORT ALONG THE CHANNEL THAT DISTRIBUTES SALTY WATER FROM THE SEA INTO THE WETLAND AND THE RELATIONSHIP BETWEEN HYDRODYNAMICS AND PHYTOPLANKTON. THE EPO RELATED TO THE PROJECT IS IN CHARGE OF THE CONTROL OF MOSQUITOES IN THE RUBINA	COLOMER FELIU	JORGE		UNIVERSITAT DE GIRONA	INSTITUTO DE MEDIO AMBIENTE	INSTITUTO DE MEDIO AMBIENTE	01-10-07	30-09-10	MINECO	Spain

CGL2007-66644-C04-02		SPACE-TEMPORARY BEHAVIOUR AND MODELS OF THE SEDIMENT TRANSPORT ON DIFFERENT LAND USES: INTEGRATED STUDY OF HYDROLOGIC AND EROSION PROCESSES, AT THE HILLSIDE SCALE, IN MEDITERRANEAN ENVIRONMENTS	EROSION\RUNOFF\CATCHMENTS\PLOTS\LAND-USES\SPACE-TEMPORARY MODELS\INTERCEPTATION\FOREST FIRES	EROSION AND HYDROLOGIC PROCESSES IN FRAGILE MEDITERRANEAN ENVIRONMENTS UNDERGOING CHANGE IN LAND USE AND MANAGEMENT ARE RELEVANT ISSUES AFFECTING SOIL DEGRADATION AND WATER DYNAMICS. IN THE AREA OF STUDY CULTIVATED SOILS AT LOW MANAGEMENT AND THE SOILS UNDER DIFFERENT STAGES OF ABANDONMENT SHOW A HIGHER SUSCEPTIBILITY TO DEGRADATION DUE TO PROFILE SHALLOWNESS AND LOW WATER STORAGE. THIS BEHAVIOR CAUSES HIGHER RUNOFF AND SOIL AND NUTRIENT LOSSES. ADDITIONALLY AFTER ABANDONMENT AND THE LOSS OF LANDSCAPE HETEROGENEITY, WILDFIRE OCCURRENCE FURTHER CONTRIBUTES TO THE DETERIORATION OF PHYSICAL, CHEMICAL, BIOLOGICAL AND HYDROLOGICAL PROPERTIES OF THE SOIL SURFACE LAYER. THE PROJECT DEALS WITH THE STUDY, AT THE HILLSIDE SCALE, OF THE EFFECT OF SOIL MANAGEMENT AND THE SEQUENCE OF ABANDONMENT ¿CONDITIONED BY SEVERAL PERTURBATIONS- IN DIFFERENT ENVIRONMENTS. THE ESTABLISHMENT OF SOIL QUALITY PARAMETERS, SOIL AND SEDIMENT PRODUCTION AND THE HYDROLOGIC BEHAVIOR WILL BE CARRIED OUT TO APPLY AND VALIDATE MODELS TO IMPROVE TOOLS FOR A CORRECT LAND MANAGEMENT.	PARDINI	GIOVANNI		UNIVERSITAT DE GIRONA	OPTO INGENIERIA QUIMICA AGRARIA Y TECN. AGROALIMENTARIA	ESCUELA POLITECNICA SUPERIOR	01-10-07	30-09-10	MINECO	Spain
CGL2007-62928		RESUSPENSION EFFECTS ON CONTAMINANT BIOAVAILABILITY AND TOXICITY IN RIVER SEDIMENTS: INFLUENCE OF THE PHYSICOCHEMICAL AND BIOLOGICAL PROPERTIES OF THE SEDIMENTS	DESALINATION PLANTS\INTERFASE\HYDRODYNAMICS\HYDROGEOCHEMISTRY	RESUSPENSION OF RIVER BED SEDIMENTS MAY AFFECT CONTAMINANT BIOAVAILABILITY AND TOXICITY, BY INCREASING THE SEDIMENT SURFACE AREA IN CONTACT WITH THE WATER COLUMN AND CHANGING THE PHYSICOCHEMICAL CONDITIONS AT THE SEDIMENT-WATER INTERFACE. WE ALSO HYPOTHESIZE THAT THE DEVELOPMENT OF BIOFILMS ON THE SURFACE ON THE RIVER BED PARTICLES MAY AFFECT THE CONTAMINANT MOBILITY, BY INCREASING THE SEDIMENT STABILITY AGAINST WATER EROSION AND BY MODIFYING THE ADSORPTION-DESORPTION BEHAVIOUR OF THE CONTAMINANTS. IN PREVIOUS STUDIES, ARSENIC (AS) AND PHOSPHORUS (P) HAVE BEEN IDENTIFIED AS THE MAIN POLLUTANTS IN THE SEDIMENTS OF THE RIVER ANLLONS (NW SPAIN). THE PRESENT RESEARCH PROJECT AIMS AT EVALUATING THE RISK OF INCREASED ARSENIC OR PHOSPHORUS BIOAVAILABILITY AS A CONSEQUENCE OF SEDIMENT RESUSPENSION, WITH SPECIAL ATTENTION TO THE EFFECTS OF BIOFILMS ON THE RHEOLOGICAL PROPERTIES AND EROSION THRESHOLDS OF THE SEDIMENTS, AS WELL AS ON THE DESORPTIVE BEHAVIOUR OF AS AND P IN THE RESUSPENDED SEDIMENTS DURING DISTURBANCE EVENTS. TO THIS PURPOSE, RESUSPENSION EXPERIMENTS UNDER CONTROLLED LABORATORY CONDITIONS OF PH, EH, ANIONIC COMPOSITION AND SOLID:	BARRAL SILVA	MARIA TERESA		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	FACULTAD DE FARMACIA	FACULTAD DE FARMACIA	01-10-07	31-12-10	MINECO	Spain
CGL2007-63258		CONSEQUENCES OF EXPERIMENTAL CHANGES IN THE PRECIPITATION PATTERN ON VEGETATION OF THE MEDITERRANEAN SEMIARID ENVIRONMENT, INCLUDING THE SPATIALLY-DISTRIBUTED MODELLING OF THE AVAILABLE WATER	PHOSPHORUS\BIOGEOCHEMISTRY\POPULATION DYNAMICS\ALPINE LAKES\TIME SCALES	THERE IS A CONSIDERABLE BODY OF EVIDENCE CONCERNING GENERAL CLIMATIC CHANGE. IN ADDITION TO INCREASED TEMPERATURE, CHANGES IN PRECIPITATION ARE EXPECTED, ALTHOUGH THESE MAY VARY REGIONALLY. THE PROGNOSIS FOR THE WESTERN MEDITERRANEAN IS FOR A DECREASE IN TOTAL RAINFALL AMOUNT AND A REDUCTION IN THE NUMBER OF RAIN DAYS. THESE CHANGES WILL HAVE CONSEQUENCES FOR VEGETATION, PARTICULARLY WHERE IT HAS LESS RESILIENCE, SUCH AS IN DRYLANDS. WATER IS OFTEN A LIMITING FACTOR IN MUCH OF SPAIN AND, PARTICULARLY, IN THE SE, A VERY GOOD REGION FOR THIS STUDY BECAUSE SMALL RAINFALL CHANGES HERE COULD HAVE NOTABLE CONSEQUENCES. OUR AIMS, CLOSELY RELATED WITH THOSE OF THE SPANISH NATIONAL PLAN, ESPECIALLY WITH OBJECTIVES 2.1, 2.2 AND 2.4 OF THE NATIONAL SUB-PROGRAMME OF BIODIVERSITY, ARE: ON THE ONE HAND, TO STUDY EXPERIMENTALLY AND IN FIELD CONDITIONS, THE EFFECTS OF DECREASING RAINFALL AND NUMBER OF RAIN DAYS ON SEMIARID MEDITERRANEAN VEGETATION, IN TERMS OF GROWTH, GAS EXCHANGE AND HYDRIC STATE; ON THE OTHER HAND, AS RUNOFF PRODUCES A WATER REDISTRIBUTION AND, ALONG WITH THE SOIL, DETERMINES AVAILABLE WATER, WE WILL INCLUDE THE SPATIAL MODELLING OF RUNOFF AND THE SOIL FEATURES TO CALCULATE, IN A SPATIALLY DISTRIBUTED	LAZARO SUAU	ROBERTO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION EXPERIMENTAL DE ZONAS ARIDAS	ESTACION EXPERIMENTAL DE ZONAS ARIDAS	01-10-07	30-09-10	MINECO	Spain

CGL2007-64915		HEAVY METAL, ARSENIC AND PHOSPHOROUS DYNAMIC IN THE SOIL-WATER-PLANT SYSTEM IN WETLANDS POLLUTED BY MINE WASTES: EXPERIMENTS ON THE EFFECT OF THE CALCIUM CARBONATE AND HYDROMORPHIC CONDITIONS	CLIMATE CHANGE\STREAMFLOW\STATISTICAL FORECASTING\SEA SURFACE TEMPERATURE (SST)\NORTH ATLANTIC OSCILLATION (NAO)\EL NIÑO-SOUTHERN OSCILLATION (ENSO)\SINGULAR SPECTRAL ANALYSIS (SSA)\ARMA MODELS	ACCORDING TO THE RESEARCH PRIORITIES WITHIN THE ACTUAL SPANISH NATIONAL PROGRAMMES, A DETAILED STUDY ABOUT THE SOIL-WATER-PLANT INTERACTIONS IN AREAS WITH HIGH BIODIVERSITY IS PROPOSED. THE RESEARCH WILL BE DEVELOPED IN TWO SALT-MARSHES LOCATED IN THE COASTAL AREA OF THE MAR MENOR (SE SPAIN). THESE SITES ARE CHARACTERISED BY SOILS POLLUTED BY METAL MINE WASTES AND BY EUTROPHICATED WATER FLOWING ACROSS THEM. SEVERAL RECENT STUDIES HAVE SHOWED THAT THESE MARSHES ACT AS GREEN FILTERS, DUE TO THAT THEY RETAIN PHOSPHOROUS FROM EUTROPHICATED WATER AND POLLUTED MINE WASTES COMING FROM NEARBY MINING AREAS. AS A CONSEQUENCE, THESE SYSTEMS CAN BE CONSIDERED AS CHEMICAL BOMBS OF TIME, DUE TO THAT THE POLLUTANTS RETAINED COULD BE LIBERATED AND LEAD TO ENVIRONMENTAL HAZARDS. HENCE, IT IS NECESSARY TO KNOW THE BIOGEOCHEMICAL PROCESSES GOVERNING POLLUTANT DYNAMICS IN ORDER TO IMPLEMENT THE BEST MANAGEMENT PRACTICES. BASED IN THE PREVIOUS CONSIDERATIONS, THE MAIN OBJECTIVES OF THE PROJECT ARE, IN SUMMARY: - TO ESTABLISH IF LIME AMENDMENTS CAN BE A MANAGEMENT PRACTICE TO IMPROVE CHEMICAL, PHYSICAL-CHEMICAL AND BIOLOGICAL PROPERTIES IN WETLANDS POLLUTED BY METAL MINE WASTES AND TO DETERMINE THEIR EFFECTIVENESS FOR PLANT GROWTH. - TO STUDY IN DETAIL THE BIOGEOCHEMICAL PROCESSES IMPLIED ON FE, CU, ZN, PB, MN, CD Y AS AND	ALVAREZ ROGEL	JOSE		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-10-07	28-09-11	MINECO	Spain
CGL2007-65368		THE CHARACTERIZATION IN SPACE AND TIME OF RAINFALL EVENTS IN MEDITERRANEAN ENVIRONMENTS. MULTISCALE ANALYSIS AND THE DEFINITION OF RAINFALL AND HYDROLOGICAL THRESHOLDS BASED ON SAIH DATA	BIOGEOCHEMISTRY\CARBON\NITROGEN\FLUVIAL HYDROLOGY\FLUVIAL CONTINUOUM\RIPARIAN AREA	THE SPATIAL AND TEMPORAL DISTRIBUTION OF RAINFALL IS FUNDAMENTAL FOR THE STUDY OF THE WATER CYCLE AND WATER MANAGEMENT, BOTH IN TERMS OF WATER RESOURCES AND IN TERMS OF RISK. GIVEN THE SPECIFIC CLIMATIC CONDITIONS IN MEDITERRANEAN ENVIRONMENTS, WHERE A SINGLE DAY¿S RAINFALL CAN BE DOUBLE THE ANNUAL AVERAGE, THIS RESOURCE/RISK DICHOTOMY ACQUIRES SPECIAL RELEVANCE. CLIMATE ANALYSES BASED ON DAILY, MONTHLY AND ANNUAL AVERAGES DO NOT REPRODUCE THE REALITY OF THESE RAINFALL EVENTS AND CAN MASK THE SUBSEQUENT HYDROLOGICAL PROCESSES. IN THIS CONTEXT, THE IDENTIFICATION AND ANALYSIS OF PARTICULAR EPISODES CONSTITUTES A KEY METHODOLOGY FOR THE SPATIAL-TEMPORAL CHARACTERIZATION OF MEDITERRANEAN PRECIPITATION.BASED ON DATA FROM THE SAIH-JUCAR (AUTOMATIC HYDROLOGICAL INFORMATION SYSTEM OF THE JUCAR RIVER BASIN) BETWEEN 1989-2006, THE PRESENT WORK PROPOSES TO STUDY AND TO CHARACTERIZE RAINFALL EPISODES IN THE TERRITORY OF THE JUCAR HYDROLOGICAL AUTHORITY (CHJ) WITH THE OBJECTIVE OF DEFINING HYDROLOGICAL THRESHOLDS AND SUPPORTING INDICATORS FOR WATER MANAGEMENT AT VARIOUS TEMPORAL AND SPATIAL SCALES.IN SPATIAL TERMS, THE ANALYSIS WILL BE UNDERTAKEN AT THREE SCALES: A	CAMARASA BELMONTE	ANA MARIA		UNIVERSIDAD DE VALENCIA	FACULTAD DE GEOGRAFIA E HISTORIA	FACULTAD DE GEOGRAFIA E HISTORIA	01-10-07	31-03-11	MINECO	Spain
CGL2007-65784		RESTING EGG DISPERSAL AND IMPACT ON BIODIVERSITY IN AQUATIC SYSTEMS	ECOPHYSIOLOGY\CLIMATE CHANGE\WOODY MEDITERRANEAN PLANTS\DROUGHT\EXTREME CLIMATIC EVENTS\GROWTH\DENDROECOLOGY\RESPIRATION\CARBON BALANCE	LIKE PLANTS, FRESHWATER ORGANISMS MAY PRODUCE LONG-LIVED, RESISTANT DORMANT PROPAGULES. ZOOPLANKTON MAY PRODUCE RESTING EGGS, WHICH MAINTAIN ITS VIABILITY DURING LONG PERIODS. THE STUDY OF RESTING EGG BANKS IN THE SEDIMENTS HAS CONSEQUENCES IN BIOLOGICAL PHENOMENA, SUCH AS MIGRATION FROM THE PAST, TEMPORAL HETEROGENEITY, MAINTENANCE OF BIODIVERSITY, GENETIC VARIABILITY AND ZOOPLANKTON DISPERSAL. THE CONSEQUENCES OF ZOOPLANKTON DISPERSAL ON LAKE COMMUNITIES AND EGG BANKS MAY BE EVALUATED IN TERMS OF BIODIVERSITY CONSERVATION AND MANIPULATION OF AQUATIC SYSTEMS. PREDICTIONS OF RECOVERY RATES OF ALTERED COMMUNITIES AFTER DIFFERENT PERTURBATIONS MAY BE MORE EFFICIENT STUDYING THE MECHANISMS BY WHICH ZOOPLANKTON MOVE BETWEEN HABITATS. SEVERAL FACTORS ARE INVOLVED IN ZOOPLANKTON DISPERSAL, SUCH US WIND, RAIN, WATER FLOW AND WATERFOWL. STUDYING ZOOPLANKTON DISPERSAL, WE MAY KNOW THE RELATIVE IMPORTANCE OF THESE MECHANISMS IN NATURAL ECOSYSTEMS OF DIFFERENT CHARACTERISTICS. TO EVALUATE THE EFFICIENCY OF THE ZOOPLANKTON DISPERSAL, IT IS IMPORTANT TO INDICATE THAT DISPERSAL MAY BE LIMITED BY THE VIABILITY OF RESTING EGGS. IDENTIFICATION OF APPROPRIATE HATCHING CUES IS OF PRIMARY IMPORTANCE TO EVALUATE THAT VIABILITY. MOREOVER, ZOOPLANKTON DISPERSAL INTERACTS WITH LOCAL ADAPTATION EFFECTS THAT MAY LIMIT EFFECTIVE DISPERSAL. THE CURRENT PROJECT WILL BE DEVELOPED IN FIVE LAKES	CONDE PORCUNA	JOSE MARIA		UNIVERSIDAD DE GRANADA	VICERRECTORADO DE INVESTIGACION Y TERCER CICLO	VICERRECTORADO DE INVESTIGACION Y TERCER CICLO	01-10-07	31-12-10	MINECO	Spain

CGL2007-66412		EVALUATION OF THE ECOLOGICAL POTENTIAL OF DAM REGULATED RIVERS AND DEVELOPMENT OF CRITERIA FOR THEIR ENHANCEMENT ACCORDING TO THE WATER FRAMEWORK DIRECTIVE	EROSION;\ RUNOFF;\ CATCHMENTS;\ PLOTS; \ LAND USES;\ SPACE-TEMPORARY MODELS	SPANISH RIVERS HAVE SUFFERED STRONG FLOW REGULATION PROCESSES IN MOST OF THEIR REACHES. NEGATIVE IMPACTS IN FLUVIAL ECOSYSTEMS MAY PRODUCE THE CLASSIFICATION OF SOME OF THESE REACHES AS HEAVILY MODIFIED WATER BODIES, ACCORDING TO THE WATER FRAMEWORK DIRECTIVE (2000/60/CE) AND THE SPANISH LEGISLATION. THESE WATER BODIES ARE SURFACES OF WATER THAT HAVE SUBSTANTIALLY CHANGED IN CHARACTER AS A RESULT OF PHYSICAL ALTERATIONS BY HUMAN ACTIVITY. WITH REGARD TO THIS QUESTION, WE HAVE THE NECESSITY TO DEFINE THE LEVELS OF AFFECTION THAT AQUATIC ECOSYSTEMS CAN SUPPORT SO THAT THEY DO NOT IRREVERSIBLY LOOSE THEIR RECOVERING CAPACITY, AS WELL AS THEIR ESSENTIAL FEATURES.THE MAIN GOAL OF THIS PROJECT IS TO STUDY, FROM A HOLISTIC AND INTEGRATIVE POINT OF VIEW, THOSE CRITICAL FACTORS THAT DETERMINE THE DEGRADATION ON MEDITERRANEAN FLUVIAL ECOSYSTEMS AND THEIR REVERSIBILITY, SO WE CAN CONSIDER THE POSSIBILITY OF THEIR ECOLOGICAL REHABILITATION. IN ORDER TO ACHIEVE THIS, WE WILL CONSIDER HYDRO-MORPHOLOGICAL, HYDRAULIC AND HYDROLOGIC FACTORS (WHICH ARE IN FACT RELATED TO ENVIRONMENTAL FLOWS), AS WELL AS PHYSICAL AND CHEMICAL CHARACTERISTICS, AND WE WILL MAKE BIOTA STUDIES (MACROINVERTEBRATES, FISHES AND	GARCIA DE JALON LASTI	DIEGO MARIANO		UNIVERSIDAD POLITECNICA DE MADRID	ESCUELA TECNICA SUPERIOR DE INGENIEROS DE MONTES	ESCUELA TECNICA SUPERIOR DE INGENIEROS DE MONTES	01-10-07	30-09-10	MINECO	Spain
CGL2007-66861-C04-04		MOBILITY AND REDISTRIBUTION OF METALS ALONG UNSATURATED ZONE AND THEIR EFFECTS ON GROUNDWATER QUALITY CHANGES	GROUNDWATER\SOILS\ELECTROCHEMICAL TECHNOLOGY\ORGANIC POLLUTANTS	THE PROJECT PROPOSAL AIMS TO INVESTIGATE THE EFFECTS AND EXTENT OF OLD MINING ACTIVITIES ON GROUND WATER QUALITY RESOURCES BY THE STUDY OF METAL MOBILITY AND REDISTRIBUTION PROCESES THROUGH THE UNSATURATED ZONE. THE STUDY WILL COVER JOIN ANALYTICAL AND SIMULATION AT LABORATORY AND FIELD SITE EXPERIMENTATION. RESEARCH ACTIVITIES WILL BE MAINLY PERFORMED AT THE CARTAGENA-LA UNION MINING DISTRICT (SE, SPAIN), -WHERE MINING ACTIVITIES CEASED TWO DECADES AGO-, ONE OF THE MOST LARGE METAL MINING AREAS IN EUROPE, EXHIBITING HIGH CONCENTRATIONS OF VERY DIVERSE METALS, MAIN PART OF THEM INCLUDED IN THE MONITORING AND CONTROL REGULATIONS BOTH FOR WATER QUALITY AND FOR THE ENVIRONMENTAL SURVEILLANCE. THE INVESTIGATION OF MOBILITY AND REDISTRIBUTION OF METALS, RELATIVELY WELL STUDIED IN OTHER CLIMATIC ZONES, HAVE BEEN SCARCELY INVESTIGATED IN SEMIARID CLIMATE AREAS, ESPECIALLY IN ZONES WITH CARBONATIC GEOLOGICAL BACKGROUND, WHERE ACID MINE DRAINAGE IS NOT THE MAIN PROCESS, AS IT HAPPENS UNDER OTHER CLIMATE CONDITIONS. NEVERTHELESS, IN ARID ZONES IS STILL POSSIBLE TO FOUND A NOTICEABLE CONCENTRATION OF METALS DISTRIBUTED ALONG POROUROU MEDIA, SOILS, SUBSURFACE OR EVEN IN	GARCIA FERNANDEZ	GREGORIO		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-10-07	31-12-10	MINECO	Spain
CGL2007-62281		ANALYSIS AND OCURRENCE OF PHARMACEUTICALLY ACTIVE COMPOUNDS IN WASTEWATER TREATMENT PLANTS. RISK ASSESSMENT IN THE URBAN SECTION FROM GUADALQUIVIR RIVER	WATER QUALITY\HYDRODYNAMICS\TURBIDITY \VEGETATION\ESTUARINES	DURING THE LAST DECADES, THE EUROPEAN UNION HAS CONSIDERABLY PROMOTED, AN INCREASE OF THE CONTROL OF THE PRESENCE OF NEW ORGANIC POLLUTANTS IN NATURAL WATERS (BY MEANS OF DIRECTIVES OR RECOMMENDATIONS), SPECIALLY WHEN THE USE OF THESE NATURAL WATERS COULD INVOLVE ANY RISK TO THE HUMAN HEALTH OR THE ENVIRONMENT. AMONG THE EMERGING CONTAMINANTS WHICH A SPECIAL ATTENTION HAS BEEN PAID BECAUSE OF THEIR POTENTIAL RISK TO WATER SOURCES, PHARMACEUTICALLY ACTIVE COMPOUNDS ARE THE MOST UNKNOWN GROUP. NEVERTHELESS, THEIR PRESENCE IN NATURAL WATERS IS CONSTANT AND UNAVOIDABLE AS THEY ARE CONTINUOUSLY DISCHARGED TO THE ENVIRONMENT THROUGH URBAN WASTEWATERS. THE PRESENCE OF PHARMACEUTICALS IN URBAN WASTEWATERS IS MAINLY DUE TO HUMAN EXCRETA AND THE DISPOSAL OF UNUSED OR EXPIRED DRUGS TO THE SEWER SYSTEM. THE FACT THAT WASTEWATERS ARE THE MAIN SOURCE OF PHARMACEUTICALS IN THE ENVIRONMENT, MAKES NECESSARY TO OBTAIN MORE INFORMATION ABOUT THE CONCENTRATION OF PHARMACEUTICALS IN THESE WASTEWATERS, THE REMOVAL EFFICIENCY OF WASTEWATER CONVENTIONAL TREATMENTS AND THE ENVIRONMENTAL RISKS OF THESE COMPOUNDS. BECAUSE ALL OF THAT, THE AIMS OF THIS PROJECT ARE: 1) TO	ALONSO ALVAREZ	ESTEBAN		UNIVERSIDAD DE SEVILLA	ESCUELA UNIVERSITARIA POLITECNICA	ESCUELA UNIVERSITARIA POLITECNICA	01-10-07	30-09-10	MINECO	Spain

CGL2007-61856		PREDICTION OF AQUATIC MACROINVERTEBRATES OF IBERIAN RIVERS AS AN IMPLEMENTATION BASE OF THE EUROPEAN WATER FRAMEWORK DIRECTIVE	CLIMATIC CHANGE\SEMI-ARID\VEGETATION RESPONSE\GAS EXCHANGE\AVAILABLE WATER\RAINFALL MANIPULATION\VEGETATION-PRECIPITATION RELATIONSHIP\VEGETATION-RUNOFF RELATIONSHIP\RUNOFF MODELS\EVAPOTRANSPIRATION	ACCORDING TO THE EUROPEAN WATER FRAMEWORK DIRECTIVE, THE EVALUATION OF THE ECOLOGICAL STATUS IS DETERMINED BY THE ¿ECOLOGICAL QUALITY RATIO¿ (EQR), DEFINED BY THE RATIO BETWEEN THE EXPECTED VALUES (OBTAINED FROM A REFERENCE DATASET, UNIMPAIRED SITES) AND THE OBSERVED VALUES OF SEVERAL METRICS, RELATED TO THE AQUATIC MACROINVERTEBRATE COMMUNITIES, AS WELL AS TO THE DIATOMS AND THE FISH COMMUNITIES. EQR VALUES CLOSE TO THE UNITY WILL DENOTE A HIGH DEGREE OF SIMILARITY BETWEEN THE OBSERVED AND EXPECTED METRICS VALUES, AND THEREFORE A HIGH ECOLOGICAL STATUS, WHEREAS RATIOS CLOSE TO ZERO WILL REFLECT SOME TYPE OF DISTURBANCE AND CONSEQUENTLY A BAD ECOLOGICAL STATUS OF THE EVALUATED WATER COURSE. THE DIRECTIVE DEMANDS THE GOOD ECOLOGICAL STATUS OF THE AQUATIC SYSTEMS. THE RESEARCH TEAM HAS BEEN INVOLVED IN THE GUADALMED PROJECT SUBSIDIZED BY THE SPANISH DGICYT THAT HAS DEVELOPED METHODOLOGIES FOR THE IMPLEMENTATION OF THE DMA IN SPANISH MEDITERRANEAN RIVERS. THE SECOND PHASE, ALREADY FINALIZED, INCLUDED AN APPROACH TO PREDICTIVE MODELS (MEDPACS), BY MEANS OF WHICH TO BE ABLE TO PREDICT THE COMMUNITY OF MACROINVERTEBRATES EXPECTED IN A TEST SITE, SO THAT COMPARING IT WITH THE EXISTING ONE TO CALCULATE THE EQR AND THUS TO BE ABLE TO EVALUATE THE ECOLOGICAL STATUS. THE DESIGN OF PREDICTIVE METHODS HAS BEEN PERFORMED ONLY IN SEVERAL COUNTRIES. IN SPAIN THERE	ALBA TERCEDOR	FRANCISCO JAVIER		UNIVERSIDAD DE GRANADA	DPTO. ECOLOGIA	FACULTAD DE CIENCIAS	01-12-07	31-07-11	MINECO	Spain
CGL2007-60144		RELEVANCE OF THE ABRUPT (STORMS) AND PERIODICAL HYDROLOGICAL EVENTS (DRY-WET TRANSITIONS) ON FLUXES AND FATE OF DISSOLVED ORGANIC MATTER IN A MEDITERRANEAN FLUVIAL SYSTEM.	EFFLUENT WATER\SOIL\PESTICIDES\METALS\CONTAMINATION\DISSOLVED ORGANIC MATTER\SURFACTANTS	THE DISSOLVED ORGANIC MATTER (DOM) IS A COMPLEX POOL OF ORGANIC MOLECULES AND REPRESENTS THE MOST IMPORTANT AND REACTIVE RESERVOIR OF DISSOLVED ORGANIC CARBON (DOC) AND NITROGEN (DON) OF THE BIOSPHERE (HEDGES ET AL., 1997). THEORETICAL CONJECTURES (BUTTURINI ET AL., 2005) SUGGESTED THAT FLUVIAL SYSTEMS WITH DYNAMIC AND EXTREME HYDROLOGICAL FEATURES ARE AN EXCELLENT TOOL TO OPEN UP NEW LINES OF INVESTIGATION THAT HAVE PREVIOUSLY NEGLECTED. FROM THIS PERSPECTIVE, THIS PROJECT ATTEMPT TO STUDY THE TRANSPORT AND FATE OF DOM IN A MEDITERRANEAN RIVER UNDER HYDROLOGICAL STRESS. THE TEMPORAL SUCCESSION OF PERIODICAL (DRY-WET TRANSITION) AND ABRUPT (STORMS) HYDROLOGICAL EVENTS, THAT OCCURRED IN MEDITERRANEAN RIVERS, WILL BE USED AS IN SITU NATURAL EXPERIMENTS IN ORDER TO STUDY: A)THE SPECTRA OF QUALITATIVE AND QUANTITATIVE VARIABILITY OF INPUT OF TERRESTRIAL DOM IN HEADWATERS STREAMS. B)THE QUALITATIVE CHANGES THAT SUFFERED THE DOM ALONG THE LONGITUDINAL FLUVIAL CONTINUUM FROM THE HEADWATERS TO THE ALLUVIAL AND DELTAIC SYSTEMS, AND ACROSS THE LATERAL INTERFACE STREAM-RIPARIAN ZONE. C)THE RELEVANCE OF THE INTENSITY AND FREQUENCY OF THE EXTREME HYDROLOGICAL EVENTS TO REGULATE THE	BUTTURINI BUTTURINI	ANDREA		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-12-07	30-11-11	MINECO	Spain
CGL2007-66664-C04-04		ASSESSMENT OF IMPACTS ON STREAM ECOSYSTEM FUNCTION: CATALONIA PRELITTORAL RANGE	EMERGING CONTAMINANTS\WATER\SOIL\CROPS AND VEGETATION\HUMAN PRESSURE\MEDITERRANEAN COASTAL WETLANDS	IT IS WELL KNOWN THAT HUMAN ACTIVITIES IMPACT STRUCTURAL ELEMENTS, BOTH BIOTIC AND ABIOTIC, OF RIVER ECOSYSTEMS, BUT LESS IS KNOWN ABOUT THE EFFECTS ON THE RIVER FUNCTION, AND MUCH LESS IF THESE EFFECTS ARE OF THE SAME MAGNITUDE IN FLUVIAL ECOSYSTEMS LOCATED IN DIFFERENT CLIMATIC AREAS, AS THOSE FOUND IN THE IBERIAN PENINSULA. SOLUTIONS TO PROBLEMS AFFECTING RIVER ECOSYSTEMS, WILL ARRIVE WITH A BETTER UNDERSTANDING ON THEIR STRUCTURE AND FUNCTION. LEAF LITTER DECOMPOSITION IS A KEY ECOSYSTEM-LEVEL PROCESS AND SENSITIVE TO DISTURBANCES AFFECTING RIVERS. SO, IT IS A FUNCTIONAL INDICATOR OF CHANGES IN ECOLOGICAL RIVER STATUS. THE AIM OF THIS PROJECT IS TO ASSESS THE IMPACT OF THREE TYPES OF DISTURBANCES (WATER EUTROPHICATION, STREAM REGULATION AND LAND USE CHANGE) IN THE FUNCTIONING OF LOW ORDER IBERIAN STREAMS THROUGH THE RESPONSE OF AN ECOSYSTEM PROCESS, LEAF LITTER DECOMPOSITION, IN DIFFERENT GEOGRAPHIC AND CLIMATIC REGIONS IN THE IBERIAN PENINSULA. FURTHERMORE, IT AIMS TO DEMONSTRATE THE IMPORTANCE OF FUNCTIONAL INDICATORS IN PROVIDING AN INTEGRATED DRAWING OF RIVER ECOSYSTEM HEALTH	MENENDEZ LOPEZ	MARGARITA		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-12-07	30-11-10	MINECO	Spain

CGL2008-06101		PATHWAYS OF NUTRIENT DISTRIBUTION IN STRATIFIED MEDITERRANEAN RESERVOIRS: SCIENTIFIC BASES FOR WATER QUALITY MANAGEMENT	GROUNDWATER\BIOGEOCHEMICAL CYCLES\CO2\CARBON BUDGET\POLLUTANTS	WE PROPOSE TO STUDY THE PATHWAYS OF RIVER WATER DISTRIBUTION IN STRATIFIED RESERVOIRS AND TO EVALUATE THE INFLUENCE THAT RIVER-BORNE NUTRIENTS HAVE ON THE NUTRIENT DYNAMICS OF THE SURFACE LAYERS OF THESE SYSTEMS AND, HENCE, ON THEIR PHYTOPLANKTON (FOCUSING ON THE PART OF THE COMMUNITY WITH THE SMALLEST CELL SIZE AND THE SHORTEST RESPONSE TIME TO CHANGES IN ENVIRONMENTAL FACTORS). OUR WORKING HYPOTHESIS IS THAT A SIGNIFICANT FRACTION OF THE NUTRIENTS ENTERING, EITHER IN DISSOLVED OR PARTICULATE FORM, WITH COLD RIVER INFLOWS IN STRATIFIED, DEEP AND MID-SIZE MEDITERRANEAN RESERVOIRS ARE IMMEDIATELY AVAILABLE FOR PRIMARY PRODUCTION IN THE SURFACE LAYERS; THIS FRACTION WILL VARY DEPENDING ON THE STRATIFICATION CONDITIONS, BUT, IN ANY CASE, IT MAY BE ONE OF THE MAJOR SOURCES OF NEW NUTRIENTS IN THE EPILIMNION OF THESE SYSTEMS. THIS HYPOTHESIS CHALLENGES THE TRADITIONAL VIEW OF THE BEHAVIOUR OF COLD RIVER INFLOWS IN LAKES, BUT IT IS SUPPORTED BY RESULTS THAT HAVE RECENTLY APPEARED IN THE SCIENTIFIC LITERATURE, AND WHICH ARE MAINLY BASED ON LABORATORY EXPERIMENTS (SEE INTRODUCTION). OUR GOAL IS TO TEST THIS HYPOTHESIS IN MEDITERRANEAN SYSTEMS, AND TO ESTABLISH THE MAGNITUDE, VARIABILITY	RUEDA VALDIVIA	FRANCISCO JOSE		UNIVERSIDAD DE GRANADA	INSTITUTO DEL AGUA	INSTITUTO DEL AGUA	01-01-09	31-12-11	MINECO	Spain
CGL2008-05940		WATER QUALITY IN THE FUTURE MEIRAMA OPEN PIT LAKE	CARBONATE AQUIFERS\KARST HYDROGEOLOGY\PROTECTION ZONING\CONTAMINATION VULNERABILITY	IN DECEMBER OF THE YEAR 2007 THE MINE OF MEIRAMA FINISHED THE EXTRACTION OF LIGNITE, THAT LASTED FOR MORE THAN 30 YEARS. SINCE THEN OPERATIONS HAVE BEGUN WHICH WILL LEAD TO THE FORMATION OF A BIG MINING LAKE (~2 KM2 SURFACE AND UP TO 180 M DEPTH) AFTER THE CONTROLLED FLOODING OF THE OPEN PIT. IN THE PROCESS OF FLOODING ARE INVOLVED BOTH SURFACE AND GROUND WATERS, EACH ONE OF THEM, WITH THEIR CORERSPONDING DIFFERENT CHEMICAL QUALITIES. THE FUTURE MEIRAMA LAKE SITS AT THE HEADWATERS OF BARCES RIVER, WHICH BRINGS ITS WATERS TO THE CECEBRE RESERVOIR, WHICH IS RESPONSIBLE FOR THE DRINKING WATER SUPPLY OF A CORUÑA AND NEIGHBOURING MUNICIPALITIES. FROM THE POINT OF VIEW OF SUPPLY TO THE POPULATION, THERE ARE SOME DOUBTS CONCERNING THE QUALITY OF THE WATER IN THE FUTURE LAKE AND IT IS BEING CONSIDERED THE HYPOTHETICAL CASE THAT THESE WERE OF POOR QUALITY, WHAT COULD ADVERSELY AFFECT THE QUALITY OF THE CECEBRE RESERVOIR WATERS. ALSO, THE DIVERSION OF THE RIVER FLOW IN ORDER TO FLOOD THE MEIRAMA PIT COULD AFFECT ALSO THE WATER SUPPLY. MOREOVER, THE INTRODUCTION OF THE DMA DETERMINED THAT IN THE YEAR 2015 SURFACE AND GROUNDWATER MUST MEET STRICT QUALITY REQUIREMENTS, WHICH MAY NOT BE TRUE IN THE CASE OF LAKE MEIRAMA TO ADDRESS THIS COMPLEX PROBLEM, THIS PROJECT RAISES A NUMBER OF ACTIVITIES AMONG WHICH THE MOST	DELGADO MARTIN	JORGE JOSE		UNIVERSIDADE DA CORUÑA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-09	31-12-11	MINECO	Spain
CGL2008-05407-C03-01		ECOLOGICAL STATUS AND VULNERABILITY OF MEDITERRANEAN AQUATIC ECOSYSTEMS TO CLIMATE CHANGE: FUNCTIONAL INDICATORS, ADAPTATIVE RESPONSES TO STRESS (TEMPERATURE, UV RADIATION AND NUTRIENTS)	AUDOUIN'S GULL\EBRO DELTA\RICE FIELDS\FEEDING ECOLOGY\BREEDING ECOLOGY\STABLE ISOTOPES\FATTY ACIDS\CAROTENOIDS\POLLUTANTS\MERCURY	THE WATER FRAMEWORK DIRECTIVE OF THE EUROPEAN UNION (WFD, 2000/60/CE) REQUIRES SCIENTIFIC CRITERIA TO ESTABLISH THE BASIS FOR TYPIFYING LAKES, COASTAL AND TRANSITION WATERS (LAGOONS AND ESTUARIES) AND TO EVALUATE ECOLOGICAL STATUS AS EXPRESSION OF THE QUALITY OF THE STRUCTURE AND FUNCTIONING OF AQUATIC ECOSYSTEMS ASSOCIATED WITH SURFACE WATERS. THE ECOLOGICAL STATUS MUST BE RELATED TO HUMAN ACTIVITIES AS URBAN, INDUSTRIAL AND AGRICULTURAL EFFLUENTS BUT ALSO TO CLIMATE CHANGE IMPACTS. ON THE OTHER HAND THE IPCC REPORT (2007) INDICATES THE IMPORTANCE OF INCREASE THE RESEARCH ON THE VULNERABILITY AND ADAPTATION CAPACITY OF AQUATIC ECOSYSTEMS TO CLIMATE CHANGE. IN THIS PROJECT , IN ADDITION TO BIOLOGICAL INDICATORS BASED ON COMPOSITION, ABUNDANCE AND BIOMASS OF MACROPHYTES, WE PROPOSE THE EVALUATION OF THE ECOLOGICAL STATUS AND THE VULNERABILITY OF THE MACROPHYTE COMMUNITIES THROUGH: (1) ECOLOGICAL OR SYSTEMIC INDICATORS AS SPECIES RICHNESS AND SHANNON DIVERSITY USING MULTIPLE REGRESSIONS, PERMUTATIONAL MULTI-VARIATE ANALYSIS OF VARIANCE (PERMANOVA) AND HABITAT DISTRIBUTION MODEL AND CONSIDERING THE NATURAL SCALES OF VARIATION THROUGH AN APPROPRIATE MULTISCALE SAMPLING DESIGN AND CORRELATION BETWEEN BIOLOGICAL CHANGES AND CLIMATIC VARIABLES. (2) FUNCTIONAL ELEMENTS: BIO-OPTICAL INDICATORS, MAXIMAL QUANTUM YIELD AS IN VIVO CHLA FLUORESCENCE ASSOCIATED TO PHOTOSYSTEM II AS INDICATOR OF PHYSIOLOGICAL STATUS, STOICHIOMETRY (C:N:P) AS INDICATOR OF NUTRIENT STATUS AND STRESS INDICATORS: HEAT SHOCK PROTEINS, PROTEASES AND	LOPEZ FIGUEROA	FELIX		UNIVERSIDAD DE MALAGA	DPTO. ECOLOGIA Y GEOLOGIA	FACULTAD DE CIENCIAS	01-01-09	31-12-11	MINECO	Spain

CGL2008-06377-C02-01		LIMNOLOGICAL CRITERIA FOR SUSTAINABLE MANAGEMENT OF RESERVOIRS. LIMNOLOGICAL CRITERIA FOR SUSTAINABLE MANAGEMENT OF RESERVOIRS. THE CASES OF RIBARROJA (EBRO RIVER) AND SAU (TER RIVER)	LIMNOLOGY\RESERVOIRS	THE QUALITY OF WATER IN A RESERVOIR CAN BE STRONGLY MODIFIED BY THE BIOGEOCHEMICAL PROCESSES TAKING PLACE IN IT. IN ITS TURN, THESE PROCESSES ARE CONDITIONED BY THE RESERVOIR¿S HYDRODYNAMICS.DURING THE DEVELOPMENT OF THE PROJECT, WE PLAN TO IMPROVE AN ALREADY EXISTING FLOATING PLATFORM THAT MEASURES, IN A CONTINUOUS AND AUTONOMOUS WAY, DIFFERENT PARAMETERS RELATED TO THE QUALITY OF WATER. A NEW PLATFORM WILL BE BUILT ACCORDING TO THE IMPROVED DESIGN, AND IT WILL BE INSTALLED IN RIBAROJA RESERVOIR IN EBRO RIVER. ANOTHER AIM OF THIS PROJECT IS TO DEVELOP A METHODOLOGY TO STUDY NUMERICALLY, WITH A TWO-DIMENSIONAL MODEL, THE HYDRODYNAMICS AND THERMAL BEHAVIOUR OF THE RESERVOIR. THIS METHODOLOGY WILL BE VERIFIED IN RIBAROJA RESERVOIR. PRESENTLY THERE IS THE PERCEPTION THAT ALLOCHTHONOUS ORGANIC MATTER ENTERING RESERVOIRS SITUATED IN HIGHLY HUMANIZED BASINS IS A FACTOR THAT FAVOURS THE DEVELOPMENT OF ANOXIC CONDITIONS IN THE HYPOLIMNION. WE PLAN TO ANALYZE THIS PHENOMENON IN SAU RESERVOIR (TER RIVER). WE WILL ALSO STUDY HOW EXTREME HYDROLOGICAL CONDITIONS (FLOODS AND DRAUGHTS) MODULATE THE EFFECTS RELATED TO THE ALLOCHTHONOUS ORGANIC MATTER	ARMENGOL BACHERO	JUAN		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-09	30-09-12	MINECO	Spain
CGL2008-01215		INTEGRATED ASSESSMENT AND MODELING OF PASTURELAND DEGRADATION	MODELLING\HYDRODYNAMICS\SEDIMENT\MACROPHYTES\EBRO RIVER	THE MAIN AIM OF THE PROJECT IS THE ASSESSMENT OF THE STATE OF DEGRADATION OF RANGELANDS (WITH AND WITHOUT TREE COVER) OF SOUTHWEST IBERIAN PENINSULA UNDER AN INTEGRATED PERSPECTIVE, WHERBY THE PRINCIPLE ELEMENTS AFFECTED ARE CONSIDERED: SOILS, WATER AND VEGETATION. THE PROJECT PROPOSES A SYSTEMS APPROACH WHICH OBLIGES TO ANALYSE THE INTERRELATIONSHIPS EXISTING BETWEEN THOS ELEMENTS. WITH THIS PURPOSE IT IS PRETENDED TO DEFINE A SERIES OF INDICATORS WHICH SERVE FOR THE DETERMINATION OF THE DEGREE OF DEGRADATION AND WHICH CAN BE APPLIED EASILY IN ORDER TO BE USED FOR PLANNING AND MANAGEMENT OF RANGELANDS. A FURTHER AIM IS TO ELUCIDATE THE INFLUENCE OF LAND USE AND MANAGEMENT CHANGE AND OF THE CLIMATE CONDITIONS OF THE SYSTEM. IN ORDER TO DO THIS A CONCEPTUAL AND A DYNAMIC MODEL WILL BE DEVELOPED WHICH ALLOW TO EXPLORE THE SYSTEM¿S REPSONSE TO FUTURE CHANGES OF LAND USE/MANAGEMENT AND OF THE CLIMATE. THE STUDY CONSIDERS DIFFERENT SPATIAL AND TEMPORAL SCALES. THE SPATIAL SCALES INCLUDE PLOTS, A SMALL CATCHMENT, LAND UNITS AND FARMS. TEN FARMS WERE ALREADY SELECTED, WHICH ARE REPRESENTATIVE OF THE WIDE SPECTRUM OF PASTURELANDS IN THE SOUTHWESTERN PART OF THE IBERIAN PENINSULA. A FURTHER FINAL OBJECTIVE OF THE PROJECT IS THE PROPOSAL OF MEASURES FOR SUSTAINABLE MANAGEMENT OF PASTURELANDS. THE SPECIFICA OBJECTIVES OF THE RESEARCH PROJECT ARE: ¿ASSESSMENT OF SOIL DEGRADATION AND WATER EROSION. ¿ASSESSMENT OF THE STATE OF VEGETATION WITH	SCHNABEL	SUSANNE		UNIVERSIDAD DE EXTREMADURA	DPTO. DE ARTE Y CIENCIAS DEL TERRITORIO	FACULTAD DE FILOSOFIA Y LETRAS	01-01-09	31-12-11	MINECO	Spain
CGL2008-01393		STUDY OF THE EFFECTIVENESS OF TAP WATER DISINFECTION ON LEGIONELLA CELLS AS A FREE-LIVING ORGANISM AND A PROTOZOAN ENDOSYMBIONT APPLYING BOTH CULTURE AND MOLECULAR METHODS	WASTEWATER TREATMENT\PROTISTS\MICROBIAL COMMUNITY\N AND P REMOVAL\BIOLOGICAL CONTROL PARAMETERS.	LEGIONELLA INFECTIONS ARE A SIGNIFICANT PUBLIC HEALTH PROBLEM IN OUR COUNTRY. MOST OF THE SPORADIC INFECTIONS AND THE EPIDEMIC OUTBREAKS ARE RELATED WITH DRINKING WATER SUBJECTED TO SOME DISINFECTING PROCESS. HOWEVER, THE BACTERIA OVERCOMES THIS BARRIER AND IS ABLE TO MULTIPLY IN SOME POINTS OF THE WATER DISTRIBUTION SYSTEM BECOMING AN ENVIRONMENTAL RISK. ALTHOUGH THERE MIGHT BE SEVERAL CAUSES, THE MAIN ONE IS THE OWN BIOLOGY OF THE BACTERIA. LEGIONELLA RESISTS MORE EXTREMELY PHYSIC-CHEMICAL CONDITIONS THAN OTHER AQUATIC MICOORGANISMS DO. MOREOVER, THIS RESISTANCE INCREASES WHEN THE BACTERIA IS FOUND AS AN ENDOSYMBIONT OF PROTOZOA, WHICH SHARE HABITAT. THERE ARE STUDIES ABOUT THE SUSCEPTIBILITY OF LEGIONELLA TO THE DISINFECTANTS, ESPECIALLY TO CHLORINE AND TO TEMPERATURE, THAT ARE THE MOST COMMONLY USED IN OUR WATERS. BUT ALL THESE STUDIES HAVE BEEN DONE WITH LEGIONELLA-FREE CELLS, ALTHOUGH ECOLOGICAL STUDIES SHOW THAT BACTERIA IS NORMALLY FOUND IN BIOFILMS. LEGIONELLA IS USUALLY ASSOCIATED WITH OTHER MICROORGANISMS, ESPECIALLY WITH PROTOZOA SUCH AS HARTMANNELLA, ACANTHAMOEBA OR NAEGLERIA, INSIDE OF WHICH THE BACTERIA CAN MULTIPLY. SO, TO CONTROL COLONITATION AND PROLIFERATION OF THIS PATHOGEN IN DRINKING WATERS IS NECESSARY TO KNOW THE DISINFECTING SYSTEMS EFFECTIVENESS ON LEGIONELLA WHEN ITS CELLS ARE PROTECTED INTO THE CYTOPLASM OF PROTOZOA.	ARAUJO BOIRA	ROSA MARIA		UNIVERSIDAD DE BARCELONA	DPTO. MICROBIOLOGIA	DPTO. MICROBIOLOGIA	01-01-09	31-12-12	MINECO	Spain

CGL2008-06377-C02-02		LIMNOLOGICAL CRITERIA FOR SUSTEINABLE MANAGEMENT OF RESERVOIRS. THE CASES OF RIBARROJA (EBRO RIVER) AND SAU (TER RIVER)	HYDROGEOLOGY. GROUNDWATER. REMOTE SENSIN	THE QUALITY OF WATER IN A RESERVOIR CAN BE STRONGLY MODIFIED BY THE BIOGEOCHEMICAL PROCESSES TAKING PLACE IN IT. IN ITS TURN, THESE PROCESSES ARE CONDITIONED BY THE RESERVOIR¿S HYDRODYNAMICS. DURING THE DEVELOPMENT OF THE PROJECT, WE PLAN TO IMPROVE AN ALREADY EXISTING FLOATING PLATFORM THAT MEASURES, IN A CONTINUOUS AND AUTONOMOUS WAY, DIFFERENT PARAMETERS RELATED TO THE QUALITY OF WATER. A NEW PLATFORM WILL BE BUILT ACCORDING TO THE IMPROVED DESIGN, AND IT WILL BE INSTALLED IN RIBAROJA RESERVOIR IN EBRO RIVER. ANOTHER AIM OF THIS PROJECT IS TO DEVELOP A METHODOLOGY TO STUDY NUMERICALLY, WITH A TWO-DIMENSIONAL MODEL, THE HYDRODYNAMICS AND THERMAL BEHAVIOUR OF THE RESERVOIR. THIS METHODOLOGY WILL BE VERIFIED IN RIBAROJA RESERVOIR. PRESENTLY THERE IS THE PERCEPTION THAT ALLOCHTHONOUS ORGANIC MATTER ENTERING RESERVOIRS SITUATED IN HIGHLY HUMANIZED BASINS IS A FACTOR THAT FAVOURS THE DEVELOPMENT OF ANOXIC CONDITIONS IN THE HYPOLIMNION. WE PLAN TO ANALYZE THIS PHENOMENON IN SAU RESERVOIR (TER RIVER). WE WILL ALSO STUDY HOW EXTREME HYDROLOGICAL CONDITIONS (FLOODS AND DRAUGHTS) MODULATE THE EFFECTS RELATED TO THE ALLOCHTHONOUS ORGANIC MATTER ENTERING THE RESERVOIR. THIS PROJECT IS A DIRECT CONTINUATION OF OTHER PROJECTS ENJOYED IN THE PAST BY THE SAME RESEARCH TEAM. ALL OF THEM ARE ORIENTED TO OBTAIN CRITERIA	DOLZ RIPOLLES	JOSE		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA HIDRAULICA, MARITIMA Y AMBIENTAL	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-09	30-06-12	MINECO	Spain
CGL2008-02397		CYANOBACTERIA FROM FLUVIAL ECOSYSTEMS BIOFILMS. MORPHOLOGICAL, GENETIC AND ECOPHYSIOLOGICAL BIODIVERSITY	RESILIENCE\WILFIRE EFFECTS\STREAM ECOSYSTEMS\BIODIVERSITY\BOTTOM-UP CONTROL\TOP-DOWN CONTROL\FISH GENETICS\RIPARIAN FOREST	THE AIM OF THIS PROJECT IS TO STUDY THE CYANOBACTERIAL BIODIVERSITY OF BIOFILMS FROM RIVERS, THROUGH THREE DIFFERENT APPROACHES: (1) MORPHOLOGICAL CHARACTERIZATION OF BENTHIC POPULATIONS AND ISOLATED STRAINS (2) GENETIC CHARACTERIZATION OF THESE POPULATIONS AND STRAINS, ESTABLISHING A RELATIONSHIP WITH THE MORPHOLOGICAL CHARACTERISTICS AND LOOKING FOR THE PHYLOGENETICS RELATIONSHIPS AMONG THE GENOTYPES FOUND (3) ECOPHYSIOLOGICAL CHARACTERIZATION OF POPULATIONS AND STRAINS ANALYZING THE ENVIRONMENTAL FACTORS INFLUENCING THE STRUCTURE AND COMPOSITION OF CYANOBACTERIAL BIOFILMS. LIKEWISE, THE STUDY OF BIODIVERSITY IN RIVERS OF DIFFERENT SUBSTRATE (SILICEOUS VS. CALCAREOUS) AND DIFFERENT LOCATIONS WITH DISTINCT WATER QUALITY ALLOWS REACHING A FOURTH OBJECTIVE: (4) TO ANALYZE THE CYANOBACTERIAL BIODIVERSITY CHANGES AND/OR VARIABILITY IN RIVERS WITH DIFFERENT CHARACTERISTICS AND/OR WATER QUALITY. OUR PREVIOUS STUDIES ON CYANOBACTERIAL DIVERSITY WERE MADE IN RIVERS WITH SILICEOUS SUBSTRATES; WE THINK THAT SUCH STUDIES COULD HAVE CONTINUITY IN RIVERS WITH A CALCAREOUS SUBSTRATE, SINCE CYANOBACTERIA ARE MORE ABUNDANT ON THIS KIND OF SUBSTRATE. THE ECOPHYSIOLOGICAL APPROACH AIMED IN THIS PROJECT CAN HELP TO UNDERSTAND THE	MATEO ORTEGA	PILAR		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. BIOLOGIA	FACULTAD DE CIENCIAS	01-01-09	31-12-11	MINECO	Spain
CGL2008-05504-C02-02		NITROGEN STABLE ISOTOPES IN FLUVIAL ECOSYSTEMS, THE ROLE OF BIOTIC COMPONENTS AS INDICATORS OF NITROGEN SOURCES AND PROCESSES	RIVER\WARMING\TEMPORALITY\MICROBIAL DIVERSITY\BIOFILM\ORGANIC MATTER\EFFICIENCY\BIOFILM STRUCTURE	HUMAN ACTIVITY HAS SIGNIFICANTLY ALTERED THE GLOBAL BIOGEOCHEMICAL CYCLE OF NITROGEN (N), WITH THE CONSEQUENT DRAMATIC INCREASE OF DISSOLVED INORGANIC N (DIN) IN FRESHWATER ECOSYSTEMS. THIS CONSTITUTES A THREAT NOT ONLY FOR THE INTEGRITY OF THESE ECOSYSTEMS, BUT ALSO FOR HUMAN HEALTH. N IS A KEY ELEMENT FOR ORGANISMS AND ITS AVAILABILITY CAN EITHER LIMIT ECOSYSTEM PRODUCTION OR FAVOR EUTROPHICATION; THIS IN TURN, MAY AFFECT THE COMMUNITIES AND REDUCE THEIR CAPACITY TO RETAIN THIS ELEMENT. NEVERTHELESS, IN STREAM ECOSYSTEMS, THE RELATIONSHIP BETWEEN N RETENTION AND CONCENTRATION STILL REMAINS UNCLEAR PROBABLY DUE TO THE COMPLEX NATURE OF BENTHIC COMMUNITIES THAT CONTROL N DYNAMICS IN THESE ECOSYSTEMS. THE CENTRAL OBJECTIVE OF THIS PROJECT IS TO EXAMINE THE RELATIONSHIP BETWEEN N AVAILABILITY AND THE ELEMENTAL COMPOSITION OF THOSE BIOTIC COMPONENTS RESPONSIBLE FOR N UPTAKE/RETENTION (I.E., BIOFILM, MACROPHYTES AND RIPARIAN VEGETATION) IN STREAM ECOSYSTEMS. TO ADDRESS THIS OBJECTIVE, BESIDES OF USING THE N CONTENT, WE WILL ALSO USE THE N ISOTOPIC SIGNATURE (I.E., NATURAL ABUNDANCE OF 15N) OF BOTH THE STREAM WATER AND THE BIOTIC COMPONENTS, BECAUSE THIS SIGNATURE IS SUBJECTED TO THE DIFFERENT	MARTI ROCA	EUGENIA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	CENTRO DE ESTUDIOS AVANZADOS DE BLANES (CEAB)	CENTRO DE ESTUDIOS AVANZADOS DE BLANES (CEAB)	01-01-09	31-12-11	MINECO	Spain

CGL2008-05153-C02-01		LINKING STRUCTURE AND FUNCTION LINKAGES OF FLOODPLAIN WETLANDS	NUMERICAL MODELLING\SURFACE FLOW\SUB-SURFACE FLOW\SOLUTE TRANSPORT	FLOODPLAINS OF LARGE REGULATED RIVERS WITH IMPACTS OF GLOBAL CHANGES (¿CHANELIZATION, EUTROPHICATION, INTENSIVE AGRICULTURAL LAND USE) ARE MOSTLY CONTROLLED BY GROUNDWATER FLOWS AND PRESENT UNCOUPLED FUNCTIONAL AND STRUCTURAL CHARACTERISTICS. HOWEVER, SOME HABITATS STILL KEEP FUNCTIONAL CHARACTERISTICS OF WETLANDS (SOLIDS RETENTION, NUTRIENT RECYCLING, SINK/SOURCE OF GREENHOUSE GASES AND BIODIVERSITY DEVELOPMENT.) UNDER THESE CONDITIONS WHICH ARE VALUABLE FOR THE MANAGEMENT AND RESTORATION OF THESE ECOSYSTEMS. THIS PROJECT PLANS TO ASSESS THE RELATIONSHIPS BETWEEN FORCING FUNCTIONS (WATER FLOW, DISSOLVED SOLIDS TRANSPORT,ORGANIC MATTER TYPE AND ABUNDANCE, WATER QUALITY), FUNCTIONS (ORGANIC MATTER ACCUMULATIION, CARBON AND NITROGEN RECYCLING, GAS EMMISSION/TRAPPING, SYSTEM METABOLISM) AND STRUCTURE (TYPE AND RELATIVE ABUNDANCE OF PLANTS AND MACROINVERTEBRATES) IN WETLANDS ACROSS THE HYDRAULIC CONNECTIVITY GRADIENT IN THE MIDDLE EBRO RIVER TO IDENTIFY WHICH HABITATS AND WHY ARE KEY ¿HOT SPOTS¿ FOR WETLAND CHARACTERISTICS. FOR THIS PURPOSE, GROUNDWATER FLOW MODELS COUPLED WITH SURFACE FLOW MODELS WILL BE CONSTRUCTED (SUBPROJECT 1) AND FIELD AND LABORATORY DATA OF SOILD AND WATER QUALITY,	COMIN SEBASTIAN	FRANCISCO A.		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	01-01-09	31-12-11	MINECO	Spain
CGL2008-02164		SOIL AND GROUNDWATER REMEDIATION CONTAMINATED BY DNAPL UNDER BACKGROUND LEVELS DIFFICULTING DEGRADATION	DROUGHTS\DISTRIBUTED HYDROLOGICAL MODELLING\REMOTE SENSING\CLIMATE CHANGE\SPATIAL CALIBRATION	MOST OF THE DNAPL COMPOUNDS ARE TOXIC AND CARCINOGENIC IN DIFFERENT DEGREES. FOR THIS REASON THEY ARE INCLUDED IN THE SPANISH LAW FOR SOILS AND WATERS RELATED WITH THE PROTECTION OF HUMAN HEALTH AND THE ECOSYSTEMS.MUCH OF THE DNAPL ARE CHLORINATED SOLVENTS USED IN INDUSTRY FOR MULTIPLE USES. FOR THIS REASON, IN THE AREAS DEDICATED TO INDUSTRIAL USES, THEY ARE NOT INFREQUENT THE CONTAMINATION EPISODES OF SOIL AND GROUNDWATER BY THESE COMPOUNDS. BECAUSE ITS HIGHER DENSITY THAN WATER, AFTER PASSING THROUGH THE SOIL, THEY CAN DESCEND TO THE BASE OF AQUIFERS. ONCE THERE, IN ADDITION TO DISSOLVE IN WATER, THEY ARE DEPOSITED AS A FREE PHASE POOL THAT MOVES ACCORDING TO THE SLOPE OF THE SUBSTRATE AND NOT ACCORDING TO THE HYDRAULIC GRADIENT.IN AREAS IN WHICH DIFFERENT LAND USES COEXIST (EG INDUSTRIAL AND AGRICULTURAL USES), EPISODES OF CONTAMINATION IN WHICH THE BACKGROUND LEVELS PUT DIFFICULTIES FOR THE NATURAL ATTENUATION OF CHLORINATED SOLVENTS ARE NOT INFREQUENT. FOR EXAMPLE, WHEN THERE IS A COINCIDENCE BETWEEN DIFFUSE CONTAMINATION BY NITRATES AND CONTAMINATION OF CHLOROETHENES, OFTEN OCCURS INHIBITION OF THE PROCESS OF NATURAL ATTENUATION OF CHLOROETHENES BECAUSE OF THE	CARMONA PEREZ	JOSE MARIA		UNIVERSIDAD DE BARCELONA	DPTO. GEOQUIMICA, PETROLOGIA Y PROSPECCION GEOLOGICA	FACULTAD DE GEOLOGIA	01-01-09	31-12-11	MINECO	Spain
CGL2008-05778		BIOLOGICAL CONTROL IN COMMUNITIES IN MEDITERRANEAN SHALLOW WATERS: PREDATION	RESERVOIRS\3D MODELLING\TRANSPORT\NUTRIENTS\ WATER QUALITY MANAGEMENT	BIOTIC AND ABIOTIC FACTORS DETERMINE THE COMPOSITION AND STRUCTURE OF THE COMMUNITIES, AND THE FOOD WEB ORGANIZATION. THE HIGH ENVIRONMENTAL VARIABILITY, SUCH AS WATER LEVEL, NUTRIENT OR SALINITY FLUCTUATIONS, AND THE ENVIRONMENTAL CONSTRAINTS, SUCH AS DROUGHT IN TEMPORARY PONDS OR CONFINEMENT IN COASTAL LAGOONS, ARE DETERMINANT FOR THE COMMUNITY STRUCTURE IN MEDITERRANEAN SHALLOW LENTIC ECOSYSTEMS. THE EFFECTS OF THE PHYSICAL CONTROL ACT DIRECTLY ON THE COMMUNITY STRUCTURE, BY MEANS OF THE SPECIES SELECTION ACCORDING TO THEIR BIOLOGICAL TOLERANCE RANGE, AND ACT ALSO INDIRECTLY DUE TO CHANGES IN THE FOOD WEB ORGANIZATION. THE INFLUENCE OF THE ENVIRONMENTAL CONDITIONS ON THE BIOLOGICAL TRAITS OF THE TOP PREDATORS EXPLAINS THESE CHANGES AND COULD IMPLY A MODIFICATION OF THE PREDATION PRESSURE ON THE AQUATIC COMMUNITY. THE MAIN OBJECTIVE OF THIS PROJECT IS TO ANALYSE THE PREDATION EFFECTS ON THE FOOD WEB FUNCTIONING IN MEDITERRANEAN WATER BODIES, AND TO IDENTIFY IF THE ABIOTIC FACTORS, CHARACTERISTICS OF THESE ECOSYSTEMS, MODIFY OR REGULATE THE PREDATION EFFECTS. IN ORDER TO REACH THIS OBJECTIVE WE WILL STUDY TWO SHALLOW LENTIC ECOSYSTEMS: TEMPORARY PONDS, WHERE THE DROUGHT IS A DETERMINING FACTOR; AND CONFINED COASTAL LAGOONS, WHERE A HIGH VARIABILITY OF NUTRIENT INPUT AND SALINITY ARE REPORTED. THESE	BOIX MASAFRET	DANIEL		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-01-09	31-12-11	MINECO	Spain

CGL2008-00047		EVALUATION OF GROUNDWATERS DISCHARGE AND ITS EFFECT ON THE COASTAL AND MARINE ECOSYSTEM	BEACH\COASTAL EROSION\STORMS\HAZARDS	GROUNDWATER REPRESENTS THE LARGEST RESERVOIR OF FRESHWATER OF THE WORLD AND IMPORTANT AMOUNT OF THIS WATER IS CONTINUOUSLY DISCHARGING TO THE SEA. THIS PERSISTENT FLUX REPRESENT AN IMPORTANT INPUT OF TERRESTRIAL POLLUTANTS, NUTRIENTS AND OTHER COMPOUNDS TO THE COAST. DESPITE THE IMPORTANT ROLE THAT THIS FLOW MAY PLAYS IN THE COASTAL BIOGEOCHEMICAL PROCESSES, OUR UNDERSTANDING ON THE PROCESSES REGULATING THIS LAND-OCEAN INTERACTIONS AND ITS CONSEQUENCES ON THE COASTAL ECOSYSTEMS ARE VERY POOR. THE PECULIAR HYDROGEOLOGICAL CHARACTERISTICS OF THE BALEARIC ISLANDS (KARST SYSTEM WITH HIGH POROSITY, WITHOUT PERSISTENT SURFACE FLOWS, SMALL HYDROGRAPHIC BASINS, DEMOGRAPHIC CONCENTRATION IN COASTAL BASINS) DO OF THESE ISLANDS THE PERFECT FRAME TO STUDY THE ROLE THAT THE GROUNDWATER PLAYS IN THE MARINE BIOGEOCHEMICAL CYCLES. THE AIMS OF THIS PROPOSAL IS TO EVALUATE THE EFFECT THAT GROUNDWATER DISCHARGES HAVE ON THE PHYSICOCHEMICAL AND BIOLOGICAL PROPERTIES OF THE COASTAL MARINE ZONE AT MALLORCA ISLAND, AS WELL AS TO QUANTIFY ITS MAGNITUDE, SEASONAL VARIABILITY AND FACTORS CONTROLLING ITS VARIATIONS. WE WILL ALSO STUDY THE REPERCUSSION THAT THIS WATERS HAVE ON	TOVAR SANCHEZ	ANTONIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO MEDITERRANEO DE ESTUDIOS AVANZADOS (IMEDEA)	INSTITUTO MEDITERRANEO DE ESTUDIOS AVANZADOS (IMEDEA)	01-01-09	31-12-11	MINECO	Spain
CGL2008-04257		HABITAT SELECTION AND DETERMINATION OF CARRYING CAPACITY IN SOUTHERN BROWN TROUT SALMO TRUTTA POPULATIONS	ECOTOXICITY\BIOASSAYS\SEDIMENTS\ WATER-QUALITY SURVEILLANCE NETWORKS\TUBIFEX TUBIFEX\BIOACCUMULATION\ACUTE TOXICITY\CHRONIC TOXICITY\METALS	CARRYING CAPACITY DETERMINES THE POTENTIAL ABUNDANCE THAT A GIVEN FRESHWATER SYSTEM CAN SUPPORT; THEREFORE IT CAN BE USED TO ASSESS THE CONSERVATION STATUS OF POPULATIONS. HOWEVER, THERE ARE NO CARRYING CAPACITY MODELS FOR BROWN TROUT SALMO TRUTTA IN IBERIAN RIVERS. FOR THAT REASON, THE AIM OF THE PRESENT PROJECT IS TO DETERMINE THE CARRYING CAPACITY OF FRESHWATER SYSTEMS FROM PHYSICAL HABITAT SIMULATIONS, HABITAT SELECTION PATTERNS AND TERRITORY SIZE ASSESSMENT. A STUDY OF HABITAT SELECTION PATTERNS WILL BE CARRIED OUT IN ORDER TO DEVELOP HABITAT PREFERENCE CURVES FOR IBERIAN RIVERS WHICH WILL ALLOW ACHIEVING VERY ACCURATE SIMULATIONS OF PHYSICAL HABITAT. ON THE OTHER HAND, AN EXPERIMENTAL STUDY WILL BE PERFORMED TO BUILD A TERRITORY SIZE MODEL WHICH WOULD PERMIT TO DETERMINE THE EFFECTS OF BODY SIZE, FOOD ABUNDANCE, DENSITY OF COMPETITORS AND HABITAT CHARACTERISTICS. THE MODEL WILL BE THEN APPLIED TO WILD POPULATIONS UNDER CONTRASTING ENVIRONMENTAL CONDITIONS. ANOTHER PURPOSE OF THIS STUDY IS TO ANALYSE THE EFFECTIVE POPULATION SIZE NE, AN ESSENTIAL CONCEPT IN CONSERVATION BIOLOGY AND A BASIC PARAMETER IN MANY MODELS IN POPULATION GENETICS. THE NE MEASURES THE RELATIVE IMPORTANCE	ALMODOVAR PEREZ	ANA		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. DE ZOOLOGÍA Y ANTROPOLOGÍA FÍSICA	DPTO. DE ZOOLOGÍA Y ANTROPOLOGÍA FÍSICA	01-01-09	31-12-11	MINECO	Spain
CGL2008-04847-C02-01		EFFECTS OF THE DROUGHT INCREASE AND ALTERATIONS IN THE GROWING SEASON DUE TO CLIMATE CHANGE ON THE PHENOLOGICAL PATTERNS OF GROWTH IN MEDITERRANEAN QUERCUS	Q. ILEX\Q. CERRIOIDES\DROUGHT\PHENOLOGY\R EPRODUCTION\ACORNS\PRE-DISPERSAL PREDATION\RECRUITMENT\MODELLIN G\GOTILWA+	THE REGIONAL PROJECTIONS OF CLIMATIC MODELS PREDICT FOR NE SPAIN A TEMPERATURE RISE AND AN INCREASE IN WATER STRESS DURING THE NEXT DECADES. BOTH CLIMATIC TRENDS MAY ALTER THE GROWING SEASON AND THE PHENOLOGICAL ORGANIZATION OF MEDITERRANEAN TREE SPECIES BUT WE DO NOT KNOW THE FUNCTIONAL IMPLICATIONS OF THESE MODIFICATIONS. IN THE NE IBERIAN PENINSULA, AS IN MOST OF THE MEDITERRANEAN BASIN, THE EVERGREEN AND DECIDUOUS QUERCUS SPECIES ARE DOMINANT IN MOST WOODLANDS. IN ADDITION, OAKS HAVE A GREAT SOCIOECONOMIC AND ECOLOGIC VALUE. WE HYPOTHESIZE THAT THE LENGTHENING OF THE GROWING SEASON PROMOTED BY THE PREDICTED TEMPERATURE RISE WILL REDUCE THE COMPETITION FOR INTERNAL RESOURCES REQUIRED BYVEGETATIVE GROWTH AND REPRODUCTION. HOWEVER, IT IS ALSO EXPECTED A GREATER DURATION OF THE DROUGHT PERIOD WHICH COULD COUNTERACT THE FIRST EFFECT LEADING TO A GREATER COMPETITION FOR THE INTERNAL RESOURCES BETWEEN GROWTH AND REPRODUCTION. WE HYPOTHESIZE THAT THE OVERLAPPING BETWEEN PHENOLOGICAL PHASES AND THE COMPETITION FOR RESOURCES IN RESPONSE TO THE FORECASTED CLIMATIC CONDITIONS WILL BE GREATER IN THE DECIDUOUS THAN IN THE EVERGREEN QUERCUS SPECIES. WE WILL TEST THESE HYPOTHESES IN CLIMATICALLY CONTRASTING SITES AND USING EXPERIMENTAL SYSTEMS WHICH MODIFY THE WATER AVAILABILITY THROUGH THE	CAMARERO MARTINEZ	JESUS JULIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	01-01-09	31-12-11	MINECO	Spain

CGL2008-03319		SHEAR STRESS AND TURBULENCE CHARACTERIZATION IN FLOOD EVENTS IN MEANDERING RIVERS. EXPERIMENTAL AND NUMERICAL STUDY	TECTONICS\GEOMORPHOLOGY\GUADIANA RIVER BASIN\DRAINAGE PATTERN EVOLUTION	THIS PROJECT IS AIMED TO STUDY IN DETAIL THE VELOCITY PROFILES AND SHEAR STRESSE FIELDS IN MEANDERING RIVERS, CHARACTERISING THE FLOW PATTERNS IN BOTH, THE MAIN CHANNEL AS WELL AS THE FLOODPLAINS. THIS STUDY WILL ALSO BE USED TO VALIDATE AND CALIBRATE A NUMERICAL MODEL FOR 3D TURBULENT FREE SURFACE FLOW, WITH SPECIFIC ANALYSIS OF TURBULENCE AND ENERGY DISIPATION PROCESSES. DIFFERENT EXPERIMENT SERIES IN A LABORATORY MODEL OF A MEANDERING RIVER WILL BE MADE IN ORDER TO STUDY THE 3D FLOW PATTERNS WHICH APPEAR IN THE MAIN CHANNEL IN FLOOD EVENT, WITH INCREASING FLOWS IN FLOOD EVENTS. THE EXPERIMENTAL RESULTS WILL ALLOW US TO DETERMINE PRECISELY THE STREAM POWER IN BOTH THE MAIN CHANNEL AND THE FLOODPLAINS AND THEREFORE, IT WILL BE POSSIBLE TO ASSESS THE DAMAGE PRODUCED TO THE ECOSYSTEM OF THE RIVER. IN THIS MANNER, EFFECTIVE PROTECTION MEASURES CAN BE DESIGNED. THE EXPERIMENTS WILL BE MADE IN A SCALE MODEL (1/20) OF A MEANDERING REACH OF THE RIVER MERO IN A CORUÑA (SPAIN), WHICH IS ALREADY BUILT IN THE CITEEC (CENTRO DE INNOVACION TECNOLOGICA EN EDIFICACION E INGENIERIA CIVIL, RESEARCH CENTER IN CIVIL ENGINEERING) AT THE UNIVERSITY OF A CORUÑA. THE MULTI-DIRECCIONAL CHARACTERIZATION OF VELOCITY PROFILES IS RELEVANT FOR A MULTIPLE AND DETAILED STUDY OF TURBULENCE PROCESSES, CLEARLY ANISOTROPIC AND VARIABLE IN 3D FLOWS, AS THOSE EXISTING IN MEANDERING RIVERS. TURBULENCE MODELS ARE IN CONTINOUS DISCUSSION IN THE SCIENTIFIC COMMUNITY, SO THE PROJECT RESULTS ARE IMPORTANT TO ADVANCE IN	PEÑA GONZALEZ	ENRIQUE		UNIVERSIDADE DA CORUÑA	DPTO. METODOS MATEMATICOS Y DE REPRESENTACION	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-09	31-12-11	MINECO	Spain
CGL2008-02310		STRUCTURE OF PROTIST COMMUNITIES IN WASTEWATER TREATMENT PLANTS WITH ADVANCED SYSTEMS FOR NUTRIENTS REMOVAL. BIOLOGICAL PARAMETERS FOR THE PROCESS CONTROL.	CYANOBACYERIA\BIOFILMS\RIVERS\BIODIVERSITY\TAXONOMY\16S RRNA\PHYSIOLOGY\TGGE	THE ELIMINATION OF NITROGEN AND PHOSPHOROUS COMPOUNDS FROM WASTEWATER IS AN ESSENTIAL PROCESS TO AVOID EUTROPHICATION IN THOSE STREAMS RECEIVING INPUTS FROM WASTEWATER TREATMENT PLANTS (WWTP) EFFLUENTS. ADVANCED WASTEWATER TREATMENTS FOR THE ELIMINATION OF NUTRIENTS ARE NOWADAYS THE BIOLOGICAL SYSTEMS TO BE EMPLOYED AS THE STRICTER LEGISLATION AND CONTROL FROM THE EU WATER FRAMEWORK DIRECTIVE INDICATES. THE EFFICIENCY OF THESE PROCESSES IS BASED ON THE DEVELOPMENT OF COMPLEX MICROBIAL CONSORTIA, MAINLY OF BACTERIA AND PROTISTS, DIFFERING MARKEDLY, BOTH QUANTITATIVELY AND QUALITATIVELY FROM THOSE DESCRIBED IN CONVENTIONAL SYSTEMS. THIS TYPE OF WASTEWATER TREATMENT PLANTS ALTERNATES OXIC, ANOXIC AND ANAEROBIC PHASES, WHERE NITRIFICATION, DENITRIFICATION AND PHOSPHOROUS REMOVAL RESPECTIVELY ARE ENHANCED. THE POPULATIONS OF PROTISTS ASSOCIATED TO THIS COMPARTMENTALIZED PROCESS DESIGN HAVE NOT BEEN STUDIED UP TO DATE, NOR THEIR TROPHIC RELATIONSHIPS TO NITRIFICANT, DENITRIFICANT OR PHOSPHOROUS ACCUMULATING BACTERIA (PAO) GROWING IN THE SYSTEM. THE ANALYSIS OF STATISTICAL SIGNIFICANT RELATIONSHIPS AMONG PROTIST GROUPS/SPECIES, PHYSICAL-CHEMICAL VARIABLES AND NUTRIENT REMOVAL PERFORMANCE WOULD ALLOW THE PROPOSAL OF BIOLOGICAL PARAMETERS TO EVALUATE	SERRANO BARRERO	SUSANA		UNIVERSIDAD COMPLUTENSE DE MADRID	FACULTAD DE CIENCIAS BIOLOGICAS	FACULTAD DE CIENCIAS BIOLOGICAS	01-01-09	31-12-11	MINECO	Spain
CGL2008-03463		TECTONIC GEOMORPHOLOGY OF THE GUADIANA RIVER WATERSHED. INTERACTION BETEWEEN CRUST DEFORMATION AND DRAINAGE PATTERN EVOLUTION	WATER BALANCES\AQUIFER RECHARGE\LAND USE CHANGE\CLIMATIC CHANGE\SCENARIOS	ALPINE TECTONICS RESHAPES THE OLD LANDSCAPE OF THE IBERIAN MASSIF. FOLDING AND FAULTING GIVE RISE UPLIFTED AND DEPRESSED ZONES CONTROLLING THE DRAINAGE PATTERN. MAIN RIVERS CONVERGE TO THROUGHS THAT WERE FILLED WITH CONTINENTAL SEDIMENTS RESULTING FROM HIGH RELIEF EROSION. THE GUADIANA RIVER FLOWS OVER THE SOUTHERN AREA OF THE IBERIAN MASSIF AND IT IS A SOURCE OF VERY INTERESTING DATA TO UNDERSTAND THE DEVELOPMENT OF ATLANTIC WATERSHEDS OF THE IBERIAN PENINSULA. THE AREA CONSISTS OF AN EXTENSIVE OUTCROP OF VARISCAN BASEMENT WHERE IN THE CENTRAL PART A TERTIARY SEDIMENTARY BASIN, THE VEGAS DEL GUADIANA BASIN, IS FOUND. THE MAIN AIM OF THIS PROJECT IS TO DEVELOP AN INTEGRATED PICTURE OF THE ALPINE TO MODERN TECTONIC GEOMORPHOLOGIC EVOLUTION OF THIS DRAINAGE BASIN. INVESTIGATION WILL DEVELOP ACCORDING TO THE FOLLOWING OBJECTIVES: A) STUDY OF THE ALPINE STRUCTURE OF THE VARISCAN BASEMENT PAYING SPECIAL ATTENTION ON NEW AND INHERITED REACTIVATED STRUCTURES RESPONSIBLE OF DRAINAGE PATTERN B) QUANTITATIVE MORFOTECTONIC ANALYSIS BY MEANS OF TOPOGRAPHIC DIGITAL DATA C) STUDY OF THE SEDIMENTS OF THE VEGAS DEL GUADIANA BASIN IN ORDER TO KNOW THE PROVENANCE AND RELATIONSHIP WITH OTHER SEDIMENTARY BASINS AND THE GEODYNAMIC EVOLUTION OF THE AREA D) INTERPRETATION OF THE GEOMETRY OF VEGAS DEL GUADIANA BASIN E) CHARACTERIZATION OF ACTIVE FAULTS F) DATING OF SEDIMENTS AND GEOMORPHOLOGIC	TEJERO LOPEZ	ROSA MARIA		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. GEODINAMICA	FACULTAD DE CIENCIAS GEOLOGICAS	01-01-09	31-12-11	MINECO	Spain

CGL2008-00438		PLANT RESPONSES TO ABIOTIC STRESS: CORRELATION WITH THE EDAFIC CHARACTERISTICS OF THEIR NATURAL HABITATS	INVADING SPECIES\OSTRACODA\LIMNOLOGY\BIOGEOGRAPHY\COLONISATION\IBERIAN PENINSULA	THE STUDY OF THE MECHANISMS OF PLANT RESPONSES TO DIFFERENT TYPES OF ABIOTIC STRESS IS ONE OF THE MOST ACTIVE RESEARCH TOPICS IN PLANT BIOLOGY. THIS IS DUE TO ITS UNQUESTIONABLE ACADEMIC INTEREST, BUT ALSO BECAUSE OF ITS PRACTICAL IMPLICATIONS IN AGRICULTURE, SINCE ABIOTIC STRESS (MAINLY DRAUGHT AND HIGH SOIL SALINITY) IS THE MAJOR CAUSE FOR THE REDUCTION IN CROP YIELDS WORLDWIDE. MANY STUDIES IN MODEL SYSTEMS, SUCH AS ARABIDOPSIS THALIANA, HAVE ALLOWED TO DEFINE SEVERAL BASIC BIOCHEMICAL MECHANISMS OF STRESS RESPONSES (REGULATION OF OSMOTIC BALANCE AND IONIC HOMEOSTASIS, SYNTHESIS OF PROTECTIVE METABOLITES AND PROTEINS, ACTIVATION OF ANTIOXIDANT SYSTEMS, ETC.). HOWEVER, IT IS CLEAR THAT THESE RESPONSES, IN MOST CASES, DO NOT LEAD TO STRESS TOLERANCE; IN FACT, ARABIDOPSIS, MOST WILD PLANTS AND ALL CROPS ARE QUITE SENSITIVE, WHILE SOME SPECIALIZED PLANTS (HALOPHYTES, GYPSOPHYTES, XEROPHYTES¿) ARE RESISTANT TO DRASTIC ABIOTIC STRESS CONDITIONS IN THEIR NATURAL HABITATS. WE PROPOSE THAT THE RESPONSE MECHANISMS IN PLANTS ADAPTED TO STRESS CONDITIONS IN NATURE ARE MORE EFFICIENT THAT THOSE WHICH OPERATE IN NON-TOLERANT PLANTS (ALTHOUGH BOTH MAY SHARE THE SAME MOLECULAR BASIS), AND THAT THESE QUANTITATIVE DIFFERENCES ARE DEPENDENT ON, OR MODULATED BY THE EDAFOCLIMATIC PROPERTIES OF THE HABITAT WHERE	VICENTE MEANA	OSCAR		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE BIOLOGIA MOLECULAR Y CELULAR DE PLANTAS (IBMCP)	INSTITUTO DE BIOLOGIA MOLECULAR Y CELULAR DE PLANTAS (IBMCP)	01-01-09	31-12-11	MINECO	Spain
CGL2008-01910		ASSESSMENT OF URBAN WATER DEMAND MICRO-COMPONENTS AND ITS APPLICATION IN IMPROVING BOTH SAVINGS AND REUSING	DNAPL\CHLOROETHENES\CHLOROMETHANES\SOIL AND GROUNDWATER\REMEDIATION\NATURAL ATTENUATION\DECHLORINIZATION\MICROCOSM\COLUMNS\NUMERICAL MODELING	THE NEED TO ENHANCE THE EFFICIENT MANAGEMENT AND USE OF URBAN WATER IS NOT ONLY ADMITTED BY EVERY STAKEHOLDER WITHIN THE CURRENT SPANISH CONTEXT, BUT ALSO BY THE OWN EUROPEAN UNION (COM(2007) 414 FINAL - ADDRESSING THE CHALLENGE OF WATER SCARCITY AND DROUGHTS IN THE EUROPEAN UNION), THAT PROMOTES THE DEMAND-SIDE ACTIONS INSTEAD OF THE SUPPLY-SIDE ONES. HOWEVER, IN SPAIN SUCH KIND OF ACTIONS HAVE CONTINUOUSLY FACED THE SAME REAL BARRIER: THE LACK OF RELIABLE DATA ON WATER DEMAND. THE ONLY DATA SOURCE FOR THAT COMES FROM THE INDIVIDUAL WATER METERS READINGS, WHICH ARE TAKEN, AS BEST, EVERY TWO MONTHS. NO DATA IS PUBLICLY AVAILABLE ON HOURLY VARIATION OF INDIVIDUAL WATER CONSUMPTION, AND NEITHER ON FINAL END-USES (TYPES, DURATION, FLOWS, AND VOLUME¿ WHAT IS GENERALLY CALLED DEMAND MICRO-COMPONENTS). SO, WHEN SOME WORK ON THIS HAS BEEN CARRIED OUT, THIS KIND OF INFORMATION HAD TO BE SIMPLY ESTIMATED SOMEHOW. THE FIRST AIM OF THE PROJECT IS TO CALCULATE THE REAL WATER DEMAND PARAMETERS UP TO THE MICRO-COMPONENT LEVEL (BEING FOCUSED ON THE MEDITERRANEAN COAST OF SPAIN), AND PUBLISH THEM AS SOON AS THEY ARE GOT BY MEANS OF AN OPEN WEB PAGE, AS WELL AS BY DIRECTLY SENDING THEM TO EXTERNAL INTERESTED PROJECT PARTNERS. IN ADDITION, WATER SAVINGS PRODUCED BY PAST CAMPAIGNS WILL BE NOW	COBACHO JORDAN	RICARDO		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO TECNOLOGICO DEL AGUA	INSTITUTO TECNOLOGICO DEL AGUA	01-01-09	30-06-12	MINECO	Spain
CGL2008-03388		RESILIENCE TO WILDFIRE OF MEDITERRANEAN STREAMS	EVAPOTRANSPIRATION\WATER BUDGET\WATER STRESS\REMOTE SENSING	ON AUGUST 2003, A WOODLAND FIRE OF 4543 HA IN SANT LLORENÇ DEL MUNT NATURAL PARK AREA (CATALONIA) AFFECTED SEVERAL HEADWATER MEDITERRANEAN STREAMS (RIPOLL-BESOS WATERSHED). UNDER FURIMED-1 PROJECT WE HAVE FOLLOWED THE POST-FIRE EVOLUTION OF GENERAL PHYSICOCHEMICAL PARAMETERS (INCLUDING NUTRIENTS AND SUSPENDED SOLIDS), THE PAH CONCENTRATION IN SEDIMENTS, THE AQUATIC HABITAT HETEROGENEITY, THE FRESHWATER BIOTA (ALGAE, MACROINVERTEBRATES AND FISHES) AND THE RIPARIAN VEGETATION IN RELATION TO PRE-FIRE CONDITIONS AND COMPARING WITH NON IMPACTED SITES. IN THIS SENSE, A GOOD GENERAL RECOVERY HAS BEEN PRODUCED, ALTHOUGH RIPARIAN VEGETATION AND FISHES STILL LACK IN MOST STREAM REACHES. THESE LAST TWO ELEMENTS (RIPARIAN VEGETATION AND FISHES) ARE KEY ELEMENTS TO UNDERSTAND STRUCTURE AND FUNCTION OF THE AQUATIC COMMUNITIES AND ARE GOING NOW TO BE OUR STUDY GOALS. FIRSTLY, WE WANT TO CONTINUE MONITORING CHANGES AND RECOVERY OF THE AQUATIC BIOTA TO ALLOW A MID TERM PERSPECTIVE OF WILDFIRE EFFECTS (8 YEARS). BOTH MACROINVERTEBRATES AND FISHES WILL BE STUDIED IN FIRE DISTURBED AND REFERENCE CONDITION STREAMS OF THE SAME AREA AND TYPOLOGY. SECONDLY, WE WILL STUDY THE EFFECT OF THE OPENED CANOPY, WHICH ALLOW A GREATER LIGHT EXPOSURE AND IMPLIES A PROBABLE SHIFT IN PRODUCTIVITY AND PRIMARY PRODUCERS¿ COMMUNITY STRUCTURE. BEFORE AND AFTER THE FISH¿S	RIERADEVALL SANT	MARIA		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-09	31-12-12	MINECO	Spain

CGL2008-05504-C02-01		NITROGEN STABLE ISOTOPES IN FLUVIAL ECOSYSTEMS, THE ROLE OF BIOTIC COMPONENTS AS INDICATORS OF NITROGEN SOURCES AND PROCESSES	NITROGEN\BENTHIC COMMUNITIES\STREAMS\STABLE ISOTOPES\RETENTION	HUMAN ACTIVITY HAS SIGNIFICANTLY ALTERED THE GLOBAL BIOGEOCHEMICAL CYCLE OF NITROGEN (N), WITH THE CONSEQUENT DRAMATIC INCREASE OF DISSOLVED INORGANIC N (DIN) IN FRESHWATER ECOSYSTEMS. THIS CONSTITUTES A THREAT NOT ONLY FOR THE INTEGRITY OF THESE ECOSYSTEMS, BUT ALSO FOR HUMAN HEALTH. N IS A KEY ELEMENT FOR ORGANISMS AND ITS AVAILABILITY CAN EITHER LIMIT ECOSYSTEM PRODUCTION OR FAVOR EUTROPHICATION; THIS IN TURN, MAY AFFECT THE COMMUNITIES AND REDUCE THEIR CAPACITY TO RETAIN THIS ELEMENT. NEVERTHELESS, IN STREAM ECOSYSTEMS, THE RELATIONSHIP BETWEEN N RETENTION AND CONCENTRATION STILL REMAINS UNCLEAR PROBABLY DUE TO THE COMPLEX NATURE OF BENTHIC COMMUNITIES THAT CONTROL N DYNAMICS IN THESE ECOSYSTEMS. THE CENTRAL OBJECTIVE OF THIS PROJECT IS TO EXAMINE THE RELATIONSHIP BETWEEN N AVAILABILITY AND THE ELEMENTAL COMPOSITION OF THOSE BIOTIC COMPONENTS RESPONSIBLE FOR N UPTAKE/RETENTION (I.E., BIOFILM, MACROPHYTES AND RIPARIAN VEGETATION) IN STREAM ECOSYSTEMS. TO ADDRESS THIS OBJECTIVE, BESIDES OF USING THE N CONTENT, WE WILL ALSO USE THE N ISOTOPIC SIGNATURE (I.E., NATURAL ABUNDANCE OF 15N) OF BOTH THE STREAM WATER AND THE BIOTIC COMPONENTS, BECAUSE THIS SIGNATURE IS SUBJECTED TO THE DIFFERENT	SABATER COMAS	FRANCESC		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-09	31-12-11	MINECO	Spain
CGL2008-04550		FOG WATER EVALUATION IN THE MEDITERRANEAN BASIN OF THE IBERIAN PENINSULA. POTENTIAL APPLICATIONS.		THIS PROJECT MUST BE INCLUDED IN THE STRATEGIC PROGRAMME OF THE SPANISH NATIONAL PLAN NAMED ¿CLIMATE CHANGE AND ENERGY¿. THE MEDITERRANEAN BASIN, PARTICULARLY THE EASTERN SIDE OF THE IBERIAN PENINSULA, FEATURES IMPORTANT PROBLEMS IN WATER AVAILABILITY. HUMAN PRESSURE, IRRIGATED LAND EXPANSION AND SUPER-EXPLOITATION OF WATER RESERVOIRS AMONG OTHERS FACTORS ARE LEADING TO MAJOR PROBLEMS OF WATER AVAILABILITY IN AN EXTENT PART OF THIS REGION. ASCRIBED AS A ONE MORE INPUT THAT TAKES PLACE IN THE HYDROLOGY SYSTEM, FOG WATER IS ONE OF ITS MORE UNKNOWN COMPONENTS ALTHOUGH THE SCIENTIFIC COMMUNITY HAS ALREADY EMPHASISED IN THE NEED FOR DEEPER STUDIES. SINCE 2002 AND WITH THE FUNDING OF TWO NATIONAL PROJECTS, REN2001-1086/HID AND CGL2005-03386, THE SCIENTIFIC GROUP THAT APPLIES FOR THIS PROJECT HAS BEEN WORKING IN THE PROPOSED TOPIC AND HAS ALREADY SETTLED THE BASIS FOR A RESEARCH LINE IN THE FIELD OF FOG WATER COLLECTION. RESULTS HAVE REVEALED THE POTENTIAL OF FOG WATER COLLECTION IN THE VALENCIAN COMMUNITY FOR INTERESTING APPLICATIONS IN FORESTRY RESTORATION AND COMPLEMENTS TO THE HYDROLOGICAL SYSTEM. THESE DECISIVE RESULTS HAVE CONSOLIDATED A RESEARCH LINE IN FOG WATER COLLECTION AND POTENTIAL APPLICATIONS WHICH IS PIONEER AT THE IBERIAN PENINSULA DOMAIN. IN THIS FRAMEWORK, THE FINAL AIM IN THIS PROJECT IS TO GAIN A BETTER AND GREATER KNOWLEDGE ON FOG WATER POTENTIAL IN THE MEDITERRANEAN BASIN OF THE IBERIAN PENINSULA, THIS BEING ONE OF THE MOST UNKNOWN	ESTRELA NAVARRO	MARIA JOSE		FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	FUNDACION CENTRO DE ESTUDIOS AMBIENTALES DEL MEDITERRANEO	01-01-09	31-12-11	MINECO	Spain
CGL2008-01693		PEDO-MORPHOLOGICAL EVOLUTION OF MEDITERRANEAN COASTAL WETLANDS AFFECTED BY HUMAN ACTIVITY	URBAN WATER\EFFICIENCY\REUSE\DEMAND\CONSUMPTION\SAVINGS	WETLANDS ARE UNIQUE AREAS THAT CONCENTRATE A GREAT BIOLOGICAL DIVERSITY, AND OFFER MULTIPLE BENEFITS TO THE HUMANITY BECAUSE CONSTITUTING AN IMPORTANT RESERVE OF WATER FOR THE PLANET AND PRODUCE BIOMASS AND NUTRIENTS FOR THE TROPHIC CHAIN. WETLANDS ARE FUNDAMENTAL FOR THE MAINTENANCE OF THE WATER CYCLE, SINCE THEY PURIFY IT AND THEY RECYCLE, IN THE SAME WAY THAT CAPTURE AND RETAIN WATER FROM RAIN AND THAW. AMONG THEM, THE COASTAL WETLANDS SHOW A GREAT DYNAMISM BUT, IN TURN, THEY ARE THOSE THAT PRESENT THE BIGGEST SENSIBILITY TO CHANGES IN THE ENVIRONMENTAL CONDITIONS. NEVERTHELESS, IN THE LAST DECADES, THE INCREASES OF THE ANTHROPIC PRESSURE AND IN THE ASSOCIATE SOCIO-ECONOMIC DEVELOPMENT HAVE PROVOKED IMPORTANT LOSSES IN THESE ECOSYSTEMS. THE WETLANDS HAS BEEN DRAINED FOR CULTIVATION, DEGRADED BY THE AGRICULTURAL, HUMAN AND INDUSTRIAL POLLUTION (NITROGEN, PHOSPHOROUS, PESTICIDES AND OTHER CHEMICAL SUBSTANCES), THE CONSTRUCTION AND DEVELOPMENT OF INFRASTRUCTURES AND IRRIGATION SYSTEMS, ETC. THESE AGGRESSIONS, TOGETHER WITH A CLIMATE IN CONSTANT CHANGE, WHICH HAS INCREASED THE INCIDENCE OF DROUGHT AND ALTERED THE RAIN REGIME, HAS GIVEN PLACE TO THE IRREVERSIBLE DEGRADATION OR THE DISAPPEARANCE OF MANY OF THESE AREAS, BESIDES TO THE DESTRUCTION OF FLOODING PRAIRIES, OF MANY RIPARIAN HABITATS AND BREEDING AREAS. THE OBJECTIVE OF THIS PROJECT IS THE STUDY OF TWO COASTAL MEDITERRANEAN WETLANDS OF INTEREST, IN A GLOBAL AND INTEGRATED WAY, IN ITS SPATIAL AND TEMPORAL EVOLUTION IN PARALLEL TO HUMAN	ANDREU PEREZ	VICENTE		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	CENTRO DE INVESTIGACIONES SOBRE DESERTIFICACION (CIDE)	CENTRO DE INVESTIGACIONES SOBRE DESERTIFICACION (CIDE)	01-01-09	30-04-12	MINECO	Spain

CGL2008-05618-C02-02		WARMING AND TEMPORALITY EFFECTS ON RIVER ORGANIC MATTER PROCESSING 2- BENTHIC FOODWEB	PREDATION\REFUGE\COASTAL LAGOON\TEMPORARY POND\MEDITERRANEAN LENTIC SYSTEMS\FOOD WEB\SALINITY\PLANKTON\INVERTEBRATE PREDATION	THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE PREDICTS AN INCREASE OF GLOBAL WARMING AND CHANGING PATTERNS OF RAINFALL FREQUENCY AND DISTRIBUTION. IN RIVERS AND STREAMS, THE PREDICTED CHANGES IN THE DISCHARGE PATTERN IN TEMPERATE REGIONS WILL DETERMINE AN INCREASE OF FLOODS AND DROUGHTS FREQUENCY, AND A SUBSTANTIAL CHANGE IN QUANTITY AND QUALITY OF AVAILABLE ORGANIC MATTER. AT THE SAME TIME, TEMPERATURE IS ONE OF THE MAJOR FACTOR AFFECTING DIFFERENT KEY PHYSIOLOGICAL MECHANISMS SUCH AS RESPIRATION, GROWTH, METABOLIC RATE, FEEDING, THEREFORE NOT ONLY AFFECTING INDIVIDUALS BUT ALSO THE INTERACTION BETWEEN ORGANISMS. BOTH FACTORS MIGHT INTERACT IN A PERSPECTIVE OF CLIMATE CHANGE WHERE RISING TEMPERATURE WILL BE COMBINED WITH CHANGES IN DISCHARGE PATTERN. IN INTERMITTENT STREAMS, NATURALLY SUBJECTED TO DROUGHT AND FLOOD EVENTS, THE BENTHIC ORGANISMS USUALLY SUFFER DRASTIC STRUCTURAL AND METABOLIC CHANGES, FROM A WELL DEVELOPED BIOFILM ALGAL COMMUNITY AND GRAZING MACROINVERTEBRATES FEEDING ON IN DROUGH PERIODS (LAST SPRING FOR MEDITERRANEAN RIVERS) TO A MAJOR MICROBIAL HETEROTROPHIC COMMUNITY (FUNGI, BACTERIA, PROTOZOA) AND MACROINVERTEBRATES FEEDING MOSTLY ON PARTICULATE ORGANIC MATTER IN REWETTING PERIODS (IN AUTUMN). IF THIS DISCHARGE TEMPORALITY IS FURTHER AFFECTED BY RISING RIVER WATER TEMPERATURE, THUS INCREASING METABOLIC ACTIVITY (DECOMPOSITION ACTIVITIES, ENZYME REACTIONS, PRODUCTION, FEEDING RATES), THE INTERACTIONS BETWEEN BENTHIC ORGANISMS MIGHT CHANGE TOGETHER WITH A MIS-MATCH BETWEEN	MUÑOZ GRACIA	ISABEL		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-09	31-12-11	MINECO	Spain
CGL2008-06373-C03-02		GROUND WATER POLLUTION FROM AGRICULTURAL AND INDUSTRIAL SOURCES: CONTAMINANT FATE, NATURAL AND INDUCED ATTENUATION, AND VULNERABILITY	POLLUTION\VULNERABILITY\GEOCHEMISTRY\NITRATE	GROUND WATER RESOURCES MANAGEMENT NEEDS TO BE BASED ON A RIGOROUS DESCRIPTION OF THE HYDROGEOLOGICAL AND GEOCHEMICAL PROCESSES THAT GOVERN CONTAMINATS FATE AND THEIR ATTENUATION WITHIN THE AQUIFER. PREVIOUS RESEARCH PROJECT CONDUCTED BY THE TEAMS OF THIS COORDINATED PROJECT HAS BEEN FOCUSED ON POLLUTION FROM AGRICULTURAL (NITRATE) AND INDUSTRIAL (CHLORINATED SOLVENTS) SOURCES. WE HAVE LOOKED FOR THE HYDROGEOLOGICAL FRAMEWORK THAT CONTROL THEIR FATE WITHIN THE AQUIFER SYSTEM, ITS RELATIONSHIP WITH WATER SUPPLY AND HUMAN USES, AND THE EVOLUTION OF CONTAMINANTS, SPECIFICALLY ITS ATTENUATION, USING MULTI-ISOTOPICAL METHODS. IN THIS COORDINATED PROJECT, OUR MAIN OBJECTIVE REPRESENTS A STEP FORWARD FROM THE PREVIOUS RESULTS. WE PROPOSE ADVANCED STUDIES OF NITRATE AND CHLORINATED SOLVENTS DEGRADATION USING ISOTOPIC DATA (15N-NO3, 18O-NO3, 34S-SO4, 18O-SO4, 13C) IN INNOVATIVE LABORATORY AND FIELD-SCALES EXPERIMENTS. FURTHERMORE, WE SEEK TO INTEGRATE HYDROGEOLOGICAL, HYDROCHEMICAL DATA, AND AQUIFER DYNAMICS USING PRESENT VULNERABILITY ASSESSMENT TECHNIQUES, AS MULTIVARIATE LOGISTIC AND NON-LINEAR REGRESSION METHODS. IN THAT SENSE, WE LOOK FORWARD A BETTER	GIMENEZ IZQUIERDO	FRANCISCO JAVIER		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA QUIMICA	DPTO. INGENIERIA QUIMICA	01-01-09	30-06-12	MINECO	Spain
CGL2008-04721		COLLOID/ROCK AND COLLOID/CONTAMINANT INTERACTION MECHANISM AND KINETICS: IMPLICATIONS FOR THE CONTAMINANT MIGRATION IN THE ENVIRONMENT.	CONTAMINATION\GROUNDWATER\PROTECTION\CHEMICAL STATUS\TENDENCIES\THRESHOLD VALUES	RECENT FIELD AND LABORATORY STUDIES ALLOWED IDENTIFYING THE IMPORTANCE OF THE PRESENCE OF COLLOIDS ON CONTAMINANT MIGRATION THROUGH GROUNDWATER. IN THE LAST DECADE, MANY EFFORTS HAVE BEEN MADE TO UNDERSTAND THE CONDITIONS IN WHICH COLLOID MAY FACILITATE OR HINDER CONTAMINANT TRANSPORT AND SIGNIFICANT RESULTS HAVE BEEN OBTAINED ON SIMPLE MODEL SYSTEMS. HOWEVER, THE KNOWLEDGE OF MODEL SYSTEMS IS STILL NOT ADEQUATE FOR THE PREDICTION OF COLLOID BEHAVIOR IN NATURAL SYSTEMS. THE PRINCIPAL SCIENTIFIC ISSUE THAT LIMITS PREDICTIONS IS TO UNDERSTAND HOW COLLOIDS BEHAVE IN NATURAL SUBSURFACE SYSTEMS WHICH PRESENT CHEMICAL AND PHYSICAL HETEROGENEITIES THAT CAN AFFECT THE COLLOID BEHAVIOR BOTH IN TEMPORAL AND SPATIAL SCALE. THE MAIN OBJECTIVE OF THIS PROJECT IS TO STUDY THE COLLOID/ROCK AND COLLOID/CONTAMINANTS INTERACTION MECHANISMS AND KINETICS, TO UNDERSTAND THE IMPLICATIONS ON THE CONTAMINANT MIGRATION IN THE NATURAL ENVIRONMENT AND TAKING INTO ACCOUNT THE PHYSICO-CHEMICAL HETEROGENEITIES OF THE ROCK. DETAILED MICROSCALE CHARACTERIZATION OF NATURAL ROCKS (GRANITE, CLAYS) WILL BE CARRIED OUT AND COLLOID/ROCK INTERACTIONS WILL BE ANALYZED AT A MICRO-SCALE BY DIFFERENT TECHNIQUES AS MICRO-PIXE (PARTICLE INDUCED X-RAY EMISION) AND CONFOCAL MICROSCOPY AND INCLUDING AFM, IN PRESENCE OF LIQUID	MISSANA	TIZIANA		CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	01-01-09	31-12-11	MINECO	Spain

CGL2008-06394-C02-01		MODELLING STREAM-AQUIFER RELATIONS. APLICATION TO THE MANCHA ORIENTAL SYSTEM	HYDROGEOLOGIC CHARACTERIZATION\HIDROGEOLOGIC INFORMATION SYSTEM\RIVER-AQUIFER INTERACTION\MANAGEMENT TOOLS.	THIS RESEARCH PROJECT AIMS TO DEVELOP, IMPLEMENT AND VALIDATE A METHODOLOGY THAT ALLOWS TO ANALYZE AND QUANTIFY THE RELATIONSHIPS BETWEEN OVEREXPLOITED AQUIFERS AND THE SURFICIAL WATER COURSES ASSOCIATED. THE INVESTIGATION TRIES TO ACHIEVE A DETAILED KNOWLEDGE ON THE MECHANISMS ABOUT THE WATER-EXCHANGE BETWEEN AQUIFERS AND RIVERS, AND THEIR EVOLUTION IN RELATION TO CHANGES IN THE EXPLOITATION MANAGEMENT STRATEGIES AND IN THE RECHARGE. THE MAIN GOAL OF THE PROJECT IS TO DESIGN A USEFUL MANAGEMENT TOOL FOR THE SUSTAINABILITY OF THE WATER RESOURCES ON A REGIONAL SCALE, SPECIALLY THOSE PLACED AT ARID OR SEMI-ARID CLIMATES. PROJECT RESULTS ARE MANAGED TO WATER USERS SUCH AS FARMERS, STAKEHOLDERS, AND WATER AUTHORITIES. THE STUDY AREA WILL BE THE MANCHA ORIENTAL HYDROGEOLOGICAL SYSTEM. IN ORDER TO GET THIS GOAL THE FOLLOWING SECONDARY OBJECTIVES ARE INTENDED: 1. TO KNOW THE SPATIAL AND TEMPORAL BEHAVIOUR OF THE MANCHA ORIENTAL HYDROGEOLOGICAL SYSTEM AND ITS RELATIONSHIP WITH THE JUCAR RIVER WHEN INFLUENCING BY THE GROUNDWATER ABSTRACTIONS. 2. TO QUANTIFY AND CHARACTERIZE THE INTERACTIONS BETWEEN AQUIFER AND RIVER ON THE BASIS OF THE KNOWLEDGE OF THE HYDRAULIC TYPOLOGY OF RIVER (GAINING, LOSING AND DISCONNECTED RIVER, ETC). 3. TO ANALYZE THE MODELLING SYSTEMS ABOUT THE AQUIFER-RIVER RELATIONSHIPS TAKING INTO ACCOUNT THE	CASSIRAGA	EDUARDO F.		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	DPTO. INGENIERIA HIDRAULICA Y MEDIO AMBIENTE	DPTO. INGENIERIA HIDRAULICA Y MEDIO AMBIENTE	01-01-09	31-12-11	MINECO	Spain
CGL2008-06394-C02-02		HIDROGEOLOGIC INFORMATION SYSTEM OF MANCHA ORIENTAL SYSTEM (SE SPAIN).		THIS RESEARCH SUBPROJECT TRIES TO GIVE A QUALITATIVE JUMP IN THE MANAGEMENT OF GROUNDWATER RESOURCES IN OVEREXPLOITED AREAS IN WHICH CAN BE FOUND SENSITIVE ECOSYSTEMS TO THE DETERIORATION OF THE SURFICIAL WATER COURSES. THIS IS THE CASE STUDY OF THE MANCHA ORIENTAL HYDROGEOLOGICAL SYSTEM (SE SPAIN) AND ITS REALTIONSHIP WITH THE JUCAR RIVER. HEAVY PUMPING IN MANCHA ORIENTAL BEARS TO A PROGRESSIVE DECREASE IN THE RIVER BASE FLOW. THIS SITUATION IS ENHANCED DURING DROUGHTS AND IRRIGATION PERIOD, BECAUSE OF THE NET GROUNDWATER PUMPING SURPASSES THE AVERAGE AQUIFER RECHARGE. THEREFORE, MANCHA ORIENTAL SYSTEM REPRESENTS A SUITABLE PILOT AREA FOR THE DEVELOPMENT OF MANAGEMENT TOOLS TO MAKE COMPATIBLE THE PRESERVATION OF RIVER ECOSYSTEMS AND GROUNDWATER ABSTRACTIONS TO MAINTAIN THE SOCIOECONOMIC DEVELOPMENT OF THE REGION. THE MAIN GOALS OF THE SUBPROJECT ARE: 1.TO KNOW THE SPATIAL AND TEMPORAL BEHAVIOR OF THE MANCHA ORIENTAL SYSTEM AND ITS RELATIONSHIP WITH THE JUCAR RIVER WHEN INFLUENCING BY THE GROUNDWATER ABSTRACTIONS, AND 2.TO DESIGN AND IMPLEMENT DATA STORAGE AND HANDLING SYSTEM FOR THE DATA COLLECTED AND THOSE GENERATED (RASTER AND VECTORIAL FILES) DURING THE PROJECT DEVELOPMENT. THESE OBJECTIVES WILL BE REACHED THROUGH THE 3D HYDROGEOLOGICAL CHARACTERIZATION OF THE AQUIFER SYSTEM, AS WELL AS THE DETERMINATION OF ALL THE	CASTAÑO FERNANDEZ	SANTIAGO		UNIVERSIDAD DE CASTILLA-LA MANCHA	INSTITUTO DE DESARROLLO REGIONAL	INSTITUTO DE DESARROLLO REGIONAL	01-01-09	31-12-11	MINECO	Spain
CGL2008-05095		IDENTIFICATION OF REGIME-SHIFTS THROUGH PALAEOECOLOGICAL MARKERS IN A MEDITERRANEAN COASTAL LAGOON	WETLANDS\FLOOD\GROUNDWATER FLOW\CARBON\NITROGEN\CONNECTIVITY\STRUCTURE\COMMUNITY	THE UNDERSTANDING OF NON LINEAL PROCESSES THAT DRIVE ECOSYSTEM DYNAMICS WAS ORIGINALLY DESCRIBED IN SHALLOW LAKES, WHERE APERIODIC ABRUPT AND UNPREDICTABLE TRANSITIONS BETWEEN CLEAR WATER PHASES WITH MACROPHYTES, AND TURBID PHASES WITH PHYTOPLANKTON WERE REPORTED (REGIME SHIFTS). THIS DYNAMICS CONTRASTS WITH THE CLASSICAL VIEW OF THE LIMNOLOGY OF LAKES WITH PERIODIC AND PREDICTABLE VERTICAL MIXING, AND CONSTITUTES A NEW POINT OF VIEW FOR THE MODELLING OF ECOSYSTEM DYNAMICS. OUR TEAM HAS BEEN MONITORING FOR MORE THAN 20 YEARS THE COASTAL LAGOON OF S'ALBUFERA DES GRAU, A PRISTINE ECOSYSTEM WITH CHANGES BETWEEN MACROPHYTIC AND PHYTOPLANKTONIC STATES. IN 2007 A REGIME SHIFT WAS REPORTED, AND THE LAGOON TURNED INTO A TURBID STATE AFTER SEVEN YEARS OF MACROPHYTE DOMINANCE. THIS PROJECT IS AIMED TO THE IDENTIFICATION OF BOTH REGIMES AT CENTURY SCALE WITH A PALAEOECOLOGICAL APPROACH. WE WILL ANALYSE THE CARBON AND NITROGEN ISOTOPE COMPOSITION IN ORGANIC MATTER, AS WELL AS PHOTOSYNTHETIC PIGMENT CONTENT. MOREOVER, TWO PROXIES OF SALINITY WILL BE STUDIED FROM CALCITE GEOCHEMISTRY IN OSTRACOD VALVES: OXYGEN STABLE ISOTOPE COMPOSITION AND TRACE ELEMENT GEOCHEMISTRY. ALTERNATIVELY, WE WILL GENERATE	PRETUS REAL	JUAN LUIS		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-09	31-12-11	MINECO	Spain

CGL2008-04938		GROUNDWATER PROTECTION AGAINST CONTAMINATION. CONTRIBUTION TO THE DEVELOPMENT OF THE EUROPEAN UNION DIRECTIVE 2006/118/CE	DAM\COASTAL AQUIFER\MARINE INTRUSION\RIVER-AQUIFER RELATION\MOTRIL-SALOBREÑA AQUIFER\ISOTOPES\HYDROCHEMISTRY \MATHEMATICAL MODELING	THIS RESEARCH IS A CONTINUATION OF THE PROJECT REN2003/HID/01580, WHERE IT WAS APPLIED THE WATER FRAMEWORK DIRECTIVE (WFD) OF THE EUROPEAN UNION IN THE SPANISH PILOT SITE OF THE GUADALHORCE RIVER BASIN. THIS NEW PROPOSAL HAS THE INTENTION TO DEVELOP, IN THE SAME BASIN, THE GROUNDWATER DIRECTIVE (GD) 2006/118/CE FOR THE PROTECTION OF GROUNDWATER AGAINST CONTAMINATION, WHICH WAS RECENTLY DEVELOPED. THE OBJECTIVES TO BE REACHED ARE THE CONTRIBUTION TO THE DEFINITION OF THE THRESHOLD VALUES AND THE GOOD CHEMICAL STATUS OF GROUNDWATERS. IN ORDER TO REACH THEM, THE ORIGINS OF THE CONTAMINATION WITH ISOTOPIC MEASUREMENTS AND THE NATURAL PRESENCE OF IN WATER WILL BE ANALYSED. NEW RULES WILL BE ESTABLISHED FOR THE IDENTIFICATION AND CHANGE OF POSITIVES OR NEGATIVE TENDENCIES OF POLLUTANTS OR PARAMETERS IN GROUNDWATER. ALSO SEVERAL RULES WILL BE PROPOSED FOR THE DELINEATION OF PROTECTED AREAS FOR THE PREVENTION OR LIMITATION OF ACTIVITIES OR ENTRY OF POLLUTANTS IN GROUNDWATER.	CARRASCO CANTOS	FRANCISCO		UNIVERSIDAD DE MALAGA	DPTO. ECOLOGIA Y GEOLOGIA	FACULTAD DE CIENCIAS	01-01-09	31-12-12	MINECO	Spain
CGL2008-04502		CHRONIC TOXICITY OF RIVER SEDIMENTS IN SITES FRON WATER-QUALITY SURVEILLANCE NETWORKS AND ASSESSMENT OF METAL BIOACCUMULATION IN TUBIFEX TUBIFEX (ANNELIDA: CLITELLATA)	Q. ILEX\Q. FAGINEA\DROUGHT\GROWING SEASON\PHENOLOGY\GROWTH\MODELLING.	AN OBJECTIVE AND INTEGRATIVE EVALUATION OF THE ECOLOGICAL STATE OF THE WATER BODIES REQUIRES THE RECOGNITION OF THE SEDIMENT AS AN IMPORTANT AND DIFFERENCIATED AQUATIC COMPARTIMENT WHERE CHEMICAL COMPOUNDS REACH TO HIGH CONCENTRATIONS AND MAY PERSIST DURING LONGER PERIODS OF TIME. THE INCLUSION OF DATA ON THE SEDIMENT TOXICITY TO THE COMMON DATA BASES BUILT ONLY WITH DATA RELATIVE TO CHEMISTRY AND COMPOSITION AND STRUCTURE OF BENTHIC COMMUNITIES MAKES POSSIBLE A DIAGNOSTIC ON THE CAUSE / EFFECT RELATIONSHIPS OF THE CONTAMINANTS ON THE BIOTA. THE WATER FRAMEWORK DIRECTIVE (EEC, 2000) DO NOT ESTABLISH THE STUDY OF SEDIMENT TOXICITY IN THE APPROACH DESCRIBED FOR THE EVALUATION OF THE ECOLOGICAL STATE OF WATER BODIES, THUS HAVING A RISK OF ARRIVING TO ERRONEOUS CONCLUSIONS. IN THE PRESENT RESEACH PROJECT, WE AIM FIRST TO ADD TO THE DATA BASE BUILT IN THE LAST 4 YEARS NEW DATA ON THE CHRONIC TOXICITY OF SEDIMENTS SAMPLED IN SITES CONTROLLED BY THE REGULATORY WATER AGENCIES FOR WATER-QUALITY SURVEILLANCE NETWORKS IN RIVERS OF THE NORTHERN SPAIN. THESE DATA WILL BE OBTAINED FROM CHRONIC SEDIMENT BIOASSAYS WITH THE AQUATIC OLIGOCHAETE TUBIFEX TUBIFEX (ANNELIDA: CLITELLATA) AND WILL BE	RODRIGUEZ RODRIGUEZ	PILAR		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. ZOOLOGIA Y DINAMICA CELULAR ANIMAL	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-09	31-12-11	MINECO	Spain
CGL2008-01442		MODELLING OF MACROPHYTES EFFECTS ON FLOW DYNAMICS AND SEDIMENT TRANSPORT IN THE LOWER EBRO RIVER	SOILS\MORPHO-STRUCTURE\HYDROLOGY\MEDITERRANEAN COASTAL WETLANDS\HUMAN PRESSURE\GIS\SPATIAL-TEMPORAL ANALYSIS\SDIS\ENVIRONMENTAL QUALITY	IN THE LAST YEARS, THE MASSIVE PROLIFERATION OF THE MACROPHYTES IN THE LOWER EBRO RIVER HAS BEEN SPECTACULAR. IN CONSEQUENCE, GENERAL CHANGES IN FLOW HYDRAULICS AND SEDIMENT TRANSPORT DYNAMICS ARE OBSERVED. NEVERTHELESS, THE REPERCUSSIONS ON WATER AND SEDIMENT LOAD AND THEIR EFFECTS ON FLOW DYNAMICS ARE NOT WELL UNDERSTOOD, EVEN THOUGH SEVERAL STUDIES HAVE ATTEMPTED TO RELATE THE HYDRO-ECOLOGICAL INTERACTIONS OF THE MACROPHYTES (I.E. DISCHARGE, VELOCITY, HYDRAULIC GEOMETRY). THEREFORE, UNDERSTANDING THE MACROPHYTES RELATIONSHIPS VERSUS FLOW RESISTANCE, CHANNEL HYDRAULICS AND SEDIMENT TRANSPORT WILL ALLOW BOTH MAINTAINING THE HYDRAULIC EFFICIENCY OF THE RIVER CHANNEL AND AVOIDING THE FLUVIAL ECOSYSTEM DEGRADATION. THE MAIN AIM OF THIS PROJECT IS TO ESTABLISH AND MODEL THE EFFECTS ON FLOW HYDRODYNAMICS AND SEDIMENT TRANSPORT AS CONSEQUENCE OF THE MASSIVE PROLIFERATION OF THE MACROPHYTES IN THE LOWER EBRO RIVER. IN DETAIL, THE MAIN GOALS ARE: I) TO ANALYZE THE EFFECTS OF THE MACROPHYTES ON THE HYDRO-SEDIMENTARY DYNAMICS, ON CHANNEL REACH SCALE. II) TO ANALYZE THE EFFECTS OF THE MACROPHYTES ON HYDRO-SEDIMENTARY DYNAMICS, ON LOCAL SCALE; III) TO MODEL THE MACROPHYTES EFFECTS ON FLOW AND SEDIMENT	ROVIRA GARCIA	ALBERTO		INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTARIES (IRTA)	XCENTRO DE ACUICULTURA	XCENTRO DE ACUICULTURA	01-01-09	30-06-12	MINECO	Spain

CGL2009-09801		HISTORIC RECONSTRUCTION BY REMOTE SENSING OF THE HYRODYNAMIC AND AQUATIC VEGETATION COMMUNITIES OF THE DOÑANA MARSHES	PHYTOPLANKTON\MACROPHYTES\ALLELOPATHY\UVRADIATION\EUTROPHIZATION\GLOBAL CHANGE\OOSPORES\WETLAND MANAGEMENT\BIODIVERSITY\VULNERABILITY	DOÑANA MARSHES ARE AN INTERNATIONAL REKNOWN WETLAND. EVEN THOUGH, THE SEASONAL FLOOD DYNAMICS OF THE MARSHES, QUALITATIVELY WELL DESCRIBED, HAS RECEIVED FEW QUANTITATIVE STUDIES AND LACKS A HISTORICAL RECONSTRUCTION. THE SATELLITE IMAGE BANK OF THE GIS AND REMOTE SENSING LAB OF THE DOÑANA BIOLOGICAL STATION (LAST-EBD) IS THE FOUNDATION OF THIS PROJECT, IN WHICH WE WILL USE THE RADIOMETRIC DATA OF LANDSAT IMAGES TO RECONSTRUCT FLOOD LEVELS, TURBIDITY, DEPTH AND AQUATIC VEGETATION COVER OF THE MARSHES FOR THE LAST 30 YEARS. IN A PREVIOUS PROJECT WE DEVELOPED TECHNIQUES TO ANALYZE THE TEMPORAL SERIES OF SATELLITE IMAGES AND TO GENERATE MODELS OF SURFACE FLOODED, TURBIDITY AND DEPTH FROM TM AND ETM+ IMAGES. IN THIS PROJECT WE WILL VALIDATE THE MODELS AND GENERATE A HISTORICAL CARTOGRAPHY OF THE MARSHES. WE WILL ALSO DEVELOP NEW TECHNIQUES TO MAP AQUATIC VEGETATION COMMUNITIES, PARTICULARLY TO RECENT PLANT INVADERS, THE WATER FERN AZOLLA FILICULOIDES AND THE DENSEFLOWER CORDGRASS SPARTINA DENSIFLORA. AMONG OTHERS, THE USE OF TEMPORAL SIGNATURES, TEXTURE INFORMATION DERIVE FROM SYNTHETIC APERTURE RADAR IMAGES, OR BIDIRECTIONAL REFLECTANCE FUNCTIONS. AIRBORNE HYPERSPECTRAL SENSORS CAN INCREASE OUR CAPACITY TO	BUSTAMANTE DIAZ	JAVIER MARIA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION BIOLOGICA DE DOÑANA (EBD)	ESTACION BIOLOGICA DE DOÑANA (EBD)	01-01-10	30-09-13	MINECO	Spain
CGL2009-12910-C03-02		AQUIFER RECHARGE AND DISCHARGE PROCESSES BY MEANS OF NATURAL TRACERS: APLICATION TO GRAN CANARIA	RECHARGE\DISCHARGE\AQUIFER\CATALONIA\DOÑANA\MURCIA\GRAN CANARY\GUARANI\RADON	THE IDENTIFICATION AND QUANTIFICATION OF AQUIFERS RECHARGE PROCESSES IS A FUNDAMENTAL ISSUE FOR THE CONSERVATION AND MANAGEMENT OF GROUNDWATER RESOURCES, AND IS AN IMPORTANT SOURCE OF UNCERTAINTY IN THE CALCULATION OF HYDRAULIC BUDGETS. DIFFERENT TECHNIQUES ARE USED TO ASSESS THIS RECHARGING PROCESS. SOME OF THEM, BASED ON STABLE ISOTOPES AND HYDROCHEMISTRY, HAVE SHOWN THEIR RELIABILITY OVER TIME; NEVERTHELESS, TO REDUCE UNCERTAINTY, THEY MUST BE CRITICALLY COMPARED AND CONTRASTED. THE APPLICATION OF HYDROGEOCHEMICAL AND ISOTOPE TECHNIQUES IN THE LAST 40 YEARS IN STUDIES OF GROUND WATER IN THE CANARY ISLANDS HAVE CONTRIBUTED IN A NOTABLE WAY TO THE ACCEPTED THEORIES OF GROUNDWATER FLOW IN VOLCANIC ISLANDS. IN GRAN CANARIA ISLAND, THE BASIC CONCEPT OF GROUNDWATER FLOW IS THAT OF A UNIQUE RADIAL FLOW AQUIFER FROM THE TOP OF THE ISLAND TO THE COAST. THUS, THE AQUIFER INCORPORATES RECHARGE WATER WITH DIFFERENT SALININITIES DEPENDING ON THE DISTANCE FROM THE SEA. THIS RECHARGING PROCESS CAN BE QUANTIFIED USING A CHLORIDE BUDGET. ALSO, THE EXISTENCE OF RAPID ALTITUDE CHANGES OVER SHORT DISTANCES ALLOWS TO CHARACTERIZE THE RECHARGE WATERS USING THE STABLE ISOTOPES 18O; D), BEING NECESSARY THE IDENTIFICATION OF DIFFERENT PROCESSES, LIKE VOLCANIC ORIGIN CO2 CONTRIBUTION OR IRRIGATION RETURNS USING OTHERS ISOTOPE ANALYSIS (13C, 34S OR 15N, FOR EXAMPLE). THE	CABRERA SANTANA	MARIA DEL CARMEN		UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA	DPTO. FISICA	DPTO. FISICA	01-01-10	31-10-13	MINECO	Spain
CGL2009-10620		STUDY OF THE KEY POINTS TO ESTIMATE ENVIRONMENTAL FLOWS TO ESTUARIES	ARTIFICIAL RECHARGE\INFILTRATION POND\PROBABILISTIC RISK ASSESSMENT\HETEROGENEITY\MULTICOMPONENT REACTIVE TRANSPORT	THE APPROVAL OF THE HYDROLOGIC PLANNING REGULATION IN SPAIN (ORDEN ARM 2656/2006) FORCES THE WATER MANAGERS TO ESTIMATE THE ENVIRONMENTAL FRESHWATER FLOW TO BAYS AND ESTUARIES, SO THAT THE STRUCTURE AND FUNCTIONALITY WITHIN THOSE SYSTEMS IS MAINTAINED. DESPITE THE ECONOMICAL AND ECOLOGICAL IMPORTANCE OF ESTUARIES, THE METHODOLOGIES DEVELOPED TO ESTIMATE THE FRESHWATER INFLOWS ARE SCARCE, PROBABLY DUE TO THE GREAT COMPLEXITY OF THE PHYSICAL, CHEMICAL AND ECOLOGICAL PROCESS WITHIN THESE SYSTEMS. THERE ARE SEVERAL RESEARCH GROUPS WHICH HAVE BEEN WORKING IN ORDER TO IMPROVE THE KNOWLEDGE ON THIS TOPIC. AS A REFLECT OF THEIR INVESTIGATIONS, SEVERAL STUDY AREA SPECIFIC METHODOLOGIES AND APPROACHES HAVE BEEN DEVELOPMED, WHICH COINCIDE IN THE FOLLOWING KEY POINTS: 1) THE ASSESSMENT OF ENVIRONMENTAL FLOW IS MORE COMPLEX THAN FOR FLUVIAL SYSTEM; 2) EACH ESTUARY IS UNIQUE, AND THE FRESHWATER INFLOW ESTIMATION SHOULD BE DONE BASED ON ITS OWN CHARACTERISTICS, BUT RECOGNISING THE GENERAL PATTERNS OF ALL ESTUARIES; 3) USE OF COMPUTATIONAL MODELS IS ESSENTIAL TO ANALYSE THE COMPLEX PRESSURES ON ESTUARIES. MOST OF THE METHODOLOGIES ALSO CONSIDER THE SALINITY AS AN EXCELLENT INDICATOR	ALVAREZ DIAZ	CESAR		UNIVERSIDAD DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	01-01-10	31-12-12	MINECO	Spain

CGL2009-09770		EXPERIMENTAL DESIGN OF A CASCADE FLUSHING FLOW PROGRAMME BASED ON PHYSICAL AND ECONOMIC CRITERIA FOR THE HYDROSEDIMENTARY RESTORATION OF THE LOWER EBRO AND ITS MAIN TRIBUTARIES	BIOGEOCHEMISTRY\NUTRIENTS\METABOLISM\STABLE ISOTOPES\ENRICHMENT\LAKES	THE MAIN GOAL OF THE PROJECT IS TO DEVELOP A CASCADE FLUSHING FLOW PROGRAMME ('SICMEC') BASED ON THE ANALYSIS, INTEGRATION AND MODELLING OF BOTH PHYSICAL PROCESSES AND ECONOMIC PARAMETERS OF THE RIVER BASINS DRAINING INTO THE RIBARROJA RESERVOIR (RIVER EBRO). THE SICMEC REPRESENTS THE STARTING POINT FOR RESTORATION OF THE HYDROSEDIMENTARY DYNAMICS OF THE HIGHLY REGULATED RIVERS SEGRE AND CINCA AND, CONSEQUENTLY, OPTIMISE THE FLUSHING FLOW PROGRAMME OF THE LOWER RIVER EBRO THAT HAS BEEN OPERATIONAL SINCE 2002. WE PROPOSE: (I) TO DESIGN EXPERIMENTAL RELEASES FROM THE MAIN RESERVOIRS IN THESE TWO CATCHMENTS, (II) TO CONTINUE THE EXPERIMENTAL FLUSHING FLOW RELEASES IN THE LOWER EBRO, AND (III) TO EXAMINE NATURAL FLOODS THAT OCCUR DURING THE COURSE OF THE PROJECT. FOR EACH OF THESE THREE ELEMENTS, THE FUNDAMENTAL PHYSICAL PROCESSES OF FLOOD ROUTING, SEDIMENT TRANSPORT AND MORPHOSEDIMENTARY ADJUSTMENTS OF THE RIVERCHANNEL WILL BE EXAMINED. WE WILL USE STANDARD MONITORING TECHNIQUES IN HYDROLOGY (E.G. DOPPLER SENSORS TO MEASURE FLOW VELOCITY) AND FLUVIAL GEOMORPHOLOGY (E.G. DEPTH INTEGRATING SAMPLERS AND TURBIDITY PROBES), TOGETHER WITH THE MOST RECENT ADVANCED TECHNIQUES FOR ASSESSMENT	BATALLA	RAMON J		UNIVERSIDAD DE LLEIDA	OPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	OPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	01-01-10	31-12-12	MINECO	Spain
CGL2009-12229		MODELING THE INFLUENCE OF FLUSHING ON OLIGOTROPHICATION OF SHALLOW LAKES. THE ALBUFERA OF VALENCIA, A CASE OF STUDY	INVASIVE SPECIES\INTRODUCED FISH\GLOBAL ECOLOGICAL CHANGE\ECOLOGICAL IMPACT	THE MAIN GOAL OF THIS WORK IS TO CONSTRUCT A MODEL TO DESCRIBE THE RELATIOSHIP BETWEEN FLUSHING (HIGH LOW-NUTRIENT WATER INFLOWS) AND THE DEVELOPMENT OF THE PLANKTONIC COMMUNITY IN HYPERTROPHIC SYSTEMS, TAKING THE ALBUFERA OF VALENCIA AS A CASE OF STUDY. WE WILL FOLLOW CLOSELY THE CLEAR WATER PHASE EVENTS THAT ARE PRODUCED IN THIS LAKE AFTER EMPTYING THE RICE FIELDS IN WINTER AND THEIR RELATION WITH FLUSHING INTENSITY. NUTRIENT BALANCES AND STOICHIOMETRY WILL BE STUDIED IN RELATION WITH THE DEVELOPMENT OF THE DOMINANT PLANKTONIC SPECIES, AS WELL AS WITH THE DENSITY AND DIVERSITY OF THE PLANKTON COMMUNITY. WE WILL DEEPEN IN THE STUDY OF THE CARBON CYCLE BY ANALYSING THE PRODUCTION AND DECOMPOSITION PROCESSES AND THE IMPORTANCE OF THE MICROBIAL LOOP IN THE SYSTEM. WE WILL LOOK AT THE CHANGES INDUCED BY FLUSHING IN THE TROPHIC FOOD WEB AND SPECIFIC PLANKTON COMMUNITY COMPOSITION. WE WILL ADDITIONALY MAKE A RECONSTRUCTION OF THE HISTORICAL EUTROPHICATION PROCESS, BASED ON RECENT SEDIMENTARY SEQUENCES, THAT WOULD HELP TO UNDERSTAND THIS PROCESS AND TO VISUALIZE THE PLANCTONIC COMMUNITY BEFORE LAST CENTURY HUMAN IMPACT. THE MODELIZATION OF THE PROCESSS THAT	MIRACLE SOLE	MARIA ROSA		UNIVERSIDAD DE VALENCIA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	01-01-10	31-12-13	MINECO	Spain
CGL2009-10292		PHYTOPLANKTON AND SUBMERGED MACROPHYTES. THEIR RESPONSES TO GLOBAL CHANGES (INCREASE IN ULTRAVIOLET RADIATION AND EUTROPHICATION) AND SIGNIFICANCE IN WETLAND MANAGEMENT.	COASTAL SAND DUNE\ECOPHYSIOLOGY\OCEAN WATER\STABLE ISOTOPES\SEA LEVEL RISE\WATER SOURCES\PLANT DISTRIBUTION	MANKIND NEEDS GOOD QUALITY WATER. HOWEVER, AT PRESENT, MANY AQUATIC ECOSYSTEMS DO NOT HAVE THE DESIRABLE QUALITY STATUS. THEREFORE ANY MANAGEMENT, CONSERVATION AND/OR RESTORATION INITIATIVE THAT GUARANTEE GOOD WATER QUALITY IS WELCOME. THE FACT THAT SOME AQUATIC ECOSYSTEMS CAN SHOW ALTERNATIVE STATES IS WELL KNOWN: A) A CLEAR WATER SYSTEM DOMINATED BY SUBMERGED AQUATIC VEGETATION AND WITH MUCH MORE BIODIVERSITY OR B) A TURBID PHYTOPLANKTON-DOMINATED SYSTEM IN WHICH AQUATIC VEGETATION DISAPPEARS AND ALL LIFE FORMS RELATED TO IT. CONSERVATION AND RESTORATION GOALS ARE FOCUSSED ON STABILIZING THE SYSTEMS IN B, THAT IS OBTAINING THE SUBMERGED AQUATIC VEGETATION FULLY DEVELOPED WITH ALL ITS BENEFITS. THE IMPORTANCE OF AQUATIC VEGETATION IN THE ACHIEVEMENT AND MAINTENANCE OF TRANSPARENT AND CLEAN WATERS, WITH FEW PLANKTONIC PRIMARY PRODUCERS, WAS ALREADY ESTABLISHED IN THE SEVENTIES. IN SPITE OF THIS, AN INTEGRATED PICTURE OF THE PHYTOPLANKTON-AQUATIC VEGETATION INTERACTION THAT COMBINES ALL THE INFORMATION REGARDING THE ENVIRONMENTAL COMPLEXITY DOES NOT EXIST YET. IT IS NOT KNOWN WHETHER THE TREND IN PREDICTED GLOBAL CHANGES WILL AFFECT THESE INTERACTIONS AND HOW. IT	RODRIGO ALACREU	MARIA ANTONIA		UNIVERSIDAD DE VALENCIA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	01-01-10	31-12-13	MINECO	Spain

CGL2009-07830		GEOMETRICAL AND FACIES ANALYSIS OF SEDIMENTARY BODIES AS OUTCROPPING ANALOGS FOR HYDROCARBONS RESERVOIRS AND AQUIFERS: TRIASSIC AND NEOGENE EXAMPLES FROM SOUTH IBERIA (II)	MORPHOLOGICAL EVOLUTION\FLUVIAL DYNAMICS\ALLUVIAL PLAIN\INDUCED MORPHOLOGICAL ADJUSTMENTS\LOWER SEGURA\VEGA MEDIA	THIS PROJECT INVOLVES FOUR SEDIMENTARY BASINS LOCATED IN THE SOUTHERN IBERIAN PENINSULA. SEVERAL EXAMPLES OF TRIASSIC AND NEOGENE ENSEMBLES WITH CONTINENTAL AND SHALLOW-MARINE ORIGIN ARE SELECTED FOR THEIR SEDIMENTOLOGIC ANALYSIS AS OUTCROPPING ANALOGS OF UNDERGROUND RESERVOIRS OF FLUIDS (WATER, HYDROCARBON, INDUSTRIAL WASTE OR POLLUTANT GASES). THE AIM OF THIS PROJECT IS TO PREPARE A POROUS SEDIMENTARY BODIES CATALOGUE, INCLUDING THE DESCRIPTION OF THEIR MAIN FEATURES (GEOMETRY, PETROPHYSICS AND LITHOFACIES), AS WELL AS THE MECHANISMS CONTROLLING THE DIFFERENT-SCALE HETEROGENEITIES AND THEIR MODELLING, IN ORDER TO PROVIDE SUITABLE MODELS FOR USING IN APPLIED GEOLOGY. THIS OBJECTIVE WILL BE ACHIEVED THROUGH THE ACCOMPLISHMENT OF NINE PARTIAL OBJECTIVES INVOLVING FROM UPDATING AND ADAPTATION OF PREVIOUS INFORMATION AND NEW FIELD DATA ACQUISITION TO QUANTITATIVE ANALYSIS PERFORMANCE AND 3D MODELS ELABORATION. THIS PROPOSAL REPRESENTS THE CONTINUITY OF A PREVIOUS PROJECT THAT STILLS IN FORCE, ALTHOUGH TEN NEW TARGETS ARE DEFINED. SOME OF THEM ARE LOCATED IN TWO RESEARCH AREAS THAT ARE NEW IN THIS PROJECT, BUT WHICH WERE STUDIED BY SOME OF THE RESEARCHERS OF THE PRESENT TEAM FROM ANOTHER POINT OF VIEW IN	VISERAS ALARCON	CESAR		UNIVERSIDAD DE GRANADA	DPTO. ESTRATIGRAFIA Y PALEONTOLOGIA	FACULTAD DE CIENCIAS	01-01-10	31-12-13	MINECO	Spain
CGL2009-08338		EMERGENT AQUATIC MACROPHYTES AS ELEMENTS TO PROMOTE ISOLATION OF BIOTECHNOLOGICALLY ACTIVE MICROORGANISMSM IN WATER TREATMENT		IT IS GENERALLY ASSUMED THAT PLANTED AREAS AFFECT POSITIVELY THE WATER RESTORATION CAPACITY OF CONSTRUCTED WETLANDS. THIS FACT DERIVES MAINLY FROM THE STIMULATION OF THE GROWTH OF BELOWGROUND MICROBIAL POPULATION DUE TO THE ACTIVITY OF MACROPHYTES. HOWEVER, FUNDAMENTAL INTERACTIONS BETWEEN PLANTS AND ASSOCIATED MICROORGANISMS IN TREATMENT WETLANDS REMAIN ONLY PARTLY UNDERSTOOD AT A MOLECULAR LEVEL. THE AIM OF OUR PROJECT IS TO USE PLANT-MICROBE INTERACTIONS AS A WAY TO ANALYZE THE MICROBIAL DIVERSITY IN WETLANDS AND TO PROMOTE THE ENRICHMENT AND ISOLATION OF POTENTIALLY ACTIVE MICROORGANISMS IN BIOTECHNOLOGY. MOST OF THE WORK WILL FOCUS ON NITROGEN METABOLISM. TO OBTAIN NEW BACTERIA AND ARCHAEA ISOLATES IS ONE OF THE MAJOR FOCUSES IN MANY OF THE FIELDS OF MICROBIOLOGY (FROM HABITAT RESTORATION TO CLINICAL MICROBIOLOGY). THE EXTENSIVE USE OF MOLECULAR METHODS FOR THE ANALYSIS OF MICROBIAL DIVERSITY IN MANY ENVIRONMENTAL CONDITIONS HAS HIGHLIGHTED THE LACK OF KNOWLEDGE OF MICROBIAL ECOLOGISTS IN MANY FIELDS. DOZENS OF SEQUENCES ARE BEING DESCRIBED AND PUBLISHED EVERY MINUTE THAT HAVE LITTLE SIMILARITIES TO THOSE OBTAINED FROM CULTURED BACTERIA. THIS IDEA POINTS TO THE EXTENDED CONVICTION THAT MANY PROCESSES AND MICROORGANISMS FROM WHICH ACTIVITIES ARE NOT KNOWN ARE STILL TO BE DISCOVERED. THE PREVIOUS STATEMENT IS CERTAINLY PERSUASIVE FROM A SCIENTIFIC	BAÑERAS VIVES	LUIS		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-01-10	01-09-13	MINECO	Spain
CGL2009-09070		BIOTIC AND ABIOTIC CONTROLS OF CHEMICAL UNDERWATER STRATIFICATION IN ACIDIC MINING LAKES OF THE IBERIAN PYRITE BELT	MICROBIAL METACOMMUNITY\SALINE INLAND WATERS\GREATER FLAMINGO\DISPERSAL\GUANOTROPHICATION\SEDIMENT BIOTURBATION	THE DISSOLUTION OF PYRITE AND OTHER SULPHIDES IN FLOODED OPEN-PIT MINES IN THE IBERIAN PYRITE BELT (IPB, SW SPAIN) HAS RESULTED IN THE FORMATION OF VERY ACIDIC LAKES (PH 1.2-3.5) WITH EXTREMELY HIGH CONCENTRATIONS OF SULPHATE AND TOXIC METALS (FE, AL, MN, CU, ZN, CO, NI, CD) AND METALOIDS (AS). MOST OF THESE LAKES ARE MEROMICTIC (I.E., PERENNIALLY STRATIFIED) AND SHOW AN UPPER WATER BODY (MIXOLIMNION) WITH OXYGENIC AND OXIDIZING CONDITIONS, AND A BOTTOM LAYER (MONIMOLIMNION) WHICH IS ANOXIC AND CHIEFLY REDUCED. THE HYDROCHEMICAL STRUCTURE OF THE MONIMOLIMNIA ALLOWS TO DISTINGUISH TWO DIFFERENT STRATIFICATION STYLES. IN THE PIT LAKES OF TYPE I (E.G., SAN TELMO; N#S# CARMEN), THE MONIMOLIMNION IS VERTICALLY HOMOGENEOUS. ON THE OTHER HAND, THE MONIMOLIMNIA OF TYPE II PIT LAKES (E.G., CUEVA DE LA MORA, HERRERIAS, FILON NORTE) SHOW A SINGULAR PATTERN WITH STRONG VERTICAL GRADIENTS OF CHEMICAL COMPOSITION (DISSOLVED METALS AND SULPHATE), TEMPERATURE, PH, REDOX POTENTIAL (EH) AND DISSOLVED GAS CONTENT (CO2). PHYSICO-CHEMICAL GRADIENTS ARE USUALLY LINEAR, ALTHOUGH THEY CAN ALSO DEVELOP ¿STAIRCASES¿ (E.G., CUEVA DE LA MORA) WHICH APPEARS	SANCHEZ ESPAÑA	JAVIER		INSTITUTO GEOLOGICO Y MINERO DE ESPAÑA (IGME)	DPTO. DE INVESTIGACION EN RECURSOS GEOLOGICOS	DPTO. DE INVESTIGACION EN RECURSOS GEOLOGICOS	01-01-10	31-12-12	MINECO	Spain

CGL2009-10408		ISOTOPE NUTRIENT BIOGEOCHEMISTRY APPLIED TO LAKE METABOLISM	ENVIRONMENTAL INFLOWS\ESTUARIES\SALINITY\BENTHOS INVERTEBRATE\INTEGRATED MANAGEMENT	OUR UNDERSTANDING OF INTEGRAL ECOSYSTEM PROCESSES DERIVED FROM THE SUM OF INDIVIDUAL ECOSYSTEM COMPARTMENTS IS CURRENTLY LIMITED BECAUSE OF METHODOLOGICAL, LOGISTIC AND ECONOMIC CONSTRAINTS. MOREOVER, THE INCREASING RECOGNITION THAT ECOSYSTEMS HAVE DIFFUSE BOUNDARIES AND INTERACT WITH OTHER ECOSYSTEMS ACROSS DIFFERENT SPATIAL AND TEMPORAL SCALES COMPLICATES EVEN MORE THE DETERMINATION OF INTERLINKED BIOGEOCHEMICAL AND ECOLOGICAL PROCESSES USING CONVENTIONAL METHODOLOGY. THE USE OF STABLE ISOTOPES (13C, 15N) HAS FRUITFULLY BEEN APPLIED TO QUANTIFY THE RELATIONSHIPS BETWEEN ABIOTIC AND BIOTIC PROCESSES, AND ALLOWS DETERMINING NUTRIENT TRANSFORMATION AND METABOLISM ACROSS DIFFERENT SCALES. DESPITE THEIR INCREASED USE IN STUDIES OF ECOSYSTEM METABOLISM, MAINLY ROUTES OF N THROUGH COUPLED BIOTIC AND ABIOTIC PROCESSES, ANALYSES OF STABLE ISOTOPES HAVE BEEN LESS FREQUENTLY APPLIED IN HIGHLY FLUCTUATING MEDITERRANEAN WETLAND-TYPE LAKES. ANALYSES OF STABLE ISOTOPES HOLD POTENTIAL TO DETERMINE INTEGRAL ROUTES OF NUTRIENT CYCLING, AND MAY HELP OVERCOME THE LIMITATIONS POSED BY SNAPSHOT SAMPLING UNDER CONTRASTING ENVIRONMENTAL SITUATIONS. IN THIS PROPOSAL WE	SANCHEZ CARRILLO	SALVADOR		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	OPTO. ECOLOGIA EVOLUTIVA	MUSEO NACIONAL DE CIENCIAS NATURALES (MNCN)	01-01-10	31-12-13	MINECO	Spain
CGL2009-12910-C03-03		AQUIFER RECHARGE AND DISCHARGE PROCESSES BY MEANS OF NATURAL TRACERS: GROUNDWATER SOURCE AND RELATIONSHIPS WITH FLOW PATTERN IN DISCHARGE AREAS	ENVIRONMENTAL ISOTOPES\HYDROLOGIC CYCLE\MODELING\GEOGRAPHIC FACTORS\CLIMATE CHANGE	TO PERFORM SUSTAINABLE MANAGEMENT OF AQUIFERS AND TO PROVIDE CONFIDENT ANALYSIS OF THEIR EVOLUTION UNDER CLIMATIC CHANGE, A SOUND KNOWLEDGE ABOUT AQUIFER BEHAVIOUR IS REQUIRED. CHEMICAL AND ISOTOPIC ENVIRONMENTAL TRACERS ARE USEFUL TOOLS TO LOCATE AND QUANTIFY GROUNDWATER RECHARGE AND DISCHARGE, AND TO ESTABLISH THE GROUNDWATER FLOW PATTERN. THEY PROVIDE INFORMATION ON PROCESSES, LOCATIONS, TIMES, ETC. WITH INDEPENDENCE OF HYDRODYNAMIC AND NUMERIC TECHNIQUES, AND THEY SERVE TO CALIBRATE THOSE TOOLS AT THE TIME. MASS BALANCES OF ISOTOPIC (RD, 87SR, 14C, 3H, 18O, 2H, 13C) AND NON ISOTOPIC (CL, BR, B, SR) ENVIRONMENTAL TRACERS WILL BE USED TO QUANTIFY GROUNDWATER RECHARGE AND DISCHARGE AND TO ESTABLISH THE GROUNDWATER FLOW PATTERN IN FIVE AQUIFER OF SPAIN AND ARGENTINA. THE RESULTS WILL ALLOW TO CHECK THE CONCEPTUAL MODELS AND TO CALIBRATE THE NUMERICAL MODELS EXISTING IN SEVERAL OF THE AREAS. EMPHASIS WILL BE ADDRESS TO MECHANISM IDENTIFICATION FOR RECHARGE AND DISCHARGE PROCESSES, AS WELL AS TO THE METHODOLOGICAL APPLICATIONS OF IN SITU AND CONTINUOUS RN MEASURING TO IDENTIFY AND QUANTIFY GROUNDWATER DISCHARGE TO RIVERS AND WETLANDS. AS RN IS GROUND GENERATED, MEASURING IT IN RIVERS WATER SAMPLES IS USED SINCE LONG AGO TO IDENTIFY GROUNDWATER DISCHARGE. A RECENT DEVELOPMENT OF RN MEASURING DEVICES TO PERFORM CONTINUOUS AND IN SITU MEASURES IS PROVIDING GOOD KNOWLEDGE ABOUT	MANZANO ARELLANO	MARISOL		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA UNIVERSITARIA DE INGENIERIA TECNICA CIVIL	ESCUELA UNIVERSITARIA DE INGENIERIA TECNICA CIVIL	01-01-10	30-10-13	MINECO	Spain
CGL2009-06951		SENSITIVITY OF ALPINE RIVERS TO GLOBAL CHANGE: PALAEOENVIRONMENTAL RECORDS AND MODELLING OF EXTREME EVENTS	AQUIFER VULNERABILITY\HYDROGEOPHYSICS\ELECTRICAL TOMOGRAPHY	THE PROPOSED FLUVALPS-PLUS PROYECT (SENSITIVITY OF ALPINE RIVERS TO GLOBAL CHANGE: HIGH-RESOLUTION PALAEOENVIRONMENTAL RECORDS AND MODELLING OF EXTREME FLOOD EVENTS) AIMS TO GENERATE PALEOENVIRONMENTAL TIME SERIES FROM A MULTIPROXY APPROACH AND TO CONTRIBUTE TO THE UNDERSTANDING OF THE EFFECT OF GLOBAL CHANGE ON FLUVIAL SYSTEMS AND THEIR RESPONSE. THE STUDIES ARE MAINLY FOCUSED ON THE VALLEY BOTTOM OF THE HASLI VALLEY, WHICH IS THE SEDIMENT SINK OF THE UPPER REACHES OF THE AARE CATCHMENT IN THE WESTERN ALPS AND IS LOCATED CLOSE TO THE CLIMATE DIVIDE BETWEEN COLD POLAR AND NORTH ATLANTIC AIR AND HUMID MEDITERRANEAN AIR MASSES. DUE TO THESE GEOGRAPHIC SETTINGS, THE STUDY AREA IS PARTICULARLY SENSITIVE TO CHANGES IN THE ATMOSPHERIC CIRCULATION AND CLIMATIC EXTREME EVENTS AND, FURTHERMORE, THIS REGION IS KNOWN AS A TRUE HOT SPOT OF HYDROLOGICAL RISK IN THE ALPS. THE PROJECT FOCUSES MAINLY ON THE ANALYSIS OF FLUVIAL SEDIMENTARY ARCHIVES, PALYNOLOGICAL RECORDS, DOCUMENTARY SOURCES AND INSTRUMENTAL DATA USING DIFFERENT TIME SCALES AND RESOLUTIONS TO COVER THE LAST 4000 YEARS. TO OBTAIN HIGH-RESOLUTION PROXIES, GEOCRONOLOGICAL MODELLS WILL BE BASED ON AN EXTENSIVE RANGE OF RADIOCARBON DATING (AMS) AND WILL ALSO CONSIDER OPTICALLY STIMULATED	SCHULTE	LOTHAR		UNIVERSIDAD DE BARCELONA	DPTO. GEOGRAFIA FISICA Y ANALISIS GEOGRAFICO REGIONAL	FACULTAD DE GEOGRAFIA E HISTORIA	01-01-10	31-12-12	MINECO	Spain

CGL2009-12977		MODELING THE ISOTOPE COMPOSITION IN THE HYDROLOGIC CYCLE IN SPAIN AND APPLICATION TO RESEARCH IN HYDROLOGY AND CLIMATE CHANGE	HYDROLOGY\FORECASTING SYSTEMS\RADAR\FLASH FLOODS	THE GLOBAL NETWORK OF ISOTOPES IN PRECIPITATION MANAGED BY THE INTERNACIONAL AGENCY FOR ATOMIC ENERGY (IAEA) AND THE WORLD METOROLOGICAL ORGANISATION (WMO) PROVIDES BASIC INFORMATION FOR RESEARCH IN HYDROGEOLOGY AND WATER RESOURCES SINCE 1961. THIS NETWORK IS OPERATED IN SPAIN BY THE CENTRO DE ESTUDIOS Y EXPERIMENTACION DE OBRAS PUBLICAS (CEDEX) IN COLABORATION WITH THE AGENCIA ESTATAL DE METEOROLOGIA (AEMET). FURTHERMORE, NUMEROUS STUDIES HAVE BEEN PERFORMED IN SPAIN ON ISOTOPE HYDROGEOLOGY (ON RECHARGE EVALUATION, DATING, OR IDENTIFYING THE ORIGIN OF SOLUTES). EVEN WHEN THESE STUDIES ARE LOCAL IN MOST CASES, OR DEAL WITH PARTIAL SPECIFIC COMPONENTS OF THE HYDROLOGIC CYCLE, THEY PROVIDE AN INFORMATION BASE THAT MAY BE USED TO BUILD REGIONAL AND GLOBAL MODELS OF THE HYDROLOGIC CYCLE. THIS PROJECT AIMS AT ANALYSING THIS INFORMATION ABOUT ISOTOPES IN PRECIPITATION, SURFACE AND GROUND WATERS; MAPPING THE VARIABILITY OF THE EXISTING DATA; AND MODELING AND INTERPRETING THE RESULTS IN THE CLIMATE AND HYDROLOGIC FRAMEWORK OF THE DIFFERENT SYSTEMS FOUND IN THE SPANISH GEOGRAPHY. THE OBJETIVES AND WORK TO BE PERFORMED ARE: 1) COMPILATION AND ASSESSMENT OF THE RESULTS OF RESEARCH ON CLIMATE IN SPAIN AS WELL AS THE DATA ABOUT THE ISOTOPIC COMPOSITION OF PRECIPITATION, SURFACE AND GROUND WATERS. THE INFORMATION OBTAINED WILL BE STRUCTURED IN A DATA BASE, INCLUDING GEOGRAPHIC AND CLIMATE INFORMATION. THE DATA BASE WILL INCLUDE ISOTOPIC DATA FROM PRECIPITATION FROM THE IAEA NETWORK IN SPAIN AND	RODRIGUEZ AREVALO	JAVIER		CENTRO ESTUDIOS Y EXPERIMENTACION DE OBRAS PUBLICAS (CEDEX)	CENTRO DE ESTUDIOS DE TECNICAS APLICADAS	CENTRO DE ESTUDIOS DE TECNICAS APLICADAS	01-01-10	31-12-12	MINECO	Spain
CGL2009-08840		NATURAL AND ANTHROPOGENIC TRANSFORMATION OF MARSHES IN THE CANTABRIAN COAST: RESPONSE TO CLIMATE CHANGE	IRRIGATION\FILTRATION\EFFLUENTS\CLOGGING\ARTIFICIAL NEURAL NETWORKS\COMPUTATIONAL FLUIDS DYNAMICS	SALT MARSHES REPRESENT THE MOST EXTREME ECOSYSTEM UNDER MARINE INFLUENCE AS THEY DEVELOP AT THE HIGHEST POSSIBLE TOPOGRAPHIC POSITION UNDER TIDAL INFLUENCE AND ARE LOCATED AT THE CONTACT ZONE BETWEEN THE MARINE AND TERRESTRIAL DOMAINS. AS A CONSEQUENCE, THEY ARE INDICATIVE OF THE MAXIMUM SEA LEVEL AT ANY TIME AND ANY TEMPORAL VARIATION OF THE SEA LEVEL WILL ORIGINATE A VERTICAL AND/OR LATERAL MIGRATION OF THE SALT MARSHES. THIS RESEARCH PROJECT IS INTENDED TO DETERMINE THE RECENT ENVIRONMENTAL EVOLUTION OF THE SALT MARSHES IN THE EASTERN CANTABRIAN COAST AS A CONSEQUENCE OF: A) THEIR FORMATION 3 KA AGO WHEN HOLOCENE SEA LEVEL BECAME STABLE; B) THEIR HUMAN OCCUPATION FOR AGRICULTURAL PURPOSES DURING THE 18TH AND 19TH CENTURIES; C) THEIR ABANDONMENT AND NATURAL REGENERATION DURING THE 20TH CENTURY; AND D) THEIR RESPONSE TO THE SEA-LEVEL OSCILLATIONS DURING THE LAST DECADES AS A CONSEQUENCE OF THE POSSIBLE ONGOING CLIMATE CHANGE. MOREOVER, THIS WORK AIMS TO RECONSTRUCT SEA-LEVEL CHANGES IN THIS COASTAL AREA (IN COOPERATION WITH OTHER RESEARCH ACTIVITIES ON THE BRITISH, FRENCH AND PORTUGUESE ATLANTIC COASTS) OVER THE PAST 500 YEARS. THE RECONSTRUCTIONS WILL BE DEVELOPED FROM ANALYSES	CEARRETA BILBAO	ALEJANDRO		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. ESTRATIGRAFIA Y PALEONTOLOGIA	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-10	31-12-12	MINECO	Spain
CGL2009-12910-C03-01		AQUIFER RECHARGE AND DISCHARGE PROCESSES BY MEANS OF NATURAL TRACERS	RECHARGE\DISCHARGE\GROUNDWATER\GRAN CANARIA\REUSED WATERS\RADON	SUBPROJECT 1 IS AIMED AT ADDITIONAL RESEARCH AND APPLICATION OF DIFFUSE NATURAL RECHARGE BY MEANS OF THE BALANCE OF ATMOSPHERIC CHLORIDE DEPOSITION, BY SELECTING SPECIAL INTEREST AREAS, SUCH AS THE ANOIA AQUIFER (CARBONATED SYSTEM OF CARME¿CAPELLADES¿SANT QUINTI DE MEDIONA), A PORTION OF THE CAMP DE TARRAGONA, THE PLANA DE LA GALERA (LOWER EBRE) AND THE AQUIFER SYSTEM OF SIERRA DE GADOR¿CAMPO DE DALIAS. IT IS ALSO AIMED TO SUPPORT TO THE OTHER TWO SUBPJECTS IN THE APPLICATION TO DOÑANA AND GRAN CANARIA ISLAND. THE SUBPROJECT IS ALSO AIMED TO THE GEOHYDROCHEMICAL AND ENVIRONMENTAL ISOTOPE RESEARCH OF RECHARGE OF ADVANCED TREATED WASTED WATER IN THE DEEP INJECTION WELL BARRIER IN THE LLOBREGAT DELTA, AND THE EVENTUAL CONSIDERATION OF BASIN RECHARGE IN THE LOWER VALLEY. THE OBJECTIVE IS TO DIFFERENTIATE RECHARGED WATER FROM NATURAL WATER BY MEANS OF CHEMICAL, AND POSSIBLE ISOTOPIC INDICATORS, IN COOPERATION WITH THE WATER AGENCY OF CATALONIA (ACA). IT IS INCLUDED SPECIFIC SUPPORT TO THE STUDY OF THE EFFECT ON THE AQUIFERS DERIVED FROM THE EXCESS IRRIGATION TREATED WASTE WATER RECHARGE IN BANDAMA (GRAN CANARIA). ALL THIS IS TO CONTRIBUTE TO THE TRAGUA¿CONSOLIDER PROJECT. THE SUBPROJECTS 1 AND 3 PRINCIPAL RESEARCHER ARE MEMBERS OF THEM. IN THIS RECHARGE NEW HYDROGEOCHEMICAL ASPECTS APPEAR, WHICH ARE AN	CUSTODIO GIMENA	EMILIO		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. DE INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-10	31-10-13	MINECO	Spain

CGL2009-13700-C02-02		MONITORING AND MODELLING SPATIAL AND TEMPORAL VARIABILITY OF SOIL COMPOSITION, WATER CONTENT AND COMPACTION AT DIFFERENT SCALES	HUMAN ACTIVITY\FLUVIAL SYSTEM\SEDIMENTS\SEDIMENT BUDGET\BRAIDED CHANNELS\BARS\CHANNEL\VEGETATION	THE INHERENT SOIL SURFACE AND SUBSOIL SPATIAL AND TEMPORAL VARIABILITY HAS BEEN WIDELY RECOGNIZED. THE TRADITIONAL METHODS FOR CHARACTERISATION OF SPATIAL VARIABILITY AND TEMPORAL TRENDS IN SOIL PROPERTIES AND HYDROLOGICAL PARAMETERS AT THE VADOSE ZONE HAVE SHOWN SEVERAL LIMITATIONS. AT PRESENT THERE IS A STRONG NEED TO DEVELOP AND APPLY NON-INVASIVE AND NOT EXPENSIVE TECHNOLOGIES THAT CAN BE USED TO DELINEATE AND MONITOR SOIL COMPOSITION AND ATTRIBUTES AT BOTH SURFACE AND SUBSURFACE LAYERS, INCLUDING HYDROLOGICAL CHARACTERISTICS. NON-INVASIVELY GEOPHYSICAL TECHNIQUES PRODUCING A THREE-DIMENSIONAL MAP OF SOIL STRUCTURAL FEATURES ARE QUITE ADVANTAGEOUS TO ADVANCING OUR KNOWLEDGE OF SOIL SPATIAL AND TEMPORAL VARIABILITY. GEOPHYSICAL TECHNIQUES INCLUDE ELECTRICAL CONDUCTIVITY (EC) ASSOCIATED TO PENETROMETER, ELECTROMAGNETIC INDUCTION (EMI), GROUND PENETRATING RADAR (GPR), ELECTRICAL RESISTIVITY TOMOGRAPHY (ERT) AND TIME DOMAIN REFLECTOMETRY (TDR). SIGNIFICANT ADVANCES HAVE BEEN ALSO MADE DURING THE LAST YEARS IN APPLICATION OF ADVANCED GEOSTATISTICS TECHNIQUES AND MULTIFRACTAL ANALYSIS FOR CHARACTERIZATION OF ENVIRONMENTAL VARIABLES, INCLUDING SOIL ATTRIBUTES	DAFONTE DAFONTE	JORGE		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. INGENIERIA AGROFORESTAL	ESCUELA POLITECNICA SUPERIOR. LUGO	01-01-10	31-12-12	MINECO	Spain
CGL2009-13700-C02-01		MONITORING AND MODELLING SPATIAL AND TEMPORAL VARIABILITY OF SOIL COMPOSITION, WATER CONTENT AND COMPACTION AT DIFFERENT SCALES	SPATIAL AND TEMPORAL VARIABILITY\GEOESTATISTICS\FRACTALS\MULTIFRACTALES\ELECTRICAL CONDUCTIVITY\PENETROMETER\ELECTROMAGNETIC INDUCTION\GROUND PENETRATING RADAR\ELECTRICAL RESISTIVITY TOMOGRAPHY	THE INHERENT SOIL SURFACE AND SUBSOIL SPATIAL AND TEMPORAL VARIABILITY HAS BEEN WIDELY RECOGNIZED. THE TRADITIONAL METHODS FOR CHARACTERISATION OF SPATIAL VARIABILITY AND TEMPORAL TRENDS IN SOIL PROPERTIES AND HYDROLOGICAL PARAMETERS AT THE VADOSE ZONE HAVE SHOWN SEVERAL LIMITATIONS. AT PRESENT THERE IS A STRONG NEED TO DEVELOP AND APPLY NON-INVASIVE AND NOT EXPENSIVE TECHNOLOGIES THAT CAN BE USED TO DELINEATE AND MONITOR SOIL COMPOSITION AND ATTRIBUTES AT BOTH SURFACE AND SUBSURFACE LAYERS, INCLUDING HYDROLOGICAL CHARACTERISTICS. NON-INVASIVELY GEOPHYSICAL TECHNIQUES PRODUCING A THREE-DIMENSIONAL MAP OF SOIL STRUCTURAL FEATURES ARE QUITE ADVANTAGEOUS TO ADVANCING OUR KNOWLEDGE OF SOIL SPATIAL AND TEMPORAL VARIABILITY. GEOPHYSICAL TECHNIQUES INCLUDE ELECTRICAL CONDUCTIVITY (EC) ASSOCIATED TO PENETROMETER, ELECTROMAGNETIC INDUCTION (EMI), GROUND PENETRATING RADAR (GPR), ELECTRICAL RESISTIVITY TOMOGRAPHY (ERT) AND TIME DOMAIN REFLECTOMETRY (TDR). SIGNIFICANT ADVANCES HAVE BEEN ALSO MADE DURING THE LAST YEARS IN APPLICATION OF ADVANCED GEOSTATISTICS TECHNIQUES AND MULTIFRACTAL ANALYSIS FOR CHARACTERIZATION OF ENVIRONMENTAL VARIABLES, INCLUDING SOIL ATTRIBUTES	PAZ GONZALEZ	ANTONIO		UNIVERSIDADE DA CORUÑA	INSTITUTO UNIVERSITARIO DE GEOLOGIA ISIDRO PARGA PONDAL	INSTITUTO UNIVERSITARIO DE GEOLOGIA ISIDRO PARGA PONDAL	01-01-10	31-12-12	MINECO	Spain
CGL2009-11258		APPLICATION AND VALIDATION OF A NUMERICAL MODEL TO SOLVE ENVIRONMENTAL PROBLEMS WITH GROUND-WATER AND SURFACE-WATER INTERACTIONS	INLANDWATERS\SUSTAINABLE MANAGEMENT\WATER QUALITY\ECOLOGYCAL STATUS\WATER ECONOMY\MULTIDISCIPLINAR INTEGRATION\WATER FRAMEWORK DIRECTIVE\DECISION SUPOORT SYSTEM\OPERATING RULES	THE MOVEMENT AND STORAGE OF WATER IN THE HYDROLOGICAL BASINS, WHERE RIVERS, RESERVOIRS AND OTHER BODIES OF SURFACE AND GROUNDWATER ARE PRESENT, POSE A SERIES OF ENVIRONMENTAL PROBLEMS DIFFICULT TO ASSESS. THE DETERMINATION OF THE VARIABLES OF THE HYDRODYNAMIC FLOW AND WATER QUALITY IS A KEY ELEMENT IN ORDER TO ASSESS THE CONSEQUENCES OF THE SIMULTANEOUS MOVEMENT OF GROUND AND SURFACE WATER, SUCH AS TRANSPORT AND REACTION OF DISSOLVED SUBSTANCES, TO CARRY OUT AN ADEQUATE PLANNING AND USE OF WATER RESOURCES IN A GIVEN REGION. THE OBJECTIVES OF THIS PROJECT ARE ESSENTIALLY TWO: 1) COMPLETE THE DEVELOPMENT OF A NUMERICAL HYDRODYNAMIC MODEL FOR BOTH UNDERGROUND AND SURFACE FLOW WITH REACTIVE SOLUTE TRANSPORT BEING CAPABLE OF ASSESSING THE PHYSICAL AND CHEMICAL VARIABLES RELATED TO WATER AND TAKING INTO ACCOUNT THE DIFFERENT USES AND THE SIMULTANEOUS INTERACTION OF ALL WATER RESOURCES IN A WATERSHED. THIS MODEL WILL BE DIVIDED INTO THREE DIFFERENT MODULES AND WILL BE BASED ON DEVELOPMENTS ALREADY MADE BY THE MEMBERS OF THE PROJECT, WHICH MUST BE REFINED, FINALIZED, TESTED AND INTEGRATED WITH EACH OTHER IN A FRIENDLY INTERFACE, 2) TEST VALIDATE AND VERIFY THE NUMERICAL MODEL WITH REAL DATA, COMPLEX ENOUGH TO ALLOW ITS APPLICATION TO THE RESOLUTION OF MANY PRACTICAL PROBLEMS IN CIVIL AND ENVIRONMENTAL ENGINEERING. IN THIS REGARD IT IS PROPOSED TO EXTEND A PREVIOUSLY CONSIDERED CATCHMENT AREA UNDER STUDY (THE RIVER	PADILLA BENITEZ	FRANCISCO		UNIVERSIDADE DA CORUÑA	DPTO. TECNOLOGIA DE LA CONSTRUCCION	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-10	31-12-12	MINECO	Spain

CGL2009-11114		RISK ASOCIATED TO MANAGED ARTIFICIAL RECHARGE PRACTICES: AN INTEGRATED SOIL-AQUIFER VISION	NUMERICAL MODEL\HYDRODINAMICS\SURFACE-WATER\GROUNDWATER\WATER RESOURCES\REACTIVE TRANSPORT\HYDROCHEMISTRY\EXPERIMENTATION	AN INFILTRATION POND IS ONE OF THE MOST COMMON METHODS OF ARTIFICIAL RECHARGE INTO AQUIFERS. WHILE THIS METHOD TO INCREASE WATER RESOURCES HAS BEEN USED SINCE THE MID-TWENTIETH CENTURY, IN THE LAST FEW YEARS THERE HAS BEEN AN URGE TO FURTHER STUDY THE METHOD LINKED TO THE CONCEPTS OF POLLUTION AND RISK. THE MAIN REASON IS THE GRADUAL DEGRADATION IN THE QUALITY OF RIVER WATER, WHEN IT IS THE SOURCE FOR RECHARGE WATER, OR THE POSSIBILITY OF USING RECLAIMED WASTEWATER AS A SOURCE OF RECHARGE. THE RECHARGED WATER MOVES THROUGH THE UNSATURATED ZONE TO REACH THE WATER TABLE, WHERE IT IS MIXED WITH THE AQUIFER WATER AND THEN MOVES TO THE POINT OF ABSTRACTION. ALONG THIS PATH, A SERIES OF GEOCHEMICAL PROCESSES ALTER ITS COMPOSITION. RARA AVIS AIMS AT PROVIDING AN INTEGRATED VIEW OF THE RISK ASSOCIATED WITH THE PRACTICES IN INFILTRATION PONDS. THIS REQUIRES PROGRESS IN VARIOUS DIRECTIONS IN PARALLEL. FIRST GEOCHEMICAL ASPECTS SHOULD BE ADDRESSED, STUDYING ON ONE HAND THE DEGRADATION OF ORGANIC CONTAMINANTS UNDER DIFFERENT REDOX CONDITIONS AND, ON THE OTHER HAND, SOME OF THE PHENOMENA OF CATION EXCHANGE AND COMPETITION, SINCE THEY CAN IMMOBILIZE OR REMOBILIZE METALS. SECOND, WE STUDY THE MOVEMENT OF WATER AND SOLUTES IN THE SATURATED ZONE,	SANCHEZ VILA	FRANCISCO JAVIER		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. DE INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-10	31-12-12	MINECO	Spain
CGL2009-12877-C02-02		INVASIBILITY OF RIVERS FOR INTRODUCED FISH: GENETIC STRUCTURE OF INTRODUCED POPULATIONS OF GAMBUSIA HOLBROOKI	GLOBAL CHANGE\PALEOCLIMATE\PALEOENVIRONMENTAL MULTI-PROXY RECORDS\NATURAL HAZARDS\HISTORICAL FLOODS\INSTRUMENTAL CLIMATE SERIES\HUMAN IMPACT\GEOMORPHOLOGY\GEOARCHAEOLOGY\ALPS	INVASIVE INTRODUCED SPECIES ARE A HUGE ENVIRONMENTAL ISSUE, PARTICULARLY IN FRESHWATER ECOSYSTEMS, WHERE THEIR ABUNDANCE AND ECOLOGICAL AND ECONOMICAL IMPACTS ARE FORMIDABLE. THE OBJECTIVE OF OUR PROJECT IS TO UNDERSTAND HOW DOES FLUVIAL ZONATION AND HYDROLOGICAL ALTERATION AFFECT THE GENETIC STRUCTURE AND REPRODUCTIVE STRATEGY OF THE INVASIVE MOSQUITOFISH (GAMBUSIA HOLBROOKI) IN THE SPANISH RIVERS. ALTHOUGH THIS SPECIES IS PROBABLY THE FRESHWATER FISH MOST WIDESPREAD WORLDWIDE, STUDIES ALONG THE RIVER ZONATION ARE VERY SCARCE. RIVER SYSTEMS OFFER SPECIAL ENVIRONMENTS FOR THE DISPERSAL AND ADAPTATION OF FISH SPECIES BECAUSE OF THE LINEAR ARRANGEMENT OF SUITABLE HABITATS. WITHOUT SELECTION AND ADAPTATION, GENE FLOW SHOULD BE ONLY RESTRICTED BY GEOGRAPHIC DISTANCE AND PHYSICAL BARRIERS, PARTICULARLY IN THE UPSTREAM DIRECTION BECAUSE OF THE UNIDIRECTIONAL DOWNSTREAM WATER FLOW. GENETIC DIVERSITY SHOULD THEN BE HIGHER IN THE DOWNSTREAM RIVER SEGMENTS. FEMALES (DAM) OF GAMBUSIA MATE WITH MULTIPLE MALES (SIRES) DURING THE COURSE OF A SINGLE ROUND OF REPRODUCTION. THE FREQUENCY OF MULTIPLE PATERNITY IS IMPORTANT FOR HYPOTHESES CONCERNING MALE AND FEMALE FITNESS ADVANTAGES, AND IS POTENTIALLY IMPORTANT ALSO ITS IMPACT ON POPULATION-LEVEL GENE DIVERSITY. GREATER	GARCIA MARIN	JOSE LUIS		UNIVERSITAT DE GIRONA	DPTO. BIOLOGIA	FACULTAD DE CIENCIAS	01-01-10	30-06-13	MINECO	Spain
CGL2009-13168-C03-01		REUSE OF TREATED URBAN WASTEWATERS FOR ENVIRONMENTAL USES: AQUIFER RECHARGE THROUGH PERMEABLE REACTIVE BEDS AND FORESTRY FOR POWER PRODUCTION	RECLAMATION\REUSE\URBAN WASTEWATERS\AQUIFER RECHARGE\GREEN FILTERS\BIO-FUELS	THIS RESEARCH PROJECT CONSIDERS THE REUSE OF TREATED URBAN WASTEWATERS FROM AN ENVIRONMENTAL POINT OF VIEW. THUS, THE PROPOSED STUDY WILL INCLUDE APPROACHES FROM TWO DIFFERENT REUSE TECHNOLOGIES IN THE FRAMEWORK OF THE RD 1620/2007: ON THE ONE HAND, THE WATER REUSE BY AGRICULTURAL TECHNIQUES (FILTROS VERDES AND IRRIGATION OF VEGETABLE SPECIES FOR BIOMASS AND BIO-FUEL PRODUCTION); AND ON THE OTHER HAND, THE WATER REUSE BY THE REGENERATION OF TREATED WATERS THROUGH HORIZONTAL REACTIVE BEDS FOR AQUIFER RECHARGE.¡¡ THE MAIN GOAL OF THE PROJECT IS TO DEVELOP THE APPLICABILITY OF THESE TECHNOLOGIES IN THOSE ENVIRONMENTAL USES FOR SMALL URBAN COMMUNITIES. IN THIS PURPOSE, TWO AIMS ARE IMPLICIT: A) TO REGENERATE OF TREATED URBAN WASTEWATER, BY REDUCING THE MOBILITY AND BIOAVAILABILITY OF NONWISHED SUBSTANCES IN THE TREATED WATER, AND B) TO GET OF AN ADDITIONAL ENVIRONMENTAL BENEFIT, THROUGH THE REUSE IN IRRIGATION OF FOR PRODUCTION OF BIOMASS AND BIO-FUEL. TO GET THE PROPOSED AIMS, THE METHODOLOGY WILL BE MAINLY BASED ON THE STUDY AND MONITORING OF THE SYSTEM (WATER-SOIL-REACTIVE MATERIALS IN THE PERMEABLE REACTIVE BEDS, AND WATER-SOIL-PLANTS IN THE FILTRO VERDE) WHERE THE DEGRADATION (TRANSFORMATION) AND RETENTION (ACCUMULATION) OF NONWHISED SUBSTANCES WILL TAKE PLACE. THE	DE BUSTAMANTE GUTIE	IRENE		UNIVERSIDAD DE ALCALA	DPTO. GEOLOGIA	FACULTAD DE CIENCIAS AMBIENTALES	01-01-10	31-12-12	MINECO	Spain

CGL2009-14220-C02-02		RECENT ENVIRONMENTAL CHANGES IN MEDITERRANEAN FLUVIAL SYSTEMS:MORPHOLOGICAL AND SEDIMENTOLOGICAL CONSEQUENCES	DEGRADATION\SALINIZATION\SOIL\WATER\MODELLING\SALTIRRSOIL\DSS-DECISION SUPPORT SYSTEM	DURING THE LAST DECADES, THE MEDITERRANEAN RIVERS HAVE BEEN AFFECTED BY MANY CHANGES WHICH HAVE MODIFIED WATER DISCHARGE AND SEDIMENT LOAD. THE FACTORS RESPONSIBLE FOR THESE CHANGES ARE: - CLIMATIC AND HYDROLOGIC FLUCTUATIONS, WHICH AFFECT FLOODS AND HYDROLOGICAL REGIME - HUMAN INDIRECT IMPACTS OVER DRAINAGE BASINS, AS LAND USE CHANGES (AGRICULTURE AND URBANIZATION). - DIRECT MODIFICATION TO THE CHANNELS (GRAVEL MINING, DAMS CONSTRUCTION, ETC.). AS A RESULT OF THESE CHANGES, CHANNEL AND FLOODPLAINS INCISION AND DEGRADATION ARE REPORTED. THIS SUBPROJECT WILL TRY TO ANALYZE THE MOST IMPORTANT CHANGES AFFECTING CHANNELS AND DRAINAGE BASINS, IDENTIFYING THE DEGRADATION AND INCISION TRENDS, AS WELL AS TO DETECT THE CONSEQUENCES ON THE COASTAL SYSTEMS. THE SPECIFIC OBJECTIVES OF THIS SUBPROJECT ARE: 1. TO REPORT HUMAN IMPACTS ON DRAINAGE AREAS AND CHANNELS. THE AFFECTED AREA WILL BE MEASURED AND BROAD TYPES OF CHANGES WILL BE CLASSIFIED. 2. DETECTION OF CHANNEL PATTERN CHANGES AND THE FORMATION OF FLOODPLAINS. FROM ORTHOPHOTOS AND AERIAL PHOTOGRAPHS OF DIFFERENT YEARS, CHANGES IN BRAIDED RIVERS PATTERN AND THE DYNAMIC THAT TRANSFORMS THE BARS IN FLOODPLAINS WILL DETECT. 3. IDENTIFICATION OF INCISION / AGGRADATION CHANNELS SECTORS. FROM CARTOGRAPHY AND FIELD SURVEYS, AREAS OF EROSION AND DEPOSITION WILL BE DISCRIMINATE. THIS WILL INCLUDE DETAILED CROSS SECTIONS, USING GPS-RTK TECHNOLOGY. 4. ANALYSIS OF EROSION / DEPOSITION TRENDS AFTER FLOODS. IN SPECIFIC CONTROL AREAS, TERRAIN DIGITAL	SEGURA BELTRAN	FRANCISCA		UNIVERSIDAD DE VALENCIA	DPTO. GEOGRAFIA	FACULTAD DE GEOGRAFIA E HISTORIA	01-01-10	31-12-12	MINECO	Spain
CGL2009-13139		DESIGN OF A FLASH FLOOD EARLY WARNING SYSTEM BASED ON RADAR-RAINFALL ESTIMATION. VALIDATION ON PILOT BASINS IN CATALONIA AND ANDALUCIA	RECLAMATION\REUSE\URBAN WASTEWATERS\AQUIFER RECHARGE\LAND APPLICATION\BIO-FUELS	THE OBJECTIVE OF THIS PROJECT IS THE DESIGN AND DEVELOPMENT OF A FLASH FLOOD EARLY WARNING SYSTEM IN ORDER TO IMPROVE THE FORECAST OF HIGH RISK EVENTS AND ALSO THE PREPAREDNESS AND RISK MANAGEMENT AGAINST HEAVY RAINS AND FLASH FLOODS. SO, THE PROJECT IS FOCUSED ON THE DEVELOPMENT OF A SPECIFIC METHODOLOGY AND A NUMERICAL PROTOTYPE TO BE VALIDATED IN REAL-TIME AT THE EMERGENCY AGENCIES AND HYDROMETEOROLOGICAL COMPANIES IN CHARGE OF FLOOD RISK MANAGEMENT IN THE TEST BASINS. IN THE PROJECT, A SPECIFIC METHODOLOGY WILL BE DEVELOPED IN ORDER TO FORECAST FLASH FLOOD WARNINGS (¿EARLY WARNING SYSTEM¿), WHICH IS DIRECTLY BASED ON RADAR-RAINFALL ESTIMATION AND PROBABILISTIC RAINFALL THRESHOLDS, WHICH DEFINE A SET OF HAZARD LEVELS ASSOCIATED TO A CERTAIN LOCATION. THE RAINFALL INTENSITY IS ESTIMATED BASED ON RADAR DATA WITH A HIGH SPATIAL RESOLUTION (1KM2) AND TEMPORAL RESOLUTION (10 MINUTES) IN ORDER TO ADJUST THE WARNING SPATIAL SCALE TO THE DRAINAGE NETWORK SCALE (1KM2). MOREOVER, A RADAR-RAINFALL NOWCASTING MODULE IS PROPOSED TO INCREASE THE ANTICIPATION OF THE SYSTEM APPROXIMATELY 2 HOURS IN THE FUTURE. THE EARLY WARNING SYSTEM (EWS) WILL BE VALIDATED IN A CATALAN PILOT BASIN (LLOBREGAT RIVER, 5.000 KM2) AND IN A ANDALUSIAN BASIN (GUADALHORCE BASIN, 1.000	SEMPERE TORRES	DANIEL		UNIVERSITAT POLITECNICA DE CATALUNYA	CENTRE DE RECERCA APLICADA EN HIDROMETEOROLOGIA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-10	30-06-13	MINECO	Spain
CGL2009-10577		EFFECTS OF MARINE INFLUENCE ON THE FOREDUNE VEGETATION: STUDY OF THE ECOPHYSIOLOGY AND WATER RESOURCES USING ISOTOPIC ANALYSIS	HYPEREUTROPHY\SHALLOW\LAKE\RESTORATION\CLEAR\WATER\CARBON\CYCLE\TROPHIC\WEBS	THE AIM OF THIS PROJECT IS TO DEVELOP A RESEARCH ON THE USE OF SEA WATER BY THE DUNE VEGETATION OF SPANISH COASTS AND TO ASSESS WHETHER IT IS POSSIBLE TO GENERALIZE A MULTIPLE PATTERN OF WATER USE AS OCCURS IN TROPICAL COASTS. BESIDES THIS PROJECT AIMS TO GET DEEPLY INTO THE OCEANIC WATER ROLE ON KEY SPECIES IN DUNE BUILDING AND THE CONSEQUENCES OF EPISODES OF SEA FLOODS ON INLAND SPECIES. THE SPECIFIC AIMS OF THE PROJECT ARE: 1) TO ASSESS WHETHER THE WATER SOURCE (OCEANIC, RAINFALL, UNDERGROUND, ATMOSPHERIC) USED FOR DIFFERENT PLANT SPECIES AFFECTS THEIR PHYSIOLOGICAL STATUS ON THE BEACH-DUNE SYSTEM, IN THE COASTS OF SOUTHERN SPAIN, 2) TO ASSESS WHETHER SALINITY AND THE PROPORTION OF SEA WATER IN SOIL CHANGES IN SPACE AND TIME, 3) TO ASSESS WHETHER THE WATER SOURCE USED FOR DIFFERENT SPECIES CHANGES OVER THE YEAR (SEASONALLY) AND SPATIALLY (IN RELATION TO SEA DISTANCE), 4) TO ESTABLISH WHETHER IN THE STUDIED COASTAL DUNES EXISTS A SPECIES ZONATION IN RELATION TO SEA DISTANCE AND IF THIS SPATIAL PATTERN DEPENDS ON THE SPECIES WATER SOURCE IN RELATION TO THEIR SPECIFIC LOCATION CLOSE TO THE SEA OR INLAND, 5) TO ASSESS WHETHER THREE KEY SPECIES ON DUNE BUILDING	GALLEGO FERNANDEZ	JUAN BAUTISTA		UNIVERSIDAD DE SEVILLA	DPTO. BIOLOGIA VEGETAL Y ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-10	31-12-12	MINECO	Spain

CGL2009-12877-C02-01		STREAM INVASIBILITY BY INTRODUCED FISH: ECOLOGICAL DETERMINANTS	GAMBUSIA HOLBROOKI\GENE DIVERSITY\POPULATION STRUCTURE\GENE FLOW\FAMILIAR ESTRUCTURE\REPRODUCTIVE STRATEGY\MULTIPATERNITY\ECOLOGICAL DIVERSIFICATION	INVASIVE INTRODUCED SPECIES ARE A HUGE ENVIRONMENTAL ISSUE, PARTICULARLY IN FRESHWATER ECOSYSTEMS, WHERE THEIR ABUNDANCE AND ECOLOGICAL AND ECONOMICAL IMPACTS ARE FORMIDABLE. THE OBJECTIVE OF OUR PROJECT IS TO HELP UNDERSTANDING HOW DOES FLUVIAL ZONATION AND HYDROLOGICAL ALTERATION AFFECT THE INVASIBILITY OF FRESHWATER ECOSYSTEMS BY EXOTIC SPECIES. WE AIM TO QUANTIFY HOW MUCH OF THE INVASIBILITY BY INTRODUCED FISHES IS DUE TO HUMAN-MEDIATED HYDROLOGICAL ALTERATION AND HOW MUCH TO CHEMICAL POLLUTION (PARTIALLING OUT THE NATURAL RIVER VARIATION). BY PREPARING A LARGE DATABASE, WE WILL ANALYSE DATA AVAILABLE ON FISH (ABUNDANCE, SPECIES COMPOSITION, AND SIZE STRUCTURE), PHYSICO-CHEMICAL DATA, WATER FLOWS, AND HABITAT AT 370 RIVER SITES IN CATALONIA, TO BUILT MODELS OF INVASIBILITY. WE WILL ALSO ANALYSE THE ECOLOGY OF AN INVASIVE FISH (GAMBUSIA HOLBROOKI) WITH STRONG ECOLOGICAL IMPACT: WE WILL ANALYSE ITS LIFE CYCLE AND POPULATION STRUCTURE ALONG THE RIVER ZONATION TO UNDERSTAND ITS INVASIVE SUCCESS. ALTHOUGH THIS SPECIES IS PROBABLY THE FRESHWATER FISH MOST WIDESPREAD WORLDWIDE, STUDIES ALONG THE RIVER ZONATION ARE VERY SCARCE. FINALLY, WE WILL BUILD PREDICTIVE DISTRIBUTION MODELS FOR THE MOSQUITOFISH AT THE IBERIAN SCALE. BEYOND ITS	GARCIA BERTHOU	EMILI		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-01-10	31-12-12	MINECO	Spain
CGL2009-09342		MODELING HYDRAULIC PERFORMANCE OF DRIP IRRIGATION SYSTEMS USING RECLAIMED EFFLUENTS BY MEANS OF ARTIFICIAL NEURAL NETWORKS AND COMPUTATIONAL FLUIDS DYNAMICS	REGULATED RIVERS\FLUSHING FLOWS\SEDIMENT TRANSPORT\LASER SCAN\EBRO\SEGRE\CINCA	THE USE OF RECLAIMED EFFLUENTS FOR IRRIGATION ALLOWS TO DESTINE WATERS OF BETTER QUALITY TO OTHER MORE DEMANDING USES. DRIP IRRIGATION PRESENTS AGRICULTURAL, SANITARY AND ENVIRONMENTAL ADVANTAGES. NEVERTHELESS, THE USE OF THESE EFFLUENTS USUALLY CLOGGS THE EMITTERS, WHICH AFFECT THE WATER DISTRIBUTION UNIFORMITY AND HAS ECONOMIC CONSEQUENCES THAT CAN INHIBIT THE GENERALIZATION OF DRIP IRRIGATION WITH RECLAIMED EFFLUENTS. IN PRESSURIZED IRRIGATION NETWORKS, THE FLOW THROUGH THE FILTRATION SYSTEMS IS COMPLEX BECAUSE OF THE GEOMETRY, THAT LIMITS AND LEADS THE FLOW, AND THE EFFLUENT CHARACTERISTICS. THE REDUCED WATER PASSAGE AND THE TORTUOSITY OF THE EMITTER LABYRINTH ALSO ACT LIKE RESTRICTIONS. GIVEN THE COMPLEXITY OF THE SYSTEM, THE CHARACTERIZATION OF THE BEHAVIOR OF THE FILTERS AND EMITTERS BY MEANS OF THE USUAL MATHEMATICAL AND STATISTICAL ANALYSIES HAVE BEEN LITTLE EFFECTIVE. THE OBJECTIVES OF THIS PROJECT ARE, FIRST, TO CHARACTERIZE FILTER AND EMITTER PERFORMANCE BY MEANS OF THE DEVELOPMENT AND VALIDATION OF AN ARTIFICIAL NEURONAL NETWORK AND, SECOND, USING COMPUTER FLUID DYNAMICS TEHCNIQUES TO ANALYZE WATER AND PARTICLE FLOWS IN FILTERS AND EMITTERS	RAMIREZ DE CARTAGEN	FRANCISCO		UNIVERSITAT DE GIRONA	DPTO INGENIERIA QUIMICA AGRARIA Y TECN. AGROALIMENTARIA	ESCUELA POLITECNICA SUPERIOR	01-01-10	31-12-12	MINECO	Spain
CGL2009-13171-C03-03		DYNAMICS OF MERCURY IN THE INTERPHASE EDAFOSPHERE-HYDROSPHERE	WATER RESOURCES\CLIMATE CHANGE\SUSTAINABILITY\HYDROECONOMIC MODELS\CONJUNCTIVE USE	THE SUBPROJECT "DYNAMICS OF MERCURY IN THE INTERPHASE EDAFOSPHERE.HYDROSPHERE" IS A PART OF THE COORDINATED PROJECT "MERCURY IN THE INTERPHASE ATMOSPHERE-HYDROSPHERE-EDAFOSPHERE-VEGETATION. SPATIAL ANALYSIS IN THE AREA OF ALMADEN AND ITS IMPACT ON ECOSYSTEMS AND HEALTH", PRESENTED BY A RESEARCH TEAM THAT IS CONSTITUTED BY THREE GROUPS WHICH ARE WORKING FROM YEARS ABOUT THE ENVIRONMENTAL CONSIDERATIONS OF MERCURY AND REMEDIATION OPTIONS: THE GROUPS DIRECTED BY PROFESSOR PABLO HIGUERAS FROM THE UNIVERSITY OF CASTILLA LA MANCHA (UCLM), PROFESSOR JORGE LOREDO FROM THE UNIVERSITY OF OVIEDO, AND BY DR. ROCIO MILLAN, TITULAR RESEARCHER OF CIEMAT. TO BE EXACT, THE PRESENT SUBPROJECT IS FOCUSSED TO THE ANALYSIS OF THE DYNAMICS OF MERCURY IN THE INTERPHASE EDAFOSPHERE-HYDRODPHERE. THIS WORK INCLUDES THE COMPLETE PHYSICO-CHEMISTRY CHARACTERIZATION OF SURFACE WATERS AND GROUNDWATER OF SUBCATCHMENTS CONSIDERED IN THE AREA OF ALMADEN, AND THE RELATIONS THAT CAN BE ESTABLISHED BETWEEN SURFACE WATERS AND GROUNDWATER. THE STUDY OF RELATIONS THAT CAN BE ESTABLISHED BETWEEN THE MERCURY TRANSPORTED IN SOLUBLE PHASE, THE MERCURY TRANSPORTED IN SUSPENSION PARTICLES ON WATER AND THE MERCURY DEPOSITED AS SEDIMENTS ARE ALSO INCLUDED.	LOREDO PEREZ	JORGE		UNIVERSIDAD DE OVIEDO	DPTO. EXPLOTACION Y PROSPECCION DE MINAS	ESCUELA TECNICA SUPERIOR DE INGENIEROS DE MINAS	01-01-10	31-12-12	MINECO	Spain

CGL2009-12396		NATURAL ATTENUATION PROCESSES OF ACID MINE DRAINAGE AND ITS APPLICATION TO ENVIRONMENTAL MANAGEMENT OF MINE WASTES	RECHARGE\DISCHARGE\AQUIFER\CATALONIA\SIERRA DE GADOR\USED WATER	AN IMPORTANT DEEP MINING ACTIVITY ON METALLIC SULPHIDES ORES, NOW ABANDONED, WAS DEVELOPED IN THE LINARES-LA CAROLINA MINING DISTRICT (JAEN). THE OLD MINING WORKS (SHAFTS, PITS) ARE AT PRESENT FLOODED, AFTER THE FINISHING OF DEWATERING OPERATIONS AND THEY ARE NOW RESPONSIBLE OF THE STORAGE AND TRANSMISSION OF GROUNDWATER. IN SURROUNDING SURFACE AREAS, MINE WASTES DEPOSITED AS WASTE ROCKS AND TAILINGS CONSTITUTE POTENTIAL POLLUTING SOURCES OF HEAVY METALS TOWARDS THE SURFACE WATERS AND FLUVIAL SEDIMENTS. THIS IS A REGION WHERE THE NATURAL QUALITY OF WATERS IS CONTROLLED BY A VERY HIGH GEOCHEMICAL BACKGROUND AND, IN ADDITION, IT IS AFFECTED BY PROCESSES RELATED TO MINING CLOSURE. A SECTOR OF THIS MINING DISTRICT, THE LINARES BATHOLITH, HAS BEEN STUDIED IN A PREVIOUS PROJECT (HID98-0983). IN THIS FORMER PROJECT WAS STATED THE EXISTENCE OF A NEUTRALIZATION PROCESS OF THE ACIDITY RESULTING FROM SULPHUR OXIDATION, GIVING AS A RESULT NET ALKALINE MINE WATERS BUT WITH HIGH CONTENTS IN DISSOLVED METALS. THE STUDY OF THE FACTORS CONTROLLING THESE NATURAL ATTENUATION PROCESSES OF ACID MINE DRAINAGE IS ONE OF THE MAIN OBJECTIVES OF THIS PROJECT. CONTENTS OF HEAVY METALS IN WATERS HIGHER THAN THE LIMITS ESTABLISHED BY THE EUROPEAN REGULATIONS ARE A SUBJECT OF CONCERN IN RECENT EC WATER FRAMEWORK DIRECTIVES. IN THE PROPOSED STUDY AREA, THERE ARE	HIDALGO ESTEVEZ	MARIA DEL CARMEN		UNIVERSIDAD DE JAEN	DPTO. DE GEOLOGIA	ESCUELA POLITECNICA SUPERIOR DE LINARES	01-01-10	31-10-13	MINECO	Spain
CGL2009-07025		CORRELATING HYDROGEOLOGICAL AND GEOPHYSICAL PARAMETERS TO CALIBRATE GROUNDWATER VULNERABILITY ASSESSMENTS FROM GEOPHYSICAL METHODS		GROUNDWATER CAN BE CONSIDERED ARE A STRATEGIC SOURCE OF WATER SUPPLY DUE TO ITS RELATIVELY LOW SUSCEPTIBILITY TO POLLUTION IN COMPARISON TO SURFACE WATER, AND ITS LARGE STORAGE CAPACITY. HOWEVER, THERE ARE SIGNIFICANT SOURCES OF DIFFUSE AND POINT POLLUTION OF GROUNDWATER FROM LAND USE ACTIVITIES, PARTICULARLY INDUSTRIAL AND AGRICULTURAL PRACTICES. THE INFILTRATION OF THESE POLLUTANTS TO GROUNDWATER ALTERS THE WATER QUALITY AND REDUCES ITS VALUE TO THE CONSUMER. GROUNDWATER REMEDIATION IS SLOW AND VERY EXPENSIVE. IN FACT FOR MANY PERSISTENT CONTAMINANTS REMEDIATION MAY NOT BE POSSIBLE AT ALL WITHIN A REASONABLE TIME FRAME. LESS EXPENSIVE POLLUTION PREVENTION STRATEGIES ARE PREFERRED THAT ADVANTAGEOUSLY ANTICIPATE AND PREVENT BEFORE IT OCCURS AND AVOID THE FUTURE NEED FOR COSTLY REMEDIATION EFFORTS. UNTIL NOW, MOST RESEARCHES HAVE BEEN FOCUSED ON GLOBAL EVALUATIONS THAT ALLOW THE POTENTIAL FOR GROUNDWATER POLLUTION ON A REGIONAL SCALE, RATHER THAN ON A SITE SPECIFIC BASIS, BUT NEW DEVELOPMENTS ARE NEEDED IN ORDER TO ACHIEVE A DETAILED ZONATION OF THE HAZARD AS TO ASSIST TERRITORIAL PLANNING AND WATER MANAGEMENT. THE TERM VULNERABILITY IS APPLIED TO REPRESENT A GROUP OF ESSENTIAL CHARACTERISTICS THAT DETERMINE THE DEGREE OF PROTECTION THAT NATURAL ENVIRONMENT PROVIDES TO AQUIFER AFFECTED BY A	CASAS PONSATI	ALBERTO		UNIVERSIDAD DE BARCELONA	DPTO. GEOQUIMICA, PETROLOGIA Y PROSPECCION GEOLOGICA	FACULTAD DE GEOLOGIA	01-01-10	31-12-13	MINECO	Spain
CGL2010-21268-C02-01		QUANTIFICATION OF METAL AND SULPHATE LOAD CONTRIBUTED BY AMD PROCESSES TO RESERVOIRS IN THE IBERIAN PYRITIC BELT. MODELING THE PROCESS	HYDROPHOBICITY\WATER REPELLENCY\FOREST FIRE\MEDITERRANEAN SOIL\EROSION\NIR SPECTROSCOPY	ACID MINE DRAINAGE (A.M.D.) IS A PROCESS THAT TAKES PLACE WHEN A SULPHUROUS MINERAL ENTERS IN TOUCH WITH THE OXYGEN AND THE ATMOSPHERIC MOISTURE PRODUCING OXIDATION OF SULPHURS TO GIVE SULFATES AND GENERATING SUCH A DEGREE OF ACIDITY IN THE WATER THAT THIS ONE DISSOLVES THE PRESENT METALS IN THE PARAGENESIS OF THE PRESENT DEPOSITS. AS RESULT WE FIND IN THE AFFECTED RIVERBEDS VALUE OF PH MEANS OF 2.5, CONCENTRATIONS OF 20.000 PPM OF SULPHATES, AND METALS IN SUCH A PROPORTION THAT THEY PROVOKE THE TOTAL DEGRADATION OF THE WATER AFFECTED SYSTEMS. IN THE FRAME OF STUDY, ONLY THE RIVERS TINTO AND ODIEL TRANSPORTS UP TO RIVER MOUTH IN ONE YEAR OF SLOPE HAPPENS 1800 T OF COPPER, 12000 T OF FE, AS CONSEQUENCE OF THE EXISTENCE IN THE BASIN OF BOTH MORE THAN ONE HUNDRED OF MINING DEVELOPMENTS, IN MOST LEFT, SPREAD IN THE IBERIAN PYRITIC BELT THE PRESENT PROJECT TRIES TO QUANTIFY THE POLLUTANT LOADS TRANSPORTED TO THE PRESENT DAMMING IN THE FLUVIAL NETWORK AFFECTED BY PROCESSES AMD. THE QUANTIFICATION AND MODELLING OF THE PHENOMENON WILL GIVE A REAL VISION OF THE STATE HYDROCHEMICAL OF THE DAMMING AND THE POTENTIAL RISKS FOR THE HEALTH PREPARED TO THE CHEMISTRY OF THE WATERS. AT THE SAME TIME, THE QUANTIFICATION OF	GRANDE GIL	JOSE ANTONIO		UNIVERSIDAD DE HUELVA	DPTO. INGENIERIA MINERA, MECANICA Y ENERGETICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-11	31-12-13	MINECO	Spain

CGL2010-19311		STRATEGIG PLANNING AND MANAGEMENT OF SPANISH-PORTUGUESE SHARED WATER RESOURCES	ACID MINE DRAINAGE\HEAVY METALS\SULPHATES\POLLUTION\RESERVOIRS\IBERIAN PYRITIC BELT.	IT¿S WIDELY ACCEPTED THAT INTEGRATED MANAGEMENT OF WATER RESOURCES CONSTITUTES THE THEORETICAL BASE AND THE POLITICAL FRAME FOR SUSTAINABLE USE AND PRESERVATION OF WATER AND ECOSYSTEMS (CONFERENCE OF WATER, BONN, 2001). ACCORDING TO THE AGREEMENT ON COOPERATION FOR PROTECTION AND SUSTAINABLE UTILIZATION OF WATERS AT THE HYDROGRAPHIC HISPANIC - PORTUGUESE BASINS SIGNED ON NOVEMBER 30, 1998, COMMONLY ALBUFEIRA'S AGREEMENT NAMED (WWW.CADC-ALBUFEIRA.ORG), THE IBERIAN COOPERATION AT THE SCIENTIFIC AND TECHNICAL LEVEL IS NECESSARY TO STRENGTHEN THE COMMUNICATION AND COLLABORATION AROUND THE SHARED MANAGEMENT OF WATERS AND INTERNATIONAL BASINS THAT CONCERN TO BOTH COUNTRIES. THE ABOVE MENTIONED AGREEMENT WAS RAISING A FEW CHALLENGES AND AIMS. THE COMPETENT ADMINISTRATIONS HAVE COME WORKING ABOUT THEM. WE DON¿T KNOW THE WAY THE HUMAN ACTIVITY HAS CONTRIBUTED OR STOPPED ATTAINMENT OF THESE AIMS DURING THE LAST DECADE. FOR ALL THIS THERE APPEARED ALREADY IN THE PAST SUMMONS 2009 THIS PROJECT, WHICH WAS PROVIDED WITH A BRIDGE LOAN OF 29.040 EUROS, CREDIT DESTINED TO IMPROVE THE OFFER REALIZED AT THE TIME OUTLINING BETTER THE AIMS, THE CONCRETE ACTIONS TO DEVELOP AND THE METHODOLOGY TO USING, WHICH WE UNDERSTAND IT HAS MANAGED IN THE PRESENT REQUEST. FOR ALL THIS THERE APPEARED ALREADY IN THE PAST SUMMONS 2009 THIS PROJECT, WHICH WAS PROVIDED WITH A BRIDGE LOAN OF 29.040 EUROS, CREDIT DESTINED TO IMPROVE THE OFFER REALIZED AT THE TIME OUTLINING BETTER THE AIMS, THE CONCRETE ACTIONS TO DEVELOP	MORA ALISEDA	JULIAN		UNIVERSIDAD DE EXTREMADURA	OPTO. DE ARTE Y CIENCIAS DEL TERRITORIO	FACULTAD DE FILOSOFIA Y LETRAS	01-01-11	31-12-13	MINECO	Spain
CGL2010-19274		ADVANCED METHODOLOGIES FOR THE DENDROGEOMORPHOLOGICAL ANALYSIS OF FLASH FLOODS AND ITS RELATED RISKS		FLASH FLOODS ARE ONE OF THE MOST DESTRUCTIVE NATURAL PHENOMENA WHICH MAY CAUSE THE SUDDEN TRANSFORMATION OF LANDSCAPES. TRADITIONALLY, THE TECHNICAL PREVENT ANALYSES WERE PERFORMED USING ONLY HYDROLOGICAL AND HYDRAULIC INFORMATION SOURCES, METHODS AND CRITERIA. HOWEVER, CLASSIC DATA SOURCES AND METHODS HAVE IMPORTANT SHORTCOMINGS REGARDING THE INFORMATION AVAILABLE (I.E., PRECIPITATION AND FLOW DATA) AND DUE TO THE LOW STATISTICAL REPRESENTATIVITY OF TIME SERIES, WHICH NORMALLY LEADS TO UNDER- OR OVER-ESTIMATED RESULTS. THIS HAS LED IN RECENT YEARS TO METHODOLOGICAL RESEARCH INTO THESE METHODS FOCUSED ON DISCOVERING AND CALIBRATING NEW NON-SYSTEMATIC DATA SOURCES, SUCH AS PALAEOFLOODS, INCLUDING DOCUMENTARY RECORDS (HISTORIC FLOODS), GEOLOGICAL¿GEOMORPHOLOGICAL DATA (DEPOSITS AND MARKS) AND BOTANICAL DATA (DENDROGEOMORPHOLOGICAL AND LICHENOMETRIC). DENDROGEOMORPHOLOGY USES INFORMATION SOURCES RECORDED IN THE ROOTS, TRUNKS AND BRANCHES OF TREES AND BUSHES LOCATED IN CERTAIN GEOMORPHOLOGICAL POSITIONS (RIVER BANKS, LONGITUDINAL BARS, FLOOD PLAINS, ETC.), TO COMPLEMENT (OR EVEN REPLACE) SYSTEMATIC AND PALAEOHYDROLOGICAL RECORDS OF FLASH FLOODS WHICH HAVE OCCURRED IN THE STREAM. NEVERTHELESS, PRECISELY THE RESEARCH CARRIED OUT SO FAR HAS SHOWN THAT THE DENDROGEOMORPHOLOGICAL INDICATORS	DIEZ HERRERO	ANDRES		INSTITUTO GEOLOGICO Y MINERO DE ESPAÑA (IGME)	DEPARTAMENTO DE INVESTIGACION Y PROSPECTIVA GEOCIENTIFICA	DEPARTAMENTO DE INVESTIGACION Y PROSPECTIVA GEOCIENTIFICA	01-01-11	31-12-13	MINECO	Spain

CGL2010-15675		TOXICITY BIOASSAYS BASED ON CYANOBACTERIA FOR PRIORITY AND EMERGENT POLLUTANTS IN AQUATIC ENVIRONMENTS		BIOLOGICAL METHODS FOR THE DETECTION OF POLLUTANTS MAY BE CONSIDERED CLEARLY COMPLEMENTARY TO THE USE OF MORE TRADITIONAL PHYSICOCHEMICAL TECHNIQUES. POTENTIAL ADVANTAGES INCLUDE ECONOMY, EASY HANDLING AND THAT, IN GENERAL, NO PRE-TREATMENT OF THE SAMPLES IS REQUIRED ALLOWING A MORE EXTENSIVE MONITORING. BIOASSAYS ARE BEING EXTENSIVELY USED DUE TO THE FACT THAT THEY ARE ABLE TO ASSESS GLOBAL PARAMETERS SUCH AS POLLUTANT BIOAVAILABILITY THAT IS CLOSELY CONNECTED TO TOXICITY. CYANOBACTERIA, UBIQUITOUS PRIMARY PRODUCERS, ARE EMERGING AS GOOD CANDIDATES TO BE USED IN THE FIELD OF ENVIRONMENTAL MONITORING DUE TO THEIR EASY GROWTH AND MAINTENANCE AND TO THEIR ABILITY TO RESPOND TO A GREAT NUMBER OF POLLUTANTS. CYANOBACTERIA, AS PRIMARY PRODUCERS WITH A KEY ROLE IN THE C AND N CYCLES, ARE AT THE BASE OF THE FOOD WEBS AND ANY DETRIMENTAL EFFECT ON THIS GROUP MAY HAVE A NEGATIVE IMPACT IN NUTRIENT AVAILABILITY TO ORGANISMS OF HIGHER TROPHIC LEVELS. CYANOBACTERIAL-BASED BIOASSAYS MAY BE PARTICULARLY USEFUL FOR POLLUTANT DETECTION IN AQUATIC ENVIRONMENTS. BIOLUMINESCENT BIOASSAYS ARE WIDELY USED AS THEY ALLOW A RAPID AND SENSITIVE RESPONSE TO THE ANALYTE OF INTEREST. OUR GROUP HAS THREE STRAINS OF SELF-LUMINESCENT RECOMBINANT CYANOBACTERIA DERIVED FROM THE FILAMENTOUS, NITROGEN- FIXING AND FRESHWATER CYANOBACTERIUM ANABAENA SP. PCC7120. OUR GROUP HAS ALREADY DEVELOPED AND VALIDATED WITH TRADITIONAL TOXICITY BIOASSAYS, AN ECOTOXICITY BIOASSAY WITH ONE OF	FERNANDEZ PIÑAS	FRANCISCA		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. BIOLOGIA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain
CGL2010-22168-C03-01		IMPACT IN AQUIFER MEDIA AND SOILS OF NON-CONVENTIONAL WATER (TREATED-DESALINATED) USE AND SEWAGE SLUDGE APPLICATION : LABORATORY AND FIELD INVESTIGATIONS	TREATED WASTEWATER REUSE	AMONG OTHER NON-CONVENTIONAL WATER RESOURCES, TREATED WASTEWATER (MAINLY FOR AGRICULTURAL USE OR INDIRECTLY USED FOR WATER SUPPLY THROUGH AQUIFER RECHARGE) AND DESALINATED (SEA/BRACKISH; MAINLY FOR WATER SUPPLY) WATER GAINED AN IMPORTANT ROLE IN PLANNING AND DEVELOPMENT OF ADDITIONAL WATER SUPPLIES. DEPENDING OF THE ORIGIN OF WATER, THE TREATMENT PROCESS AND ITS INTENDED USE, ADDITIONAL SPECIFIC PARAMETERS ARE REQUIRED FOR QUALITY CONTROL AND MONITORING. EXPERIENCE SUGGEST THAT USING USE OF THIS TYPE OF WATER COULD AUGMENT QUANTITY AND QUALITY OF EXISTING WATER RESOURCES, BUT KNOWLEDGE GAPS ON LONG TERM CONSEQUENCES OR IMPACTS IN SOIL AND AQUIFERS STILL EXISTS. WHILST MANY PREVIOUS STUDIES HAVE BEEN DEVELOPED FOR THE ASSESSMENT AND IDENTIFICATION OF POLLUTANTS (ORGANIC AND INORGANIC) ASSOCIATED TO WASTEWATER. HOWEVER FEW ATTEMPTS HAVE BEEN MADE IN THE PRECISE KNOWLEDGE OF THE PROCESSES AND BEHAVIOUR IN THE ENVIRONMENT OF CHEMICALS FROM THE REUSE OF THE MAIN PRODUCT (TREATED WATER) AND BY-PRODUCTS (SALTY WATER, HIGHLY ORGANIC MATTER BEARING WATER, SLUDGES) FROM WATER TREATMENT PLANTS (EDAR¿S). IT IS NOTEWORTHY THAT IMPLEMENTATION OF TERTIARY TREATMENTS AT EDAR¿S DURING LAST YEARS CHANGED THE CHEMISTRY OF REUSABLE WATER, SLUDGES AND RESIDUAL WATER.	QUERALT MITJANS	IGNACIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE CIENCIAS DE LA TIERRA JAUME ALMERA (ICTJA)	INSTITUTO DE CIENCIAS DE LA TIERRA JAUME ALMERA (ICTJA)	01-01-11	31-12-13	MINECO	Spain
CGL2010-21188		CLIMATE CHANGE SIMULATIONS FOR IBERIAN RIVER FLOWS		GIVEN THE IMPORTANT IMPLICATIONS OF CLIMATE CHANGE IN THE REGIONAL HYDROLOGICAL CYCLE, THE MAIN AIM OF THIS PROJECT IS TO OBTAIN CLIMATE CHANGE SIMULATIONS FOR IBERIAN RIVER FLOWS BY APPLYING STATISTICAL DOWNSCALING TECHNIQUES. THIS IS PARTICULARLY IMPORTANT FOR THE IBERIAN PENINSULA (I.P.) DUE TO THE REGION¿S SIGNIFICANT INTER-ANNUAL VARIABILITY IN PRECIPITATION AND TEMPERATURE, AS WELL AS THE OVEREXPLOITATION OF WATER RESOURCES AS A CONSEQUENCE OF AN INCREASED DEMAND IN WATER FOR USE IN THE AGRICULTURAL, INDUSTRIAL AND TOURISM SECTORS. THE PRESENT PROPOSAL REPRESENTS THE NATURAL CONTINUATION OF EARLIER FUNDED PROJECTS CARRIED OUT BY THIS GROUP SO FAR, IN WHICH CLIMATIC VARIABILITY AND RIVER FLOW IN THE I.P. HAVE BEEN STUDIED AND CHARACTERIZED. THE STUDY OF THE IMPACT OF CLIMATE CHANGE ON WATER RESOURCES INVOLVES THE USE OF GENERAL CIRCULATION MODELS (GCMS) RESULTS, WHOSE HIGH RESOLUTION CAN BE DECREASED BY MEANS OF STATISTICAL DOWNSCALING. THUS, THE FIRST PART OF THE PROPOSAL CONSIDERS THE APPLICATION OF THESE STATISTICAL DOWNSCALING TECHNIQUES IN ORDER TO DIRECTLY OBTAIN RIVER FLOW VALUES BY USING AS PREDICTOR VARIABLES PRINCIPAL ATMOSPHERIC AND OCEANIC CIRCULATION PATTERNS, IN ORDER TO INCOPORATE LOW-FREQUENCY VARIABILITY (COLLECTED BY THE SST) TO THE MODEL. IN ORDER TO TAKE INTO ACCOUNT THE INFLUENCE OF THERMODYNAMIC	ESTEBAN PARRA	MARIA JESUS		UNIVERSIDAD DE GRANADA	DPTO. FISICA APLICADA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain

CGL2010-20214		RELATIONS BETWEEN BIOGEOCHEMICAL CYCLES AND THE ROLE OF WETLANDS AS GREEN FILTERS: EFFECTS OF EUTROPHICATION, PLANT SPECIES AND THE SEASON OF THE YEAR FOR CARBON SEQUESTRATION.		TITLE: RELATIONS BETWEEN BIOGEOCHEMICAL CYCLES AND THE ROLE OF WETLANDS AS GREEN FILTERS: EFFECTS OF EUTROPHICATION, PLANT SPECIES AND THE SEASON OF THE YEAR FOR CARBON SEQUESTRATION. ACCORDING TO A SPECIFIC CITATION INCLUDED IN THE TEXT OF THE NATIONAL PLAN OF SCIENTIFIC RESEARCH AND TECHNOLOGICAL DEVELOPMENT OF SPAIN, DEVELOPMENT AND SCIENTIFIC INNOVATION 2008-2011, ¿...POLLUTION AND DEGRADATION OF ECOSYSTEMS, DEPLETION OF RESOURCES, LOST OF BIOLOGICAL AND CULTURAL DIVERSITY AND GLOBAL WARMING...", WE PROPOSE A PROJECT IN WHICH THE EFFECT OF EUTROPHICATION WILL BE STUDIED JOINTLY WITH CARBON SEQUESTRATION IN ENVIRONMENTS OF HIGH DIVERSITY SUCH AS SEMIARID MEDITERRANEAN WETLANDS. THE INITIAL HYPOTHESIS, BASED ON THE RESULTS OF PREVIOUS PROJECTS, IS THAT THE PRESENCE OF EUTROPHICATED WATER INFLUENCES BIOGEOCHEMICAL CYCLES AND THEREFORE THE ROLE OF THESE WETLANDS AS GREEN FILTER PERHAPS MAY NOT BE ENTIRELY COMPATIBLE WITH AN EFFECTIVE CARBON SEQUESTRATION THEM, THIS MAY BE INFLUENCED BY VEGETATION TYPE. FOR THIS REASON, THIS PROJECT AIMS TO ANSWER THE FOLLOWING QUESTION: IS THE CAPACITY FOR CARBON SEQUESTRATION OF SEMIARID MEDITERRANEAN WETLANDS AFFECTED BY THE ROLE OF GREEN FILTERS PLAYED BY THESE	ALVAREZ ROGEL	JOSE		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRONOMICA	01-01-11	31-12-13	MINECO	Spain
CGL2010-22168-C03-02		IMPACT IN AQUIFER MEDIA AND SOILS OF NON-CONVENTIONAL WATER (TREATED-DESALINATED) USE AND SEWAGE SLUDGE APPLICATION : LABORATORY AND FIELD INVESTIGATIONS	SEWAGE SLUDGE\POTENTIALLY TOXIC ELEMENTS (PTES)\EMERGING CONTAMINATS\DEGRADATION\MOBILITY\BIOAVAILABILITY\SORPTION	AMONG OTHER NON-CONVENTIONAL WATER RESOURCES, TREATED WASTEWATER (MAINLY FOR AGRICULTURAL USE OR INDIRECTLY USED FOR WATER SUPPLY THROUGH AQUIFER RECHARGE) AND DESALINATED (SEA/BRACKISH; MAINLY FOR WATER SUPPLY) WATER GAINED AN IMPORTANT ROLE IN PLANNING AND DEVELOPMENT OF ADDITIONAL WATER SUPPLIES. DEPENDING OF THE ORIGIN OF WATER, THE TREATMENT PROCESS AND ITS INTENDED USE, ADDITIONAL SPECIFIC PARAMETERS ARE REQUIRED FOR QUALITY CONTROL AND MONITORING. EXPERIENCE SUGGEST THAT USING USE OF THIS TYPE OF WATER COULD AUGMENT QUANTITY AND QUALITY OF EXISTING WATER RESOURCES, BUT KNOWLEDGE GAPS ON LONG TERM CONSEQUENCES OR IMPACTS IN SOIL AND AQUIFERS STILL EXISTS. WHILST MANY PREVIOUS STUDIES HAVE BEEN DEVELOPED FOR THE ASSESSMENT AND IDENTIFICATION OF POLLUTANTS (ORGANIC AND INORGANIC) ASSOCIATED TO WASTEWATER. HOWEVER FEW ATTEMPTS HAVE BEEN MADE IN THE PRECISE KNOWLEDGE OF THE PROCESSES AND BEHAVIOUR IN THE ENVIRONMENT OF CHEMICALS FROM THE REUSE OF THE MAIN PRODUCT (TREATED WATER) AND BY-PRODUCTS (SALTY WATER, HIGHLY ORGANIC MATTER BEARING WATER, SLUDGE) FROM WATER TREATMENT PLANTS (EDAR¿S). IT IS NOTEWORTHY THAT IMPLEMENTATION OF TERTIARY TREATMENTS AT EDAR¿S DURING LAST YEARS CHANGED THE CHEMISTRY OF REUSABLE WATER, SLUDGE AND RESIDUAL WATER. THE PROJECT PROPOSAL AIMS TO INVESTIGATE THE EFFECTS	CANDELA LLEDO	LUCILA		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. DE INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain
CGL2010-22059		A MICROCOSM STUDY OF AS AND CR DETOXIFICATION IN RIVER SEDIMENT BIOFILM AND ITS IMPLICATION FOR BIOREMEDIATION	TREATED WASTEWATER\SLUDGE\ENVIRONMENTAL IMPACT\UNSATURATED ZONE\POROUS MEDIA	BIOFILMS CONSISTING PRIMARILY OF ALGAE, BACTERIA AND FUNGI COMMONLY DEVELOP ON THE SURFACE OF RIVER SEDIMENTS, AND MAY AFFECT THE EXCHANGE OF NUTRIENTS AND POLLUTANTS BETWEEN WATER AND SEDIMENT. THIS PROJECT AIMS TO ASSESS THE EFFECT OF BIOFILM ON THE RETENTION AND TRANSFORMATION OF AS (V) AND CR (VI) IN RIVER ENVIRONMENTS. THE CHOICE OF THESE ELEMENTS IS JUSTIFIED BY THEIR HIGH POTENTIAL TOXICITY AND BY THEIR COMMON STATUS AS ANIONS, WHICH CONTRASTS WITH OTHER TRANSITION ELEMENTS. THE STUDY IS CARRIED OUT AT A MICROCOSM SCALE, THROUGH BIOREACTORS AND PILOT CHANNELS, AND SEEKS TO ANALYZE THE ROLE OF BIOFILM ON THE ADSORPTION, COMPLEXATION, REDOX CHANGES AND METHYLATION OF THESE TRACE ELEMENTS. EXPERIMENTAL CHANNELS WILL BE BUILT AND OPTIMIZED, TO OPERATE INDOOR TRYING TO REPRODUCE THE ENVIRONMENTAL CONDITIONS OF THE BENTHIC ECOSYSTEM. WE WILL COMPARE THE EFFECT OF DIFFERENT TYPES OF BIOFIM (NATIVE AND MONOSPECIFIC) IN THE BIOSORPTION AND TRANSFORMATION OF AS (V) AND CR (VI), USING A VARIETY OF INSTRUMENTAL TECHNIQUES SUCH AS ICP-MS, HPLC, SEM MICROSCOPY, ANALYSIS EXAFS, AND DIFFUSIVE GRADIENT IN THIN FILMS (DGTS). THE FINAL OBJECTIVE OF THIS PROJECT IS TO EXPLORE THE POSSIBILITY OF USING BIOFILMS AS	DIAZ-FIERROS VIQUEIRA	FRANCISCO		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. EDAFOLOGIA Y QUIMICA AGRICOLA	FACULTAD DE BIOLOGIA	01-01-11	31-12-13	MINECO	Spain

CGL2010-21956-C02-01		METAL CYCLING ANT ITS IMPACT ON THE QUALITY OF WATER FROM THE ODIEL BASIN	SULPHIDE WEATHERING\ACID MINE DRAINAGE\METAL POLLUTION\ARSENIC\PASSIVE REMEDIATION\NATURAL ATTENUATION\REACTIVE TRANSPORT	THE ODIEL BASIN CONTAINS MORE THAN ONE HUNDRED ANCIENT SULPHIDE MINES, AND RELEASES TO THE SEA A VERY SIGNIFICANT PERCENTAGE OF THE TOTAL LOAD OF METALS FROM THE CONTINENTS TO THE OCEANS (MORE THAN 10% ZN, FOR INSTANCE). THEREFORE, THE ODIEL BASIN IS A FIRST CLASS NATURAL LABORATORY TO INVESTIGATE THE CYCLING OF METALS. WE PROPOSE HERE TO TREAT PARTICULAR ASPECTS OF THIS CYCLING, MAINLY ORIENTED TO THE WATER MANAGEMENT OF A BASIN WHERE THE PLAN HIDROLOGICO PLANS TO BUILD DAMS FOR IRRIGATION USES. THIS PROJECT FOLLOWS AN ONGOING ONE DEALING WITH WEATHERING OF MINE WASTES AND ACID DRAINAGE PASSIVE TREATMENT. FIRST, WE WILL CONCLUDE A MODEL FOR THE QUANTITATIVE EVALUATION OF THE SULPHIDE WEATHERING AND THE BEHAVIOUR OF AN ALKALINE COVER TO PREVENT THIS PROCESS. SECONDLY, WE WILL QUANTIFY THE MECHANISMS OF NATURAL ATTENUATION OF POLLUTANTS IN THE STREAMS, NAMELY IRON OXIDATION AND PRECIPITATION OF OXYHYDROXIDES, TRANSPORT OF THESE PRECIPITATES DURING FLOODS, AND ACCUMULATION IN TWO EXISTING DAMS, ONE ACIDIC AND THE OTHER NEUTRAL. THIRDLY, WE WILL CONTINUE THE TEST FOR PASSIVE TREATMENT, MAINLY FOCUSED TO DIVALENT METAL REMOVAL. FINALLY, WE WILL COMPLETE A HYDROGEOCHEMICAL MODEL AT BASIN SCALE WHICH WILL	AYORA IBAÑEZ	CARLOS		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. DE GEOCIENCIAS	INSTITUTO DE DIAGNOSTICO AMBIENTAL Y ESTUDIOS DEL AGUA	01-01-11	31-12-13	MINECO	Spain
CGL2010-18374		COMBINED APPROACHES FOR THE STUDY OF THE SEASONALITY OF THE HYDROLOGICAL RESPONSE IN A MEDITERRANEAN ENVIRONMENT IN A GLOBAL CHANGE CONTEXT		MEDITERRANEAN REGIONS ARE CHARACTERIZED BY AN UNEVEN DISTRIBUTION OF WATER RESOURCES BETWEEN THE MOUNTAIN AREAS, WHERE RUNOFF IS GENERATED, AND THE PLAINS AND/OR COASTAL ZONES, WHERE POPULATION AND ECONOMIC ACTIVITIES ARE CONCENTRATED. IN THE CURRENT CONTEXT OF GLOBAL CHANGE, MEDITERRANEAN MOUNTAIN ENVIRONMENTS ARE PARTICULARLY SENSITIVE TO CHANGES IN LAND COVER AND TO THE POTENTIAL EFFECTS OF CLIMATE CHANGE. THESE CHANGES CAN GREATLY AFFECT THE INTENSITY AND FREQUENCY OF THE HYDROLOGICAL RESPONSE OF MEDITERRANEAN BASINS. FOR ALL THESE REASONS THE SEASONALITY OF THE HYDROLOGICAL FUNCTIONING OF MEDITERRANEAN MOUNTAIN BASINS HAS TO BE INVESTIGATED. THE OVERALL OBJECTIVE OF THIS PROJECT IS TO IMPROVE THE UNDERSTANDING AND MODELLING OF HYDROLOGICAL PROCESSES THAT DETERMINE THE SEASONALITY OF THE HYDROLOGICAL RESPONSE IN MEDITERRANEAN ENVIRONMENT, IN ORDER TO PROVIDE USABLE KNOWLEDGE FOR EVALUATING GLOBAL CHANGE IMPACTS ON WATER RESOURCES IN MEDITERRANEAN OPERATIONAL BASINS. THE IMPROVEMENT OF THE KNOWLEDGE AND MODELLING OF THE HYDROLOGICAL FUNCTIONING OF MEDITERRANEAN MOUNTAIN BASINS WILL BE REACHED THROUGH THE COMBINATION OF DIFFERENT COMPLEMENTARY	LATRON	JEROME		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. DE GEOCIENCIAS	INSTITUTO DE DIAGNOSTICO AMBIENTAL Y ESTUDIOS DEL AGUA	01-01-11	31-12-13	MINECO	Spain
CGL2010-22168-C03-03		IMPACT IN AQUIFER MEDIA AND SOILS OF NON-CONVENTIONAL WATER (TREATED-DESALINATED) USE AND SEWAGE SLUDGE APPLICATION. LABORATORY AND FIELD INVESTIGATIONS		AMONG OTHER NON-CONVENTIONAL WATER RESOURCES, TREATED WASTEWATER (MAINLY FOR AGRICULTURAL USE OR INDIRECTLY USED FOR WATER SUPPLY THROUGH AQUIFER RECHARGE) AND DESALINATED (SEA/BRACKISH; MAINLY FOR WATER SUPPLY) WATER GAINED AN IMPORTANT ROLE IN PLANNING AND DEVELOPMENT OF ADDITIONAL WATER SUPPLIES. DEPENDING OF THE ORIGIN OF WATER, THE TREATMENT PROCESS AND ITS INTENDED USE, ADDITIONAL SPECIFIC PARAMETERS ARE REQUIRED FOR QUALITY CONTROL AND MONITORING. EXPERIENCE SUGGEST THAT USING USE OF THIS TYPE OF WATER COULD AUGMENT QUANTITY AND QUALITY OF EXISTING WATER RESOURCES, BUT KNOWLEDGE GAPS ON LONG TERM CONSEQUENCES OR IMPACTS IN SOIL AND AQUIFERS STILL EXISTS. WHILST MANY PREVIOUS STUDIES HAVE BEEN DEVELOPED FOR THE ASSESSMENT AND IDENTIFICATION OF POLLUTANTS (ORGANIC AND INORGANIC) ASSOCIATED TO WASTEWATER. HOWEVER FEW ATTEMPTS HAVE BEEN MADE IN THE PRECISE KNOWLEDGE OF THE PROCESSES AND BEHAVIOUR IN THE ENVIRONMENT OF CHEMICALS FROM THE REUSE OF THE MAIN PRODUCT (TREATED WATER) AND BY-PRODUCTS (SALTY WATER, HIGHLY ORGANIC MATTER BEARING WATER, SLUDGE) FROM WATER TREATMENT PLANTS (EDAR¿S). IT IS NOTEWORTHY THAT IMPLEMENTATION OF TERTIARY TREATMENTS AT EDAR¿S DURING LAST YEARS CHANGED THE CHEMISTRY OF REUSABLE WATER, SLUDGE AND RESIDUAL WATER.	HIDALGO MUÑOZ	MANUELA		UNIVERSITAT DE GIRONA	DPTO. QUIMICA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain

CGL2010-18450		HETEROGENEITY AND REACTIVE TRANSPORT		THE UNDERSTANDING AND QUANTIFICATION OF REACTIVE SOLUTE TRANSPORT IN GROUNDWATER ARE ESSENTIAL IN STUDIES OF NATURAL ATTENUATION PROCESSES, THE DESIGN OF DISPOSAL FACILITIES FOR RADIOACTIVE WASTE, REMEDIATION OF CONTAMINATED SOIL AND GROUNDWATER, AND CARBON DIOXIDE SEQUESTRATION, AMONGST OTHERS. THESE STUDIES MUST TAKE INTO ACCOUNT FLOW OF WATER, SOLUTE TRANSPORT AND CHEMICAL REACTIONS. MOREOVER, THE PHYSICAL AND CHEMICAL PROPERTIES OF THE MEDIUM SHOW SPATIAL HETEROGENEITY AND FLOW SHOW TEMPORAL FLUCTUATIONS. THE CLASSICAL FICKIAN APPROACHES DO NOT QUANTIFY WELL THE HETEROGENEITY AND THE MIXING PROCESSES. THERE EXIST NON-FICKIAN APPROACHES (MRMT, CTRW, AMONGST OTHERS) THAT IMPROVE IN THIS ASPECT, WHICH HAVE BEEN APPLIED WITH SUCCESS TO CONSERVATIVE TRANSPORT. IN THE LAST YEARS, THEY ALSO HAVE BEEN APPLIED TO REACTIVE TRANSPORT, AMONG OTHERS IN THE PROJECT MODEST (CICYT, 2005-2008). THE PROPOSED PROJECT WILL FOLLOW THIS LINE. ITS OBJECTIVES ARE THE IMPROVEMENT OF THE QUANTIFICATION OF HETEROGENEITY AND MIXING, THE USE OF CHEMICALLY MORE COMPLEX SYSTEMS AND THE APPLICATION OF THE DEVELOPED APPROACHES TO MULTIFASE FLOW. THE METHODOLOGY USED CONSISTS OF	SAALTINK	MAARTEN		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. DE INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain
CGL2010-21956-C02-02		METAL CYCLING ANT ITS IMPACT ON THE QUALITY OF WATER FROM THE ODIEL BASIN		THE ODIEL BASIN CONTAINS MORE THAN ONE HUNDRED ANCIENT SULPHIDE MINES, AND RELEASES TO THE SEA A VERY SIGNIFICANT PERCENTAGE OF THE TOTAL LOAD OF METALS FROM THE CONTINENTS TO THE OCEANS (MORE THAN 10% ZN, FOR INSTANCE). THEREFORE, THE ODIEL BASIN IS A FIRST CLASS NATURAL LABORATORY TO INVESTIGATE THE CYCLING OF METALS. WE PROPOSE HERE TO TREAT PARTICULAR ASPECTS OF THIS CYCLING, MAINLY ORIENTED TO THE WATER MANAGEMENT OF A BASIN WHERE THE PLAN HIDROLOGICO PLANS TO BUILD DAMS FOR IRRIGATION USES. THIS PROJECT FOLLOWS AN ONGOING ONE DEALING WITH WEATHERING OF MINE WASTES AND ACID DRAINAGE PASSIVE TREATMENT. FIRST, WE WILL CONCLUDE A MODEL FOR THE QUANTITATIVE EVALUATION OF THE SULPHIDE WEATHERING AND THE BEHAVIOUR OF AN ALKALINE COVER TO PREVENT THIS PROCESS. SECONDLY, WE WILL QUANTIFY THE MECHANISMS OF NATURAL ATTENUATION OF POLLUTANTS IN THE STREAMS, NAMELY IRON OXIDATION AND PRECIPITATION OF OXYHYDROXIDES, TRANSPORT OF THESE PRECIPITATES DURING FLOODS, AND ACCUMULATION IN TWO EXISTING DAMS, ONE ACIDIC AND THE OTHER NEUTRAL. THIRDLY, WE WILL CONTINUE THE TEST FOR PASSIVE TREATMENT, MAINLY FOCUSED TO DIVALENT METAL REMOVAL. FINALLY, WE WILL COMPLETE A HYDROGEOCHEMICAL MODEL AT BASIN SCALE WHICH WILL	NIETO LIÑAN	JOSE MIGUEL		UNIVERSIDAD DE HUELVA	DPTO. GEOLOGIA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-11	31-12-13	MINECO	Spain
CGL2010-21670-C02-01		WATER REPELLENCY IN MEDITERRANEAN FIRE-AFFECTED SOILS. INVOLVED FACTORS , TEMPORAL CHANGES AND IMPLICATIONS FOR HYDROLOGY AND SOIL SYSTEM FUNCTIONING		THE ATTENTION PAID TO SOIL WATER REPELLENCY BY THE SCIENTIFIC COMMUNITY HAS INCREASED CONSIDERABLY DURING RECENT YEARS. THIS INTEREST HAS INCREASED ESPECIALLY IN THE CASE OF FIRE-AFFECTED SOILS IN AREAS WHERE WATER IS CONSIDERED A LIMITING FACTOR FOR PLANTS, AS SEMI-ARID AND SUB-HUMID AREAS. THIS COORDINATED PROJECT CONTINUES ONE OF THE RESEARCH LINES FROM BOTH APPLYING RESEARCH GROUPS IN ORDER TO REACH A DEEP KNOWLEDGE OF SOIL WATER REPELLENCY AND ITS IMPLICATIONS. THE MAIN GOALS OF THIS RESEARCH PROJECT ARE THE STUDY OF THE TEMPORAL EVOLUTION OF SOIL WATER REPELLENCY AS A FUNCTION OF OTHER ENVIRONMENTAL FACTORS IN BURNED AREAS, ITS IMPLICATIONS FOR WATER AVAILABILITY AND SOIL SYSTEM FUNCTIONING, THE HYDROLOGICAL RESPONSE OF SOILS AND RESTORATION OF VEGETATION. ANOTHER OBJECTIVE IS TO STUDY THE ROLE PLAYED BY ASHES IN THE SOIL WATER REPELLENCY AFTER FIRE, HYDROLOGICAL ASPECTS AND VEGETATION. THE PROPOSAL INCLUDES THE STUDY OF TWO FIRE-AFFECTED AREAS FOR THE ANALYSIS UNDER FIELD CONDITIONS AND COMPLEMENTARY LABORATORY EXPERIMENTS AND STUDIES. AS WELL, OUR INTENTION IS TO ADVANCE IN METHODOLOGIES DEVELOPED BY THE GEA GROUP (UMH) FOR DETERMINATION OF FIRE SEVERITY BY NEAR INFRARRED SPECTROSCOPY (NIR), SINCE IT IS A KEY FACTOR FOR CHANGES IN WATER REPELLENCY AND MANY OTHER	MATAIX SOLERA	JORGE		UNIVERSIDAD MIGUEL HERNANDEZ DE ELCHE	DPTO. AGROQUIMICA Y MEDIO AMBIENTE	DPTO. AGROQUIMICA Y MEDIO AMBIENTE	01-01-11	31-12-13	MINECO	Spain

CGL2010-15498		CONCEPTUALIZATION, CHARACTERIZATION AND INTERPRETATION OF THE SPATIOTEMPORAL VARIABILITY OF KARST HYDROGEOLOGY USING INVERSE MODELING		KARSTIC AQUIFERS HAVE A GREAT IMPORTANCE BOTH AS RENEWABLE WATER RESOURCE AND AS A LAND ENVIRONMENT (IN SURFACE AND UNDERGROUND) WHICH DESERVES PROTECTION, BEING HOWEVER A SYSTEM HIGHLY VULNERABLE TO CONTAMINATION. ALTHOUGH IT IS WELL KNOWN THAT THE KARSTIC SYSTEMS ARE SPATIALLY HETEROGENEOUS, MOST OF THE METHODS DEVELOPED FOR CHARACTERIZING THEIR HYDRAULIC BEHAVIOUR ONLY PROVIDE GLOBAL INFORMATION OF THE SYSTEM, PARTICULARLY THOSE METHODS BASED ON THE STUDY OF SPRING HYDROGRAMS. THE SPATIAL CHARACTERIZATION OF KARSTIC AQUIFERS USING MATHEMATICAL MODELS, MAINLY EQUIVALENT POROUS MEDIA MODELS, HAVE PROVIDED GOOD RESULTS OF REGIONAL GROUNDWATER FLOW EVEN IN HIGHLY KARSTIFIED AQUIFERS. HOWEVER THOSE MODELS (EVEN DICRETE MODELS OF FRACTURES AND CONDUITS) HAVE BEEN UNABLE TO PROVIDE RELIABLE INFORMATION OF THE DIRECTION AND RATES OF GROUNDWATER FLOW THROUGH THE KARSTIC AQUIFER. IN FACT, ACCORDING TO MANY KARST RESEARCHERS IT IS QUESTIONALBLE WHETER ANY MODEL CAN RELIABLY SIMULATE THESE PROCESSES BECAUSE THERE IS NEVER ENOUGH SPATIAL EXPERIMENTAL INFORMATION TO ADEQUATELY DESCRIBE THE SPATIAL COMPLEXITY OF THE KARST SYSTEM. THE DIRECT OBSERVATIONS FROM SPELEOLOGY AND DRILL HOLES ARE VERY LIMITED. THE BASIC IDEA TO BE DEVELOPED IN THIS RESEARCH PROJECT IS BASED ON THE GEOSTATISTICAL SIMULATION OF GEOLOGICAL VARIABLES: THE UNKNOWN REALITY IS REPLACED BY THE GEOSTATISTICALLY GENERATED REALIZATIONS OF A RANDOM FIELD. A GEOSTATISTICAL SIMULATION PROVIDES A VERSION OF THE REALITY THAT IS	PARDO IGUZQUIZA	EULOGIO		INSTITUTO GEOLOGICO Y MINERO DE ESPAÑA (IGME)	DEPARTAMENTO DE INVESTIGACION Y PROSPECTIVA GEOCIENTIFICA	DEPARTAMENTO DE INVESTIGACION Y PROSPECTIVA GEOCIENTIFICA	01-01-11	31-12-13	MINECO	Spain
CGL2010-16285		COMBINED EFFECTS OF CLIMATE CHANGE AND OTHER STRESSORS ON STREAM ECOSYSTEM STRUCTURE AND FUNCTION		THE RECENT INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE REPORT PREDICTED LARGE TEMPERATURE INCREASES DURING THE CURRENT CENTURY. THE UNPRECEDENTED COMBINATION OF THIS TEMPERATURE RISE WITH OTHER ALREADY WELL-ESTABLISHED STRESSORS OF ECOSYSTEMS WILL MOST LIKELY LEAD TO THE RESILIENCE OF THESE ECOSYSTEMS BEING EXCEEDED. RESEARCH AND CONSERVATION ATTENTION NEEDS TO FOCUS NOT ONLY ON GLOBAL WARMING AND EACH OF THE OTHER STRESSORS INDIVIDUALLY, BUT ALSO ON THE SYNERGISM OF SEVERAL PRESSURES THAT TOGETHER ARE LIKELY TO BE THE GREATEST CHALLENGE TO BIODIVERSITY CONSERVATION. STREAMS ARE AMONG THE MOST THREATENED ECOSYSTEMS ON EARTH DESPITE THEIR CRITICAL ECOLOGICAL ROLE AND THE ESSENTIAL SERVICES THEY PROVIDE. CURRENT IMPACTS ON STREAM ECOSYSTEMS WILL MOST LIKELY INTERACT WITH CLIMATE WARMING, WITH COMBINED EFFECTS THAT ARE DIFFICULT TO PREDICT, BUT PROBABLY INCLUDING SEVERE CONSEQUENCES ON STREAM BIODIVERSITY, ECOSYSTEM INTEGRITY, AND ECOSYSTEM SERVICES TO HUMANS. WE PREDICT THAT CLIMATE WARMING WILL EXACERBATE THE CURRENT EFFECTS OF STRESSORS SUCH AS NUTRIENT ENRICHMENT AND EXOTIC INVADERS (RIPARIAN VEGETATION, AQUATIC PREDATORS AND PATHOGENS) IN STREAMS AT THE	BOYERO GONZALEZ	M LUZ		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	ESTACION BIOLOGICA DE DOÑANA (EBD)	ESTACION BIOLOGICA DE DOÑANA (EBD)	01-01-11	31-12-13	MINECO	Spain
CGL2010-15892		DEVELOPMENT OF A METHODOLOGY TO USE PROBABILISTIC RAINFALL INPUTS IN FLOOD EARLY WARNING SYSTEMS		LA GESTION HIDROLOGICA EN REGIONES MEDITERRANEAS INCLUYE EL ESTABLECIMIENTO DE SISTEMAS DE ALERTA HIDROLOGICA, ESPECIALMENTE PARA PREDECIR AVENIDAS EN CUENCAS PEQUEÑAS Y MEDIANAS. EN ESTOS SISTEMAS OPERACIONALES, LAS SIMULACIONES REALIZADAS POR LOS MODELOS HIDROLOGICOS ESTAN AFECTADAS POR ERRORES DE INDOLE DIVERSA. EL DESARROLLO DE ENFOQUES PROBABILISTICOS CAPACES DE APORTAR INFORMACION SOBRE LA FIABILIDAD DE LAS SIMULACIONES HIDROLOGICAS BENEFICIARIA DE FORMA CLARA A LOS OPERADORES, LOS CUALES BASAN LA TOMA DE DECISIONES EN LOS HIDROGRAMAS DETERMINISTAS (SIMULADOS POR MODELOS LLUVIA-ESCORRENTIA) EL DESARROLLO DE ESTE ENFOQUE PROBABILISTICO REQUERIRIA DE UNA COMPLETA DESCRIPCION DE LAS DISTINTAS FUENTES DE ERROR QUE AFECTAN LA SIMULACION DE LA TRANSFORMACION LLUVIA-ESCORRENTIA. A PESAR DE QUE ESTE ES UN TEMA EN EL QUE LA COMUNIDAD CIENTIFICA HA CENTRADO SUS ESFUERZOS EN LOS ULTIMOS AÑOS, EL ESTADO ACTUAL DE ESTE TIPO DE METODOLOGIAS, AUN NO PERMITE EL DESARROLLO DE SISTEMAS QUE INCLUYAN UNA COMPLETA DESCRIPCION DE LA INCERTIDUMBRE. LA FINALIDAD DE ESTE PROYECTO ES EL DESAROLLO DE UNA METODOLOGIA PARA EL USO DE PRODUCTOS PROBABILISTICOS DE LLUVIA CON UN MODELO HIDROLOGICO DISTRIBUIDO PARA LA PREVISION PROBABILITICA DE CAUDALES EN SISTEMAS DE ALERTA HIDROLOGICA. A PESAR QUE LAS SIMULACIONES ASI	BERENGUER FERRER	MARC		UNIVERSITAT POLITECNICA DE CATALUNYA	CENTRE DE RECERCA APLICADA EN HIDROMETEOROLOGIA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain

CGL2011-29975-C04-01		NATURAL AND INDUCED ATTENUATION OF GROUNDWATER POLLUTION FROM AGRICULTURAL AND INDUSTRIAL SOURCES.	HYDROGEOLOGY\SALINE WETLANDS\CONTAMINATION\NITRATE \ATTENUATION	GIVEN THE INTENSIVE PRESSURE UPON WATER RESOURCES IN MOST OF THE SPANISH AQUIFERS, INVESTIGATING NATURAL OR INDUCED ATTENUATION FOR AGRICULTURAL AND INDUSTRIAL POLLUTION SOURCES BRINGS A POSSIBILITY TO ENHANCE ENVIRONMENTAL QUALITY AS WELL AS TO RESTORE WATER QUALITY FOR THE BENEFIT OF HUMAN SUPPLY AND ECOLOGICAL PRESERVATION. NEVERTHELESS, THE IDENTIFICATION OF THE ATTENUATION PROCESSES IN FIELD CIRCUMSTANCES INVOLVES A COMPLEX RELATIONSHIP OF ENVIRONMENTAL PARAMETERS AND GEOCHEMICAL CONSIDERATIONS. RESEARCH AT A LABORATORY LEVEL, FIELD-SITE SCALE OR AT REGIONAL SCALE PROVIDE THE NECESSARY SCIENTIFIC BACKGROUND AND PROFESSIONAL EXPERIENCE FOR ADVISING THE FEASIBILITY OF REMEDIATION ACTIONS AND CRITERIA FOR WATER RESOURCES PLANNING AND MANAGEMENT. THIS PROPOSAL IS BASED ON PREVIOUS RESEARCH PROJECTS THAT THE TEAMS FROM THE UNIVERSITAT DE BARCELONA, POLITECNICA DE CATALUNYA, AND GIRONA (INCLUDING MEMBERS FROM THE U. AUTONOMA DE BARCELONA) HAVE COLLECTIVELY CONDUCTED, AS WELL AS ON EARLIER RESEARCH BY THE UNIVERSITY OF CASTILLA LA MANCHA, ALL OF THEM UNDER SPANISH GOVERNMENT FUNDING. PRESENT OBJECTIVES INCLUDE NOT ONLY THE CHARACTERIZATION OF NATURAL ATTENUATION PROCESSES, BUT THE DEVELOPMENT OF EXPERIMENTS OF INDUCED AGRICULTURAL AND INDUSTRIAL POLLUTION AT FIELD SCALE, BASED ON THE RESULTS AND CONCLUSIONS OF THIS PRECEDING RESEARCH. THE RESEARCH TEAM OF THE UNIVERSITY OF BARCELONA WILL FOCUS ITS EFFORTS IN THREE MAIN OBJECTIVES:	SOLER GIL	ALBERT		UNIVERSIDAD DE BARCELONA	OPTO. CRISTALOGRAFIA, MINERALOGIA Y DEPOSITOS MINERALES	FACULTAD DE GEOLOGIA	01-01-12	31-12-14	MINECO	Spain
CGL2011-28776-C02-02		HYDROLOGICAL CHARACTERIZATION OF FOREST STRUCTURES AT PLOT SCALE FOR AN ADAPTIVE MANAGEMENT	FLOODS\PALAEOFLOODS\ALUVIAL DEPOSITS\NATURAL HAZARDS\GLOBAL CHANGE	IN THE MEDITERRANEAN AREAS OF OUR COUNTRY, CLIMATE CHANGE MODELS PREDICT, AMONG OTHER EFFECTS, TEMPERATURE TO ENHANCE AND RAINFALL DEPTH TO DECREASE. IN TURN, THE SOCIOECONOMIC CHANGES OCCURRING IN THESE REGIONS AND A POLICY OF REFORESTATION FOR CONTROLLING EROSION HAVE BROUGHT ABOUT AN INCREASE IN FOREST BIOMASS. FOREST MANAGEMENT HAS NOT GROWN IN PARALLEL WITH THESE BEFORE MENTIONED FACTS, SO NOWADAYS THERE ARE LARGE FORESTED CATCHMENTS AREAS WITH HIGH TREE DENSITY. FOREST MANAGEMENT SHOULD BE A KEY TO THE ADAPTATION OF MEDITERRANEAN VEGETATION TO ANTICIPATED CHANGES, AS WELL AS TO IMPROVE HYDROLOGICAL CONDITIONS "DOWNSTREAM"(QUANTITY AND QUALITY) AND RESILIENCE IN TERMS OF NUTRIENTS (SELF-SUSTAINING ECOSYSTEM). IN THIS PAPER WE INTEND TO STUDY SEVERAL STRUCTURAL TYPES OF MEDITERRANEAN FOREST. THUS, ONCE DEFINED THESE STRUCTURES, WE WILL ANALYZE FOR EACH STRUCTURE: THE HYDROLOGICAL BEHAVIOR (ANSWERING KEY QUESTIONS SUCH AS THE WATER THAT IS LOST TO THE ATMOSPHERE VIA EVAPOTRANSPIRATION BY A PARTICULAR PLANT COMMUNITY), THE RECYCLING OF IMPORTANT NUTRIENTS (N AND P) AND THE EROSION PROCESSES RELATED TO.	DEL CAMPO GARCIA	ANTONIO D.		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-01-12	31-12-14	MINECO	Spain
CGL2011-30151-C02-01		BIOFILM-BIOGEOCHEMICAL HOT-SPOTS IN MEDITERRANEAN RIVERS. MICROBIAL STRUCTURE AND FUNCTIONING AND IMPLICATIONS FOR WATER QUALITY MANAGEMENT	FLUVIAL HOT SPOTS\CARBON\NITROGEN\HYDROLOGY\STORMS\DROUGHTS\MEDITERRANEAN RIVERS\ANTHROPOGENIC INPUTS\WATER QUALITY MANAGEMENT\MICROBIAL BIOFILMS	IN MEDITERRRANEAN INTERMITTENT FLUVIAL ECOSYSTEMS, ORGANIC AND INORGANIC BIOGEOCHEMICAL FLUCTUATIONS ARISE FROM A CONTINUOUS TEMPORAL AND SPATIAL REARRANGEMENT BETWEEN CATCHMENT-SCALE ABRUPT NATURAL AND ANTHROPOGENIC BIOGEOCHEMICAL INPUTS TO THE FINE-SCALE MICROBIAL PROCESSES. TIMING, QUANTITY AND QUALITY OF NATURAL CATCHMENT-SCALE INPUTS ARE RELATED TO THE OCCURRENCE OF HYDROLOGICAL EXTREME EVENTS (STORMS AND DROUGHTS), MEANWHILE THAT OF ANTHROPOGENIC ORIGIN ARE DEPENDING ON WORKING REGIME OF WATER TREATMENT PLANTS (WWTP). HOWEVER, MATTER PROCESSING IS NOT DISTRIBUTED UNIFORMLY THROUGH THE RIVER CONTINUUM. IN FACT, HETEROGENEOUS GEOMORPHOLOGIES (I.E. SHALLOW HYPORHEIC ZONES, LARGE RIPARIAN-STREAM INTERFACES, EXTENDED FLOODPLAINS) INDUCE THE ARRANGEMENT OF HOT-SPOTS, WHICH ARE HABITATS WITH DISPROPORTIONALLY HIGH BIOGEOCHEMICAL REACTION RATES. THESE REACTION RATES ARE MAINLY DRIVEN BY MICROBIAL BIOFILMS, INCLUDING BACTERIA, CYANOBACTERIA, ALGAE FUNGI AND PROTOZOA EMBEDDED IN A POLYMERIC MATRIX. THE AIM OF THIS PROJECT IS TO INVESTIGATE HOW BIOFILMS IN HOT-SPOTS, AND THEIR TEMPORAL AND SPATIAL DYNAMICS AS DRIVEN BY HYDROLOGY, AFFECT THE CARBON AND NITROGEN PROCESSING OF THE FLUVIAL NETWORK. WE WILL FOCUS ON HOW STORM AND DROUGHTS MAY RE-ARRANGE HOT-SPOTS AND THEREBY AFFECT FLUVIAL BIOGEOCHEMISTRY AND ECOSYSTEM FUNCTIONING. SPECIFICALLY IT IS AIMED TO: 1- DETERMINE THE MICROBIAL STRUCTURE AND	ROMANI CORNET	ANNA MARIA		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-01-12	31-12-14	MINECO	Spain

CGL2011-24318		PSEUDOMONAS AND BIOFILMS IN PURE WATER	ECOTOXICOLOGICAL ASSESSMENT\NITRATE AND FLUORIDE\ANIMAL BEHAVIOUR\TAJUÑA AND DURATON RIVERS	THE GENUS PSEUDOMONAS IS PRESENT IN MANY HABITATS AND SOME SPECIES IN THE GENUS ARE POTENTIAL PATHOGENS FOR HUMANS, ANIMALS AND PLANTS. MEMBERS OF THE GENUS EXHIBIT ENORMOUS METABOLIC CAPACITIES WHICH ALLOW THE ESTABLISHMENT OF BACTERIAL CONSORTIA WITH OTHER BACTERIAL GROUPS. THE PRESENCE OF PSEUDOMONAS IN WATER CONDUCTIONS IS WELL KNOWN, BUT ITS CONTRIBUTION IN THE BIOFILM FORMATION IN PURE INDUSTRIAL AND HOSPITAL WATERS IS NOT KNOWN PRECISELY. MAIN OBJECTIVES OF THE PROJECT ARE: 1) DETAILED STUDY OF THE BACTERIAL COMMUNITY DEVELOPED IN THE PURE WATER PIPES BY USING AS A MODEL THE HEMODIALYSIS WATERS OF THE NEW UNIVERSITY HOSPITAL OF SON ESPASES IN PALMA DE MALLORCA. THE SYSTEM WAS FIRST STARTED IN JANUARY 2011. 2) CHANGES IN THE BACTERIAL COMMUNITY ALONG TIME BY USING MOLECULAR MICROBIAL TECHNIQUES; THE NEW MASSIVE PYROSEQUENCING METHODOLOGIES WILL BE APPLIED TO ANALYSE THE METAGENOME OF THE BACTERIAL POPULATIONS INHABITING THE SYSTEM. IT WILL GIVE US A GLOBAL IMAGE OF THE WATER QUALITY. 3) SUCCESSION ASSESSMENT OF THE PSEUDOMONAS POPULATIONS IN THE COLONIZATION AND BIOFILM FORMATION WITH CULTURE DEPENDENT AND INDEPENDENT METHODS. 4) DEVELOPMENT OF ACCURATE AND RAPID IDENTIFICATION METHODS BASED ON THE MASS	GARCIA-VALDES PUKKIT	ELENA		UNIVERSIDAD DE LAS ISLAS BALEARES	DPTO. BIOLOGIA	FACULTAD DE CIENCIAS	01-01-12	31-12-14	MINECO	Spain
CGL2011-28776-C02-01		ECOHYDROLOGICAL DISTRIBUTED MODELLING AT BASIN SCALE FOR FOREST IN SEMIARID CLIMATES		FORESTED MEDITERRANEAN CATCHMENTS ARE CHARACTERIZED BY A COMPLEX HYDROLOGICAL BEHAVIOUR (GALLART ET AL., 2002). THE ALTERNATE DRY AND HUMID CONDITIONS STRONGLY INFLUENCE SOIL MICROBIAL ACTIVITY (AUSTIN ET AL., 2004, REYNOLDS ET AL., 2004, SCHWINNING ET AL., 2004) AND THE INTERACTION BETWEEN VEGETATION AND THE WATER CYCLE, SPECIALLY IN SEMIARID CONDITIONS (PORPORATO AND RODRIGUEZ-ITURBE, 2002; LARCHER, 2003). IN ADDITION, SEVERAL AUTHORS SUGGESTED THAT FOREST LAND COVER RESULTS IN HIGHER WATER LOSSES TO THE ATMOSPHERE THAN GRASSLAND (BOSCH AND HEWLETT, 1982; HIBBERT ET AL., 1982) DUE TO HIGHER RAINFALL INTERCEPTION AND EVAPOTRANSPIRATION (ZHANG ET AL., 2001). THOUGH, THERE IS STILL A HIGH UNCERTAINTY ABOUT THE IMPACT THAT UNMANAGED OR EVEN MANAGED REFORESTATION MAY HAVE ON THE WATER BALANCE (EUROPEAN FOREST INSTITUTE, 2009). TO DESCRIBE AND PREDICT THE IMPACTS DUE TO CHANGES IN FOREST STRUCTURES AND CLIMATE CHANGE ON WATER AVAILABILITY, QUALITY AND ECOSYSTEM WE NEED ROBUST MATHEMATICAL MODELS THAT ALLOW US EXTRAPOLATING FROM THE AVAILABLE MEASUREMENTS, INTO THE FUTURE IN BOTH SPACE AND TIME, WHERE MEASUREMENT ARE NOT AVAILABLE (BEVEN, 2001). THE APPLICATION OF MATHEMATICAL MODELS	FRANCES GARCIA	FELIX		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE INGENIERIA DEL AGUA Y MEDIO AMBIENTE - IIAMA	INSTITUTO DE INGENIERIA DEL AGUA Y MEDIO AMBIENTE - IIAMA	01-01-12	31-12-14	MINECO	Spain
CGL2011-30151-C02-02		BIOFILM-BIOGEOCHEMICAL HOT-SPOTS IN MEDITERRANEAN RIVERS. IMPACT OF EXTREME HYDROLOGICAL EPISODES AND ANTHROPOGENIC PRESSURE.	WATER BALANCES\AQUIFER RECHARGES\CLIMATIC CHANGES\EVAPOTRANSPIRATION\RUN OFF	IN MEDITERRRANEAN INTERMITTENT FLUVIAL ECOSYSTEMS, ORGANIC AND INORGANIC BIOGEOCHEMICAL FLUCTUATIONS ARISE FROM A CONTINUOUS TEMPORAL AND SPATIAL REARRANGEMENT BETWEEN CATCHMENT-SCALE ABRUPT NATURAL AND ANTHROPOGENIC BIOGEOCHEMICAL INPUTS TO THE FINE-SCALE INTERNAL COMPLEX MICROBIAL PROCESSES. TIMING, QUANTITY AND QUALITY (BIOAVAILABILITY OF ORGANIC MATTER) OF NATURAL CATCHMENT-SCALE INPUTS ARE RELATED TO THE OCCURRENCE OF HYDROLOGICAL EXTREME EVENTS (STORMS AND DROUGHTS), MEANWHILE THAT OF ANTHROPOGENIC ORIGIN ARE DEPENDING ON SPATIAL LOCATION AND WORKING REGIME OF URBAN/INDUSTRIAL WATER TREATMENT PLANTS (WWTP). HOWEVER, MATTER PROCESSING IS NOT DISTRIBUTED UNIFORMLY THROUGH THE RIVER CONTINUUM. HETEROGENEOUS GEOMORPHOLOGIES (I.E. SMALL POOLS, SHALLOW HYPORHEIC ZONES, LARGE RIPARIAN-STREAM INTERFACES, WETLANDS OR EXTENDED FLOODPLAINS) INDUCE THE ARRANGEMENT OF HOT-SPOTS HABITATS WITH DISPROPORTIONALLY HIGH BIOGEOCHEMICAL REACTION RATES. THESE REACTION RATES ARE DRIVEN TO A LARGE EXTEND BY MICROBIAL BIOFILMS (BACTERIA, CYANOBACTERIA, ALGAE, FUNGI AND PROTOZOA EMBEDDED IN A POLYMERIC MATRIX). THE AIM OF THIS PROJECT IS TO INVESTIGATE HOW BIOFILMS IN HOT-SPOTS, AND THEIR TEMPORAL AND SPATIAL DYNAMICS AS DRIVEN BY HYDROLOGY, AFFECT THE CARBON (C) AND NITROGEN (N) PROCESSING OF THE FLUVIAL NETWORK. WE WILL FOCUS ON HOW STORM AND DROUGHTS MAY RE-ARRANGE HOT-SPOTS AND THEREBY AFFECT FLUVIAL BIOGEOCHEMISTRY AND ECOSYSTEM	BUTTURINI	ANDREA		UNIVERSIDAD DE BARCELONA	DPTO. ECOLOGIA	FACULTAD DE BIOLOGIA	01-01-12	31-12-14	MINECO	Spain

CGL2011-30531-C02-01		WATER BALANCE AND AQUIFER RECHARGE IN A DRY SEMI-ARID GRADIENT: THE INFLUENCES OF CLIMATE CHANGE AND WOODLANDS ECOHIDROLOGY	CLIMATE CHANGE\GLOBAL CHANGE-TYPE DROUGHTS\STARVATION\PLANT SURVIVAL\WOODY SPECIES\RESPROUTING CAPACITY\CARBON-STARVATION HYPOTHESIS\ALEPPO PINE FOREST\DRY AND SEMIARID ECOSYSTEMS	THE BAHIRA2 SUB-PROJECT IS ORGANIZED INTO TWO WPS, AND WILL ATTEMPT TO ESTIMATE ECOSYSTEM WATER DISTRIBUTION (GREEN AND BLUE WATER) IN DRY AND SEMIARID CONDITIONS. ALSO, HOW THESE FLOWS CAN CHANGE UNDER THE NEW AVERAGE CONDITIONS OF CLIMATE CHANGE IN THREE SCENARIOS: 2011-40, 2041-70, AND 2071-00. THE GENERAL OBJECTIVE IN WP1 IS TO STUDY THE ENVIRONMENTAL FACTORS (RAINFALL, AIR TEMPERATURE, RADIATION, RELATIVE HUMIDITY, SOIL WATER CONTENT), AND VEGETATION STRUCTURE COVER THAT AFFECT WATER BALANCE AND AQUIFER RECHARGE IN MEDITERRANEAN ECOSYSTEMS UNDER A CLIMATIC GRADIENT FROM DRY TO SEMIARID. THE HYPOTHESIS THAT UNDERPINS WP1 ARE: A) VEGETATION STRUCTURE AND COVER INFLUENCE THE DISTRIBUTION AND CONSUMPTION OF WATER, IN THE SAME WAY AS SOIL RESERVES, AS WELL AS INFILTRATION QUANTITY AND AQUIFER RECHARGE. B) TO INCREASE COVER, STRUCTURE OR TO SELECT LESS CONSUMPTIVE SPECIES THAT CAN INFLUENCE THE BALANCES, AND THEREFORE, THE AVAILABILITY OF WATER FOR HUMAN USE (BLUE WATER). TO RESPOND THIS HYPOTHESIS, 3 SPECIFIC OBJECTIVES WILL BE DEVELOPED: 1) MEASURE FLOWS AND WATER RESERVES IN DIFFERENT GAUGED BASINS AND THE PERMEABLE SURFACE OF AQUIFERS, WITH THE AIM OF CALCULATING WATER BALANCES AND TO ESTIMATE POTENTIAL AQUIFER RECHARGE IN A DRY TO SEMI-ARID GRADIENT. 2) STUDY AQUIFER RECHARGE PATTERNS AS A RESPONSE TO	BELLOT ABAD	JUAN F		UNIVERSIDAD DE ALICANTE	UNIVERSIDAD DE ALICANTE	UNIVERSIDAD DE ALICANTE	01-01-12	31-12-14	MINECO	Spain
CGL2011-25401		INFLUENCE OF HEAVY RAIN EVENTS IN THE HEALTH RISK ASSOCIATED TO WATERBORNE INFECTIONS IN THE MEDITERRANEAN CLIMATE	SNOW DYNAMICS\MEDITERRANEAN CATCHMENTS\STOCHASTIC FORECASTING\WATER RESOURCE MANAGEMENT	CLIMATIC CHANGES AND DEMOGRAPHY EVOLUTION ALLOW FORECASTING PROBLEMS OF WATER SCARCITY AND AN INCREASE IN HEAVY RAIN EVENTS IN THE MEDITERRANEAN REGION. ONE OF THE PREDICTABLE CONSEQUENCES OF THESE FACTS IS AN INCREASE OF FECAL-ORAL WATERBORNE DISEASE OUTBREAKS. THESE RAINFALL EVENTS, NOT CAUSING FLOODS, ARE THE MAIN CAUSE OF FAILURE OF PROTECTIVE MEASURES TO WATER QUALITY IN MEDITERRANEAN INDUSTRIALIZED COUNTRIES, BECAUSE OF THE DISSEMINATION OF PATHOGENS OR THE INCREASE OF DIFFICULTIES IN DISINFECTION. ADVANCES IN MONITORING AND DEVELOPMENT OF PREDICTION MODELS ARE NECESSARY TO ENHANCE EARLY-WARNING AND PREVENTION CAPABILITIES, AND TO MITIGATE THE IMPACT OF SUCH CLIMATE CHANGES ON THE INCREASE OF THESE OUTBREAKS. THOUGH INCREASED AMOUNTS OF WATERBORNE PATHOGENS AND MICROBIAL INDICATORS HAD BEEN REPORTED AFTER HEAVY RAINS IN GROUND AND SURFACE WATERS IN THIS AREA, THERE ARE NOT EITHER SUITABLE RECORDS AND RELIABLE DATA ON PATHOGEN AND INDICATOR SURVIVAL IN SEWER AND RIVER SEDIMENTS, NOR CLEARLY IDENTIFIED FACTORS AFFECTING THEIR RESUSPENSION AND DISSEMINATION DUE TO HEAVY RAINFALL EVENTS. IN THESE CASES, THE TRADITIONAL FECAL INDICATORS (FECAL COLIFORMS OR E. COLI) DO NOT REFLECT THE FECAL LOAD OF WATER DUE TO THEIR DIFFERENT PERSISTANCES, AND DO NOT DISTINGUISH HUMAN FROM FECAL POLLUTION. THERE IS A NEED TO ADVANCE IN MONITORING AND DEVELOPING PREDICTING MODELS, TO MITIGATE THE INCREASE OF THESE OUTBREAKS ON INFECTIOUS DISEASES LINKED TO HEAVY RAIN EVENTS. BETTER INDICATORS AND IDENTIFICATION OF DIFFERENTIAL	BLANCH GISBERT	ANICET RAMON		UNIVERSIDAD DE BARCELONA	DPTO. MICROBIOLOGIA	FACULTAD DE BIOLOGIA	01-01-12	31-12-14	MINECO	Spain
CGL2011-29975-C04-04		NATURAL AND INDUCED ATTENUATION OF GROUNDWATER POLLUTION FROM AGRICULTURAL AND INDUSTRIAL SOURCES.	FLUVIAL HOT-SPOTS\BIOFILM STRUCTURE\BIOFILM FUNCTIONING\STORMS\DROUGHTS\ORGANIC AND INORGANIC MATTER QUALITY\MEDITERRANEAN RIVERS\ANTHROPOGENIC INPUTS\WATER QUALITY MANAGEMENT	GIVEN THE INTENSIVE PRESSURE UPON WATER RESOURCES IN MOST OF THE SPANISH AQUIFERS, INVESTIGATING NATURAL OR INDUCED ATTENUATION FOR AGRICULTURAL AND INDUSTRIAL POLLUTION SOURCES BRINGS A POSSIBILITY TO ENHANCE ENVIRONMENTAL QUALITY AS WELL AS TO RESTORE WATER QUALITY FOR THE BENEFIT OF HUMAN SUPPLY AND ECOLOGICAL PRESERVATION. NEVERTHELESS, THE IDENTIFICATION OF THE ATTENUATION PROCESSES IN FIELD CIRCUMSTANCES INVOLVES A COMPLEX RELATIONSHIP OF ENVIRONMENTAL PARAMETERS AND GEOCHEMICAL CONSIDERATIONS. RESEARCH AT A LABORATORY LEVEL, FIELD-SITE SCALE OR REGIONAL SCALE PROVIDE THE SCIENTIFIC BACKGROUND AND PROFESSIONAL EXPERIENCE FOR ADVISING THE FEASIBILITY OF REMEDIATION ACTIONS AND CRITERIA FOR WATER RESOURCES PLANNING AND MANAGEMENT. THIS PROPOSAL IS BASED ON PREVIOUS RESEARCH PROJECTS THAT THE TEAMS FROM THE UNIVERSITAT DE BARCELONA, POLITECNICA DE CATALUNYA, AND GIRONA (INCLUDING MEMBERS FROM THE U. AUTONOMA DE BARCELONA) HAVE COLLECTIVELY CONDUCTED, AS WELL AS ON EARLIER RESEARCH BY THE UNIVERSITY OF CASTILLA - LA MANCHA, ALL OF THEM UNDER SPANISH GOVERNMENT FUNDING. PRESENT OBJECTIVES THAT COVER FROM THE CHARACTERIZATION OF NATURAL ATTENUATION PROCESSES TO THE DEVELOPMENT OF INDUCED ATTENUATION EXPERIMENTS AT FIELD SCALE FOR AGRICULTURAL AND INDUSTRIAL POLLUTION ARISE FROM THE RESULTS AND CONCLUSIONS OF THIS PRECEDING RESEARCH. IN PARTICULAR, THE SUBPROJECT SUBMITTED BY THE UNIVERSITAT DE GIRONA (UDG) TEAM, INCLUDING	MAS PLA	JOSEP		UNIVERSITAT DE GIRONA	DPTO. CIENCIAS AMBIENTALES	FACULTAD DE CIENCIAS	01-01-12	31-12-14	MINECO	Spain

CGL2011-22868		PHYSICALLY-BASED MODELING FOR CHARACTERIZATION OF EXTREME HYDROLOGIC RESPONSE UNDER A PROBABILISTIC APPROACH. APPLICATION TO DAM SAFETY ANALYSIS AND OPTIMIZATION OF RESERVOIR OPERATION DURING FLOODS	ORGANIC EMERGING POLLUTANTS\VEGETABLES\RECLAIMED WASTEWATER\BIOCHAR\NANPARTICLES\BIOAVAILABILITY	THE MODEX PROPOSAL CONSISTS ON THE USE OF MULTIVARIATE STOCHASTIC RAINFALL GENERATION MODELS IN CONJUNCTION WITH PHYSICALLY BASED DISTRIBUTED HYDROLOGICAL MODELS TO OBTAIN ARBITRARILY LONG SERIES OF BASIN RESPONSE HYDROGRAPHS IN ORDER TO CHARACTERIZE THEIR EXTREME BEHAVIOR. THE METHODOLOGY IS BASED ON NUMERICAL EXPERIMENTATION. A SET OF PILOT BASINS WHERE DATA AVAILABILITY ALLOWS FOR PROPER PROBABILISTIC CALIBRATION OF MODELS WILL BE SELECTED. A MONTE CARLO PROBABILISTIC SIMULATION ENVIRONMENT WILL BE BUILT INTEGRATING THE HYDROMETEOROLOGICAL MODELING CHAIN. A HIGH-PERFORMANCE COMPUTING PLATFORM WILL BE USED TO PROVIDE DISCHARGE TIME SERIES THAT CAN BE USED IN THE CHARACTERIZATION OF HYDROGRAPHS FOR HIGH RETURN PERIODS IN RELATION TO TWO APPLICATION CASES: HYDROLOGICAL DAM SAFETY ASSESSMENT AND IDENTIFICATION OF OPTIMAL STRATEGIES FOR DAM OPERATION DURING FLOODS. USING A PROBABILISTIC FRAMEWORK WILL YIELD SIGNIFICANT ADVANCES BY ACCOUNTING FOR UNCERTAINTIES IN THE PRECIPITATION FIELD AND IN PROCESSES GOVERNING THE RAINFALL-RUNOFF TRANSFORMATION. THE SCIENTIFIC RESULTS OF THE PROJECT WILL BE APPLIED TO IDENTIFY METHODOLOGIES FOR ANALYZING HYDROLOGICAL DAM	GARROTE DE MARCOS	LUIS		UNIVERSIDAD POLITECNICA DE MADRID	OPTO. INGENIERIA CIVIL: HIDRAULICA Y ENERGETICA	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-12	31-12-14	MINECO	Spain
CGL2011-27349		PROCESSES DETERMINING THE FATE OF EMERGING CONTAMINANTS IN SOILS AND AQUIFERS AFFECTED BY WASTEWATER AND SLUDGE REUSE	HYDROLOGY\SNOW\CLIMATE CHANGE\PYRENEES.	WE PROPOSE AN INTEGRATIVE STUDY OF THE PROCESSES DETERMINING THE FINAL FATE OF EMERGING CONTAMINANTS IN THE VADOSE AND SATURATED ZONES FROM THE ALLUVIAL AQUIFER OF GUADALETE RIVER (UH05.55). THESE COMPOUNDS ARE AFFECTING THE AQUIFER AS A CONSEQUENCE OF THE REUSE OF WASTEWATER AND SLUDGE FROM THE SEWAGE TREATMENT PLANT (STP) AT JEREZ DE LA FRONTERA (SW SPAIN) IN CROPS. FIELD AND LABORATORY EXPERIMENTS WILL BE CARRIED OUT FOR CHARACTERIZING THE MAIN PROCESSES INVOLVED IN THE TRANSPORT OF CONTAMINANTS THROUGH THE VADOSE ZONE, THEIR DISTRIBUTION AMONG DIFFERENT PHASES, AND THEIR REACTIVITY AND PERSISTENCE. FIELD EXPERIMENTS WILL BE PERFORMED IN AN EXPERIMENTAL PARCEL GIVEN BY THE CITY OF JEREZ DE LA FRONTERA. THIS PARCEL IS ADJACENT TO THE STP, AND HERE WE WILL SIMULATE IRRIGATION USING ITS EFFLUENT AS WELL AS WE WILL ADD SLUDGE TO THE SOIL. THE VADOSE ZONE IS RELATIVELY THIN IN THIS AREA, WHICH WILL ALLOW US TO FULLY DESCRIBE THE BEHAVIOR OF THE CONTAMINANTS FROM THEIR INCORPORATION INTO SOILS TO THEIR TRANSPORT AND POSSIBLE PRESENCE IN THE AQUIFER. PHYSICOCHEMICAL AND HYDRAULIC SYSTEM PROPERTIES WILL BE ALSO CHARACTERIZED. LABORATORY ASSAYS WILL SIMULATE BY SEPARATE THE MAIN PROCESSES INVOLVED IN THE TRANSPORT (SORPTION AND PERCOLATION), BIOACCUMULATION IN ORGANISMS, AND ELIMINATION (PHOTODEGRADATION, BIODEGRADATION) OF EMERGING CONTAMINANTS. THEREFORE, WE WILL BE ABLE OF EVALUATE, UNDER CONTROLLED CONDITIONS, THE INFLUENCE OF: I) THE PHYSICOCHEMICAL PROPERTIES OF EVERY COMPOUND (WHICH ARE DERIVED FROM ITS	GONZALEZ MAZO	EDUARDO		UNIVERSIDAD DE CADIZ	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	01-01-12	31-12-14	MINECO	Spain
CGL2011-27536		SNOW HYDROLOGY IN THE CENTRAL SPANISH PYRENEES: SPATIAL VARIABILITY, HYDROLOGICAL IMPORTANCE AND RESPONSE TO CLIMATE VARIABILITY AND CHANGE.	DATABASE\QUALITY CONTROL\HOMOGENEITY\TEMEPERATURE\PRECIPITATION\EVAPORATION\WIND\RELATIVE HUMIDITY	THE PROJECT WILL ANALYZE THE PROCESSES THAT EXPLAIN THE VARIABILITY OF SNOWPACK (EXTENT, DEPTH AND PHYSICAL PROPERTIES) AND ITS EVOLUTION UNTIL THE THAWING PERIOD. THOSE PROCESSES WILL BE RELATED WITH CLIMATIC CONDITIONS AND TERRAIN CHARACTERISTICS (TOPOGRAPHY, VEGETAL COVER AND WIND BLOWING). USING STATISTICAL APPROACHES AND PHYSICALLY BASED MODELS, SNOWPACK AND ITS HYDROLOGICAL RESPONSE WILL BE SIMULATED UNDER OBSERVED CONDITIONS AND DIFFERENT SCENARIOS OF ENVIRONMENTAL CHANGE (CLIMATE AND VEGETATION COVER). IT WILL ENABLE TO ASSESS THE MOST LIKELY CHANGES IN MOUNTAIN HYDROLOGY FOR THE NEXT DECADES, AND TO DETECT THE AREAS AND ENVIRONMENTS MOST SENSITIVE TO UNDERGONE CHANGE IN SNOWPACK. THE PROJECT WILL COMBINE THE ACQUISITION OF SNOW DATA FROM FIELD WORK CAMPAIGNS, MONITORING OF CLIMATIC AND SNOW RELATED VARIABLES, STATISTICAL ANALYSIS AND SIMULATIONS OF THE PHYSICAL PROCESSES INVOLVED IN THE DISTRIBUTION AND METAMORPHISM OF SNOWPACK. SNOW DISTRIBUTION WILL BE MEASURED WITH A LONG RANGE TERRESTRIAL LASER SCANNER (TLS), AND A NEWLY AVAILABLE SONIC SENSOR WILL BE USED FOR SAMPLING SNOW DENSITY. BOTH TECHNIQUES RESULTS INNOVATIVE IN THIS RESEARCH FIELD AND WILL PROVIDE AN AMOUNT OF DATA WITHOUT PRECEDENTS IN SCIENTIFIC LITERATURE. IN ADDITION TO THE SCIENTIFIC INTEREST OF	LOPEZ MORENO	JUAN IGNACIO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	INSTITUTO PIRENAICO DE ECOLOGIA (IPE)	01-01-12	31-12-14	MINECO	Spain

CGL2011-26958		RISK CRITERIA TO BE USED ON THE DESIGN OF INLET COLLECTING SYSTEMS IN CASE OF URBAN FLOODS	EMERGING POLLUTANTS\SURFACE WATERS\GROUNDWATERS\VADOSE ZONE\AQUIFER\SOILS\PERCOLATION\SORPTION\DEGRADATION	DURING A RAIN EVENT, IT IS GENERATED IN SURFACE A GREAT QUANTITY OF RUNOFF THAT SHOULD BE INTRODUCED IN THE UNDERGROUND NETWORK OF COLLECTORS TO LET FREE THE SURFACE OF THE CITY OF THESE VOLUMES OF WATER. FOR IT, WE USE THE COLLECTING SYSTEM, SET OF INLETS AND EXISTING DRAIN-HOLES IN THE SURFACE OF THE CITY. THE COST OF THE SYSTEM IS MINOR THAN THAT OF THE COLLECTORS, BUT THE CONSEQUENCES OF A BAD FUNCTIONING, TRANSLATE IN FLOODS IN SURFACE WHICH COST GOES OFF, THOUGH THEY ARE FEW DECIMETERS OF WATER LEVELS. CHECKING THE STATE OF THE ART OF THE PROBLEM, A CLEAR CRITERION IS ABSENT TO EXPLAIN THE CURRENT DISTRIBUTION OF INLETS, THE COLLECTING SYSTEM OF ANYONE OF OUR CITIES. IT LOOKS LIKE THAT DOES NOT IMPORT WHICH IS THE SLOPE OF THE STREET, WE HAVE THE SAME NUMBER OF INLETS FOR A STREET OF 10 % OF SLOPE THAT FOR ONE OF 0.1 % OF SLOPE, BETWEEN2 AND 4 INLETS FOR STREET, BUT YOU AGREE UPON IN ALL THE CASES. AND MOREOVER THE CASE CAN GIVE HIM(YOU,THEM), THAT IN A ZONE OF THE CITY THE COLLECTORS' SYSTEM IS PREPARED TO LEAD THE WHOLE RUN-OFF PRODUCED BY A RAIN OF 10 YEARS OF RETURN PERIOD, BUT WE CONTINUE HAVING FLOODS IN SURFACE BECAUSE THE RUN-OFF DOES NOT HAVE SUFFICIENT SUMIEROS TO REACH THE NETWORK(NET). IN THIS RESEARCH PROJECT, WE PROPOSE TO WORK IN THE FOLLOWING LINES TO CONTINUE WITH THE PROCESS OF HYDRAULIC	GOMEZ VALENTIN	MANUEL		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA HIDRAULICA, MARITIMA Y AMBIENTAL	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-12	31-12-14	MINECO	Spain
CGL2011-24844		ASSESSMENT OF THE UPTAKE OF ORGANIC EMERGING POLLUTANTS FROM RECLAIMED IRRIGATION WATER TO VEGETABLES. BIOCHAR AND NANOPARTICLE EFFECT ON THEIR BIOAVAILABILITY		ALTHOUGH IN SPAIN RECLAIMED WATER IS ALREADY BEING USED IN THE COMING YEARS, IT IS EXPECTED A SUBSTANTIAL INCREASE IN ITS APPLICATION FOR VARIOUS USES, INCLUDING AGRICULTURE. WHILE THE MICROBIOLOGICAL QUALITY OF RECLAIMED WATER FROM A SANITARY POINT OF VIEW IS WELL ESTABLISHED REGARDING THE TYPE OF CROP (RD 1620/2007), THE IMPACT OF PHYSICAL-CHEMICAL, EXCEPT BASIC PARAMETERS (EG. TURBIDITY, ELECTRICAL CONDUCTIVITY) AND SOME DANGEROUS CONTAMINANTS LISTED IN THE WATER FRAMEWORK DIRECTIVE, ARE POORLY REGULATED. IN THIS PROJECT, THE INCORPORATION OF EMERGING ORGANIC CONTAMINANTS COMMONLY FOUND IN THE RECLAIMED WATER (ANTIBIOTICS, ANALGESICS, HORMONES, BIOCIDES, FRAGRANCES, ENDOCRINE DISRUPTORS, ANTICONVULSANT, STIMULATING AGENTS) IN PLANT MATERIAL WILL BE ASSESSED SINCE FOOD IS ONE OF THE MAJOR HUMAN EXPOSURE TO NOXIOUS SUBSTANCES. THE STUDY OF INCORPORATION WILL BE PERFORMED IN CULTIVARS UNDER CONTROLLED CONDITIONS IN THREE COMMERCIALLY IMPORTANT VEGETABLE SPECIES (OF ROOT, LEAVES AND FRUIT) USING AN AGRICULTURAL SOIL AND THE PRESENCE OF BIOCHARS OR NANOPARTICLES (FULLERENES ANDSILVER NANOPARTICLES). THE MOBILITY OF CONTAMINANTS IN	BAYONA TERMENS	JOSEP MARIA BAYONA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. QUIMICA AMBIENTAL	INSTITUTO DE DIAGNOSTICO AMBIENTAL Y ESTUDIOS DEL AGUA	01-01-12	31-12-14	MINECO	Spain
CGL2011-29975-C04-03		NATURAL AND INDUCED ATTENUATION OF GROUNDWATER POLLUTION FROM AGRICULTURAL AND INDUSTRIAL SOURCES.	HYDROGEOLOGY\POLLUTION\NITRATE\ATTENUATION	GIVEN THE INTENSIVE PRESSURE UPON WATER RESOURCES IN MOST OF THE SPANISH AQUIFERS, INVESTIGATING NATURAL OR INDUCED ATTENUATION FOR AGRICULTURAL AND INDUSTRIAL POLLUTION SOURCES BRINGS A POSSIBILITY TO ENHANCE ENVIRONMENTAL QUALITY AS WELL AS TO RESTORE WATER QUALITY FOR THE BENEFIT OF HUMAN SUPPLY AND ECOLOGICAL PRESERVATION. NEVERTHELESS, THE IDENTIFICATION OF THE ATTENUATION PROCESSES IN FIELD CIRCUMSTANCES INVOLVES A COMPLEX RELATIONSHIP OF ENVIRONMENTAL PARAMETERS AND GEOCHEMICAL CONSIDERATIONS. RESEARCH AT A LABORATORY LEVEL, FIELD-SITE SCALE OR AT REGIONAL SCALE PROVIDE THE NECESSARY SCIENTIFIC BACKGROUND AND PROFESSIONAL EXPERIENCE FOR ADVISING THE FEASIBILITY OF REMEDIATION ACTIONS AND CRITERIA FOR WATER RESOURCES PLANNING AND MANAGEMENT. THIS PROPOSAL IS BASED ON PREVIOUS RESEARCH PROJECTS THAT THE TEAMS FROM THE UNIVERSITAT DE BARCELONA, POLITECNICA DE CATALUNYA, AND GIRONA (INCLUDING MEMBERS FROM THE U. AUTONOMA DE BARCELONA) HAVE COLLECTIVELY CONDUCTED, AS WELL AS ON EARLIER RESEARCH BY THE UNIVERSITY OF CASTILLA - LA MANCHA, ALL OF THEM UNDER SPANISH GOVERNMENT FUNDING. PRESENT OBJECTIVES INCLUDE NOT ONLY THE CHARACTERIZATION OF NATURAL ATTENUATION PROCESSES, BUT ALSO THE DEVELOPMENT OF EXPERIMENTS OF INDUCED ATTENUATION OF AGRICULTURAL AND INDUSTRIAL POLLUTION AT FIELD SCALE, BASED ON THE RESULTS AND CONCLUSIONS OF THIS PRECEDING RESEARCH.	MARTI GREGORIO	VICENÇ		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERÍA QUÍMICA-CEPIMA	ESCUELA TECNICA SUPERIOR DE INGENIERIA INDUSTRIAL DE BARCELONA	01-01-12	31-12-14	MINECO	Spain

CGL2011-27574-C02-01		HYDROLOGICAL IMPACTS OF GLOBAL WARMING IN SPAIN	GLOBAL WARMING\TEMPERATURE TRENDS\WATER RESOURCES\RIVER DISCHARGES\REFERENCE EVAPOTRANSPIRATION\ACTUAL EVAPOTRANSPIRATION\GLOBAL CHANGE IMPACTS	THE ANALYSES OF HYDROLOGICAL EFFECTS OF CLIMATE CHANGE AT REGIONAL SCALE NEEDS A DETAILED SPATIAL AND TEMPORAL INFORMATION. IN SPAIN THE METEOROLOGICAL AGENCY IN TIME HAS RECORDED AND STORED MILLIONS OF RECORDS NOT FULLY AND PROPERLY AT PRESENT ANALYSED. THUS, THE SUBPROJECT HIDROCAES-1 SUGGEST TO PRODUCE AN EXHAUSTICE ANALYSES AND QUALITY CONTROL IN VARIABLES THAT AFFECT WATER CYCLE TO ANALYZE THE HYDROLOGICAL IMPACTS OF GLOBAL CHANGE IN SPAIN. THE MAIN TASK AND OBJECTIVE THAT WE PROPOSE ARE AS FOLLOWS: 1.- UPTODATED THE MONTHLY PRECIPITATION DATABASE OF SPAIN MOPREDAS DEVELIOPED IN A PREVIOUS PROJECT. THE UPDATING WILL BE TO 2010 AND ALSO IT WILL BE EXTENDED BACK TO 1911 BY DIGITALIZATION OF ANNUAL BOOKS. 2.- CREATE THE FUTURE MONTHLY TEMPERATURE DATABASE OF SPAIN MOTEDAS (1945-2010) FROM DIGITALIZED DATA OF AEMET. 3.- APPLY A QUALITY CONTROL AND CREATE DATABASES OF EVAPORATION, RELATIVE HUMIDITY AND WIND FROM AEMET DIGITALIZED ARCHIVES DATASET. 4.- CREATE A HIGH RESOLUTION GRID FOR MOPREDA 1911-2010. 5.- CREATE A HIGHRESOLUTION GRID FRO MOTEDA 1945-2010. 6.- ANALYZE THE SPATIAL AND TEMPROAL VARIABILITY OF PRECIPITATION (1911-2010) AND TEMPERATURES (1945-2010).	GONZALEZ HIDALGO	JOSE CARLOS		UNIVERSIDAD DE ZARAGOZA	DPTO. GEOGRAFIA Y ORDENACION DEL TERRITORIO	FACULTAD DE FILOSOFIA Y LETRAS	01-01-12	31-12-14	MINECO	Spain
CGL2011-29176		IMPACT OF CLIMATE AND ENVIROMENTAL VARIABILITY ON PALAEO-FLOOD HYDROLOGY AND ON FLOOD RISKS IN THE MEDITERRANEAN ZONE	NITRATE\DNAPLS\METALS\DENITRIFICATION\ATTENUATION	THE ASSESSMENT OF THE RESPONSE OF HYDROCLIMATIC EXTREMES TO ANTHROPOGENIC GLOBAL CHANGE IS ONE OF THE MAIN FUTURE UNCERTAINTIES (IPCC 2007 REPORT), WHOSE UNDERSTANDING IS CRUCIAL DUE TO ITS SOCIAL (E.G. VULNERABILITY) AND POLITICAL (RESILIENCE AND ADAPTATION) IMPLICATIONS.). LONG-TERM CHANGES OF RARE EVENTS ARE DIFFICULT TO ASSESS DUE TO SHORT GAUGE RECORDS AND THEIR LIMITED SPATIAL DISTRIBUTION. THESE INSTRUMENTAL RECORDS CAN BE LENGTHENED BY HUNDREDS TO THOUSANDS OF YEARS BY RECONSTRUCTING DISCHARGES OF PAST FLOODS USING PALAEOFLOOD EVIDENCE AND/OR WRITTEN DESCRIPTIONS OF FLOODS USING HISTORICAL, ARCHIVAL DOCUMENTS. THE AIM OF THIS PROJECT IS TO DEVELOP A METHODOLOGICAL APPROACH FOR A LONG-TERM ESTIMATION OF RUNOFF AND SEDIMENT PRODUCTION ASSOCIATED TO FLOODING. THIS METHODOLOGY COMBINES A MULTI-DATA FROM PALAEOFLOOD HYDROLOGY, GEOMORPHOLOGY AND DOCUMENTARY SOURCES (THEMATIC AND TOPOGRAPHIC MAPS, TECHNICAL REPORTS, WRITTEN RECORDS, POPULATION AND LAND USE CENSUS), TO BE IMPLEMENTED IN A SIMPLIFY RAINFALL-RUNOFF AND SEDIMENT PRODUCTION MODELS (TETIS AND SWAT). THE MODELLING RESULTS WILL PROVIDE A LONG-TERM WATER AND SEDIMENT PRODUCTION FLUXES ASSOCIATED TO FLOODING	BENITO FERRANDEZ	GERARDO		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. DE GEOLOGIA	MUSEO NACIONAL DE CIENCIAS NATURALES (MNCN)	01-01-12	31-12-14	MINECO	Spain
CGL2011-23984		EFFECTS OF TEMPERATURE ON THE FUNCTIONING OF HEADWATER STREAMS IN NORTHERN SPAIN	PSEUDOMONAS\HEMODIALYSIS WATER\IDENTIFICATION\MICROBIAL ECOLOGY\PYROSEQUENCING	THE INCREASE IN EARTH'S TEMPERATURE IN THE LAST DECADES HAS MADE TO PROLIFERATE STUDIES WITHIN THE SCOPE OF CLIMATE CHANGE. WE WILL BE ABLE TO DISCERN CHANGES IN ECOSYSTEM PROCESSES CAUSED BY CLIMATE CHANGE FROM THOSE OF NATURAL VARIABILITY IF WE HAVE A PROFOUND KNOWLEDGE ON THE EFFECTS OF TEMPERATURE IN SUCH PROCESSES. THE FACT THAT THERE IS A NATIONAL ACTION ON ADAPTATION TO THE CLIMATE CHANGE IS ENOUGH TO UNDERSTAND THAT IT IS VERY IMPORTANT TO KNOW PROFOUNDLY THE RESPONSES OF ECOSYSTEMS TO THE INCREASE OF TEMPERATURE ON EARTH. THE EFFECTS OF CLIMATE CHANGE ON ECOSYSTEMS, THE HEADWATER STREAMS INCLUDED, THE TARGET OF OUR INTEREST, ARE STILL POORLY KNOWN, IN PARTICULAR WHEN TEMPERATURE INTERACTS WITH OTHER FACTORS LOCALLY. IN THIS CONTEXT, ONE OF THE PROCESSES AROUSING GREATER INTEREST IS LEAF LITTER DECOMPOSITION, BY ITS REPERCUSSION ON THE GLOBAL CARBON CYCLE, AS WARMING CAN ENHANCE DECOMPOSITION RATES. FEW STUDIES, HOWEVER, HAVE TRIED TO ELUCIDATE WHETHER THE RESPONSE OF THIS PROCESS IN DIFFERENT MATERIALS AND IN STREAMS DRAINING DIFFERENT GEOLOGIC SUBSTRATES, WITH POTENTIALLY DIFFERENT BIOTIC COMMUNITIES, WITHIN A GIVEN REGION, IS SIMILAR OR	POZO MARTINEZ	JESUS		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. BIOLOGIA VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-12	31-12-14	MINECO	Spain

CGL2012-34020		CHARACTERIZATION OF THE BIODIVERSITY OF THE EXTREME ENVIRONMENT OF RIO TINTO AND ITS APPLICATIONS	PLATEAU LAKES\BIOLOGICAL COMMUNITIES\METAPOPULATIONS AND METACOMMUNITIES\DISPERSION\VECTORS\FUNCTIONAL PATTERNS\NUTRIENT CYCLING\ECOLOGICAL MODELLING\MANAGEMENT FOR CONSERVATION.	THE PROPOSED PROJECT IS THE CONTINUATION OF THE SYSTEMATIC AND GLOBAL CHARACTERIZATION OF THE EXTREME ACIDIC ECOSYSTEM OF RIO TINTO TO GENERATE AN OPERATIVE MODEL OF A UNIQUE ENVIRONMENT, IN WHICH NOT ONLY THE BIOLOGICAL DIVERSITY IS CONSIDERED BUT ITS FUNCTIONAL RELATIONSHIP WITH THE MINERAL SUBSTRATES AND PRODUCTS, TOGETHER WITH THE EXPLORATION OF THE BIOTECHNOLOGICAL POTENTIAL OF THE COMPONENTS OF THE SYSTEM. THANKS TO THE WORK DEVELOPED UNDER PREVIOUS RESEARCH GRANTS RIO TINTO HAS WIN AN INTERNATIONAL SCIENTIFIC RECOGNITION. THIS PROJECT IS THE CONTINUATION OF CGL2009-11059 GRANT, AND PROPOSES THE EXTENSION OF SOME OF THE OBJECTIVES THAT DUE AND THEIR DIMENSION AND THE INTEREST OF THE OBTAINED RESULTS MAKE IT ADVISABLE, TOGETHER WITH THE INTRODUCTION OF NEW ONES CONSEQUENCE OF THE EXPERIENCE ACCUMULATED DURING ITS DEVELOPMENT. THE PROJECT IS MULTIDISCIPLINARY AND COMPRISES THE FOLLOWING OBJECTIVES: I) HYDROLOGICAL AND GEOCHEMICAL CHARACTERIZATION OF SELECTED SAMPLING STATIONS IN THEIR DIFFERENT PHASE (WATER COLUMN AND SEDIMENTS) ALONG THE RIVER AND IN THE SUBSURFACE OF THE IBERIAN PYRITE BELT (IPB); II) CHARACTERIZATION OF THE MICROBIAL DIVERSITY ASSOCIATED TO THE RIVER	AMILS PIBERNAT	RICARDO		UNIVERSIDAD AUTONOMA DE MADRID	CENTRO DE BIOLOGIA MOLECULAR SEVERO OCHOA (CBM)	CENTRO DE BIOLOGIA MOLECULAR SEVERO OCHOA (CBM)	01-01-13	31-12-15	MINECO	Spain
CGL2012-37041		BIOCHEMICAL RECALCITRANCE OF BIOCHARS PRODUCED FROM TREATED SEWAGE SLUDGE AND ITS VALORIZATION AS SLOW RELEASE N AND P FERTILIZER	REMEDIATION\IN SITU TREATMENT\AQUIFER\MIXING\DELIVERY\CLOGGING\REACTIVE TRANSPORT\FLOW FLUCTUATIONS	THE INCREASING AMOUNT OF ORGANIC WASTE AND THE REQUIREMENT TO REDUCE LANDFILLS URGES THE DEVELOPMENT OF ALTERNATIVES FOR ORGANIC WASTE MANAGEMENT. WITH OUR PROJECT, WE ANSWER TO THIS NEED BY CONTRIBUTING TO A BETTER UNDERSTANDING OF THE PROPERTIES OF N- AND P-RICH BIOCHARS DERIVED FROM SEWAGE SLUDGE AND THEIR POTENTIAL AS SLOW-RELEASE N/P-FERTILIZER. IN AN INTERNATIONAL COLLABORATION WE ADDRESS TECHNOLOGIES FOR RECYCLING P, N AND C FROM WASTEWATERS TO OBTAIN AN INCOME-CREATING PRODUCT WHICH CAN CONTRIBUTE TO A REDUCTION OF THE NEED OF COST-INTENSIVE AND ENVIRONMENTALLY CHALLENGING MINERAL FERTILIZERS. HOWEVER, ALTHOUGH THE APPLICATION OF BIOCHARS AS SOIL AMENDMENTS IS HIGHLY PROMOTED, THE KNOWLEDGE ABOUT THEIR FATE IN SOIL, THEIR CONTRIBUTION TO A LONG-TERM C-SEQUESTRATION OR THEIR IMPACT ON LONG-TERM SOIL HEALTH AND PROPERTIES ARE STILL SCARCE AND EVEN CONTRADICTING. THEREFORE, ASIDE FROM IMPROVING WASTEWATER MANAGEMENT TECHNOLOGIES AND BIOCHAR PRODUCTION PROCESSES, THE EMPHASIS OF OUR PROJECT LIES IN A BETTER UNDERSTANDING OF THE BIOCHEMISTRY INVOLVED IN THE DEGRADATION OR AGING OF N- AND P-RICH BIOCHARS IN SOILS. RESULTS OF PREVIOUS EXPERIMENTS EVIDENCED THAT DURING THERMAL TREATMENT OF PLANT RESIDUES, THEIR ORGANIC N BECOMES AS AN INTEGRATED	KNICKER	HEIKE		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	DPTO. GEOECOLOGIA, BIOGEOQUIMICA Y MICROBIOLOGIA AMBIENTAL	INSTITUTO DE RECURSOS NATURALES Y AGROBIOLOGIA (IRNASE)	01-01-13	31-12-15	MINECO	Spain
CGL2012-34383		MONITORING CHANGES IN WATER AND CARBON FLUXES FROM REMOTE AND PROXIMAL SENSING IN A MEDITERRANEAN DEHESA ECOSYSTEM	ESSENTIAL CLIMATIC VARIABLES\CARBON FLUXES\REMOTE SENSING\CHANGE DETECTION	AN INTENSIVE GLOBAL EFFORT HAS BEEN PUT IN THE LAST DECADE TO MEASURE AND MODEL CARBON AND WATER EXCHANGES BETWEEN THE TERRESTRIAL BIOSPHERE AND THE ATMOSPHERE IN ORDER TO BETTER UNDERSTAND IMPACTS AND FEEDBACKS TO CLIMATE CHANGE. MODELING OF THE TERRESTRIAL CARBON AND WATER CYCLES AT GLOBAL SCALE IS CURRENTLY ACHIEVED USING GENERIC SOIL-VEGETATION-ATMOSPHERE TRANSFER (SVAT) PROCESS-BASED MODELS THAT REQUIRE PARAMETERS DESCRIBING TERRESTRIAL ECOSYSTEMS FUNCTIONAL CHARACTERISTICS IN A SPATIALLY EXPLICIT WAY. THE MOST FEASIBLE METHOD FOR OBTAINING AND UPDATING THESE PARAMETERS IN A SPATIALLY CONTINUOUS MODE AND ON A REGULAR BASIS IS REMOTE SENSING. A FULL INTEGRATION OF SPACE-SENSED SPECTRAL INFORMATION WITH GROUND LEVEL WATER AND CARBON FLUXES OBSERVATIONS HAS NOT BEEN SUCCESSFULLY ACHIEVED YET DESPITE NEW REMOTE SENSING PRODUCTS DIRECTLY RELATED TO CARBON CYCLE SUCH AS GROSS PRIMARY PRODUCTION ARE ALREADY AVAILABLE. SUCH PRODUCTS STILL LACK OF ROBUSTNESS AND CONSISTENCY FOR SPECIFIC ECOSYSTEM TYPES, IN PARTICULAR FOR DROUGHT PRONE ECOSYSTEMS WITH COMPLEX VEGETATION STRUCTURE LIKE MOST OF MEDITERRANEAN ECOSYSTEMS. THE KEY TO UNDERSTAND BOTH THE PROCESSES AND SPATIAL SCALING OF WATER AND CARBON FLUXES ESTIMATES REQUIRES A CAREFUL INTEGRATION OF OBSERVATIONS FROM GROUND, AIRBORNE AND SATELLITE	MARTIN ISABEL	MARIA DEL PILAR		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE ECONOMÍA, GEOGRAFÍA Y DEMOGRAFÍA (IEGD)	CENTRO DE CIENCIAS HUMANAS Y SOCIALES (CCHS)	01-01-13	31-12-15	MINECO	Spain

CGL2012-39604		COMPARATIVE GENOMICS OF THE ENVIRONMENTAL MYCOBACTERIA: ECOLOGICAL AND CLINICAL IMPLICATIONS	LEAF-LITTER QUALITY\MACROINVERTEBRATES\SHREDDERS\TROPHIC RELATIONS\ISOROPIC SIGNATURE	THERE IS INCREASING INTEREST TO ESTABLISH THE HEALTH RISKS DUE TO THE PRESENCE OF OPPORTUNISTIC PATHOGENIC BACTERIA IN THE ENVIRONMENT. THE BEST KNOWN EXAMPLE IS THAT OF MICROORGANISMS INHABITING OLIGOTROPHIC ENVIRONMENTS AND IN PARTICULAR DRINKING WATER. MOST HETEROTROPHIC BACTERIA FOUND IN WATER ARE NON-PATHOGENIC; ALTHOUGH IN LAST YEARS HAVE BEEN DESCRIBED SPECIES FROM DIFFERENT GENERA AS EMERGING OPPORTUNISTIC PATHOGENS. ONE OF THE MAIN EMERGING GENUS IS F MYCOBACTERIUM. THE SPECIES OF THE GENUS MYCOBACTERIUM, CLASSIFIED AS SLOW GROWTH AND RAPID GROWTH, ARE WIDELY DISTRIBUTED IN THE ENVIRONMENT AND WHEN ISOLATED FROM SAMPLES TAKEN FROM PATIENTS, AFTER CAUSING OPPORTUNISTIC INFECTIONS, ARE KNOWN AS NON-TUBERCULOUS MYCOBACTERIA OR ENVIRONMENTAL MYCOBACTERIA. RECENTLY HAS BEEN SHOWN THAT MANY NOSOCOMIAL INFECTIONS ARE CAUSED BY RAPID GROWING MYCOBACTERIA, AS WELL AS THEY HAVE BEEN ISOLATED IN HIGH PERCENTAGES FROM DIFFERENT DRINKING WATER DISTRIBUTION SYSTEMS. THE COMPARATIVE ANALYSIS OF A TOTAL 9 REPRESENTATIVE STRAINS OF SPECIES OF ENVIRONMENTAL AND CLINICS MYCOBACTERIA, ALONG WITH THE 20 GENOMES OF OTHER SPECIES OF THE GENUS MYCOBACTERIUM AVAILABLE SO FAR IN THE DATABASES, WILL IMPROVE THE UNDERSTANDING OF THEIR EVOLUTION,	BENNASAR FIGUERAS	ANTONIO		UNIVERSIDAD DE LAS ISLAS BALEARES	DPTO. BIOLOGIA	FACULTAD DE CIENCIAS	01-01-13	31-12-15	MINECO	Spain
CGL2012-32892		DYNAMICS OF THE FRESH WATER-SALT WATER CONTACT IN THE MOTRIL-SALOBREÑA COASTAL AQUIFER (GRANADA)	CIVIL ENGINEERING\HYDRAULICS\VERTICAL SLOT FISHWAYS\ARTIFICIAL INTELLIGENCE\ARTIFICIAL VISION	MOTRIL-SALOBREÑA AQUIFER HYDRONAMIC AND HYDROCHEMITRY IS, IN SPITE OF THE INTENSE ANTHOPOGENIC ACTIVITY THAT IS DEVELOPED OVER IT AND THE SURROUNDINGS AREAS, IN A LOW IMPACT SITUATION. RECENTLY 3 BOREHOLES WERE CONSTRUCTED 300 M FROM THE SHORELINE WITH DIFFERENT DEPTHS (49, 151 Y 250 M). ALL OF THEM WERE ARTESIAN, WITH A HIGHER HYDRAULIC HEAD (FROM 4.8 M TO 6.9 M A.S.L.) AS THE DRILLING DEPTH IS INCREASING. THIS FACT TOGETHER WITH THE LACK OF A CONFINING LAYER, AT LEAST, IN THE FIRSTS 150 M OF THE AQUIFER, POINT OUT TO THE FLOW PATTERN PROPOSED BY HUBBERT (1940) AND GLOVER (1959) IN COASTAL AQUIFERS. AS THEY SAID, IN THE CONTACT BETWEEN FRESHWATER AND SALT WATER, IS POSSIBLE TO DETECT VERTICAL UPWARD FLOW PATHS IN THE FRESHWATER. THEREFORE, EQUIPOTENTIALS RISING IS DETECTED AS THE DEPTH IS INCREASED. THESE BOREHOLES WILL ALLOW US TO MEASURE AT DIFFERENT DEPTHS HYDRAULIC HEAD, ELECTRIC CONDUCTIVITY OF THE GROUNDWATER, TEMPERATURE, HYDRAULIC GRADIENT, ETC. THIS WILL PROVIDE VALUABLE INFORMATION OF THE GROUNDWATER HYDRODYNAMIC IN THE FRESHWATER-SALTWATER CONTACT ZONE AND THE CORRELATION WITH THE RECHARGE MODIFICATIONS IN THE AQUIFER. IT REPRESENTS A NEW VIEWPOINT DUE TO THE COMMON DIFFICULTIES FOR DRILLING DEEP BOREHOLES LOCATED NEAR TO THE SHORELINE. USUALLY FOR THE STUDY OF	CALVACHE QUESADA	MARIA LUISA		UNIVERSIDAD DE GRANADA	DPTO. GEODINAMICA	FACULTAD DE CIENCIAS	01-01-13	31-12-15	MINECO	Spain
CGL2012-35848		EFFECTS OF WATER ABSTRACTION ON RIVER ECOSYSTEM FUNCTIONING	DEGLACIATION\GEOMORPHOLOGY\CRYOSFERA\ARQUEOLOGIA\ABSOLUTE DATING\NATURAL HAZARDS\CLIMATE CHANGE.	WATER ABSTRACTION IS A PREVALENT IMPACT ON WORLD RIVERS, AND IS EXPECTED TO INCREASE IN THE NEAR FUTURE AS A CONSEQUENCE OF RISING HUMAN POPULATION. WHEREAS THE IMPACTS OF LARGE RESERVOIRS ON RIVER ECOSYSTEM STRUCTURE AND FUNCTIONING ARE PRETTY WELL KNOWN, MUCH LESS INFORMATION IS AVAILABLE ON THE EFFECTS OF ABSTRACTION SCHEMES BASED ON LOW DAMS, LIKE SMALL HYDROPOWER PLANTS AND WATER DERIVATIONS FOR AGRICULTURE. ABSTRACTION REDUCES DISCHARGE, AND THUS, AFFECTS WATER VELOCITY AND TURBULENCE, THE WETTED PERIMETER, THE COVER OF PARAFLUVIAL AREAS, AND INPUTS OF ORGANIC MATTER AND SEDIMENTS FROM UPSTREAM. ALL THESE CHANGES CAN HAVE IMPORTANT IMPACTS ON RIVER ECOSYSTEM FUNCTIONING AT BOTH THE LOCAL AND THE REACH SCALE. OUR OBJECTIVE IS TO ASSESS THE IMPACT OF WATER ABSTRACTION ON RIVER ECOSYSTEM FUNCTIONING. MORE SPECIFICALLY, WE WILL ASSESS ITS EFFECTS ON CHANNEL FORM AND SEDIMENT DYNAMICS, ON THE STORAGE AND BREAKDOWN OF ORGANIC MATTER, ON THE AFFINITY OF BENTHIC SUBSTRATA FOR DISSOLVED NUTRIENTS, ON THE SELF-PURIFICATION CAPACITY OF STREAMS, ON THE IMPORTANCE OF HYPORHEIC VS SURFACE PROCESSES, AND ON WHOLE-STREAM METABOLISM. THESE IMPACTS WILL BE ANALYZED BY COMBINING FIELD	ELOSEGI	ARTURO		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. BIOLOGIA VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-13	31-12-15	MINECO	Spain

CGL2012-30779		ADAPTATION TO ENVIRONMENTAL UNPREDICTABILITY IN ROTIFER POPULATIONS	EVOLUTION\NATURAL VARIATION\LOCAL ADAPTATION\BRACHYPODIUM\CANDIDATE GENES\DROUGHT RESITANCE\WUE\MICROARRAYS	THE ADAPTIVE RESPONSE OF ORGANISMS TO UNPREDICTABLE ENVIRONMENTS IS INCREASINGLY RECOGNIZED AS A CENTRAL TOPIC IN FUNDAMENTAL AND APPLIED EVOLUTIONARY ECOLOGY. CYCLICALLY PARTHENOGENETIC ROTIFERS INHABITING SMALL WATER BODIES IN EASTERN SPAIN ARE A GOOD STUDY MODEL FOR THIS TOPIC. CLIMATE IN THE MEDITERRANEAN REGION CAUSES RANDOMLY VARYING ENVIRONMENTAL CONDITIONS, SO THE PERSISTENCE OF ROTIFER POPULATIONS DURING UNSUITABLE PERIODS REQUIRES LIFE‐HISTORY TRAITS TO MATCH ENVIRONMENTAL PATTERNS. HOWEVER, THE ASSOCIATION BETWEEN LIFE HISTORY VARIATION IN ROTIFER POPULATIONS AND THE DEGREE OF HABITAT UNPREDICTABILITY REMAINS POORLY UNDERSTOOD. OUR HYPOTHESIS IS THAT UNPREDICTABILITY SELECTS FOR TRAITS RELATED TO SEXUAL REPRODUCTION PATTERNS AND TIMING OF DORMANCY BREAKAGE. AN ADVANTAGE OF HIGHER AND EARLIER SEX INVESTMENT IN UNPREDICTABLE ENVIRONMENTS IS EXPECTABLE DUE TO: (1) THE VARIABILITY ORIGINATED BY SEXUAL REPRODUCTION, WHICH ALLOWS SEXUAL POPULATIONS TO DEVELOP OVER A BROADER RANGE OF ECOLOGICAL CONDITIONS, AND (2) THE COUPLING BETWEEN SEX AND PRODUCTION OF DIAPAUSING, RESISTANT EGGS IN ROTIFERS. ADDITIONALLY, ENVIRONMENTAL UNPREDICTABILITY IS EXPECTED TO SELECT FOR RISK	CARMONA NAVARRO	MARIA JOSE		UNIVERSIDAD DE VALENCIA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	01-01-13	31-12-15	MINECO	Spain
CGL2012-35858		ENVIRONMENTAL EFFECTS OF DEGLACIATION: CASE STUDIES IN CONTRASTED GEOGRAPHIC LANDSCAPES		THE PURPOSE OF THIS PROJECT IS TO PROVIDE A MULTIDISCIPLINARY POINT OF VIEW OF THE ENVIRONMENTAL EFFECTS PRODUCED BY THE DEGLACIATION, BY ANALYZING CASE STUDIES OF AREAS OF PARTICULAR SENSITIVITY TO CLIMATE CHANGE (HIGH MOUNTAIN AREAS) FROM THE LAST GLACIAL MAXIMUM TO THE PRESENT. IN EACH CASE OF STUDY, THROUGH ANALYSIS OF ITS GEOMORPHOLOGY, THE PROJECT WILL DEDUCE THE EVOLUTION OF WATER RESOURCES IN THE FORM OF ICE, TO INFER PALEOCLIMATE SPECIFIC SITUATIONS. THESE SITUATIONS WILL BE CONTRASTED WITH PALEOENVIRONMENTAL EVIDENCES DRAWN FROM THE ARCHAEOLOGICAL REMAINS. FROM THESE RESULTS, THE PROJECT WILL OBTAIN AN ABSOLUTE CHRONOLOGY OF THE PALEOENVIRONMENTAL AND PALEOCLIMATE SITUATIONS THROUGH THE APPLICATION OF SUITABLE DATING METHODS. THE FINAL OUTCOME OF THE BASIC RESEARCH WILL BE THE KNOWLEDGE OF THE CRYOSPHERA EVOLUTION AND ITS ENVIRONMENTAL EFFECTS IN EACH AREA. THE PROJECT WILL APPLY THESE RESULTS TO THE DELIMITATION OF AREAS OF INTEREST FOR THEIR PROTECTION, TO THE PREVENTION OF NATURAL HAZARDS AND WATER RESOURCE DEFICIT DERIVED FROM DEGLACIATION, TO IMPROVE CLIMATE CHANGE MODELS AND TO STUDY THE PLANT COLONIZATION SYSTEM IN DEGLACIATED AREAS. THE STRATEGY IS BASED ON THE SELECTION OF DIFFERENT AREAS WITH AN IMPORTANT GEOGRAPHICAL CONTRAST;	PALACIOS ESTREMERA	DAVID		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. ANALISIS GEOGRAFICO REGIONAL Y GEOGRAFIA FISICA	FACULTAD DE GEOGRAFIA E HISTORIA	01-01-13	31-12-15	MINECO	Spain
CGL2012-32965		EFFECTS OF DROUGHT EPISODES ON COMMUNITY DYNAMICS AND ASSEMBLY OF FORESTS AND SHRUBLANDS		DROUGHT-DRIVEN DIE-OFF AND MORTALITY ARE LIKELY TO INDUCE DEEP IMPACTS ON THE STRUCTURE, FUNCTIONING AND SERVICES PROVIDED BY FORESTS SINCE CLIMATIC SCENARIOS PROJECT AN INCREASE OF EXTREME EPISODES. ALTHOUGH RELEVANT ADVANCES HAVE BEEN OBTAINED ON THE UNDERSTANDING OF THE PATTERNS AND CAUSES OF TREE MORTALITY, THERE IS A GENERAL LACK OF KNOWLEDGE ABOUT THE POTENTIAL OF THESE EVENTS TO INDUCE SUDDEN SHIFTS ON FOREST COMPOSITION AND STRUCTURE. THE PROJECT INTRODUCES A DEMOGRAPHIC APPROACH TO THIS QUESTION, THROUGH THE ANALYSIS AND MODELLING OF THE BALANCE BETWEEN MORTALITY AND RECRUITMENT OF THE DOMINANT SPECIES IN FORESTS AFFECTED BY DIE-OFF. THE PROJECT EMPHASIZES THE STABILIZING FACTORS CONTRIBUTING TO ENHANCE ECOSYSTEM INERTIA, BY MINIMIZING MORTALITY AND MAXIMIZING RECRUITMENT. ALSO, COMMUNITY ASSEMBLY WILL BE ANALYZED CONSIDERING THE CHANGES ON RELATIVE ABUNDANCE OF THE WHOLE SET OF WOODY SPECIES, DISTINGUISHING THE WEIGHT OF STOCHASTIC FACTORS, DERIVED FROM THE SPECIES ABUNDANCE PRIOR TO THE EPISODE, FROM ENVIRONMENTAL FILTERS RELATED TO THE DROUGHT, EVALUATED FROM THE BIOGEOGRAPHICAL DISTRIBUTION AND FUNCTIONAL ATTRBUTES OF SPECIES. SPECIFICALLY, THE GENERAL OBJECTIVES ARE (1) TO ESTABLISH A NETWORK OF FOREST STATIONS AFFECTED BY CLIMATE-DRIVEN DIE-OFF, ANALYZING THE REGIONAL	LLORET MAYA	FRANCISCO		CENTRO DE INVESTIGACION ECOLOGIA Y APLICACIONES FORESTALES CCT	CENTRO DE INVESTIGACION ECOLOGIA Y APLICACIONES FORESTALES CCT	CENTRO DE INVESTIGACION ECOLOGIA Y APLICACIONES FORESTALES CCT	01-01-13	31-12-15	MINECO	Spain

CGL2012-36394		MORPHOSEDIMENTARY DYNAMICS IN HUMAN-STRESSED FLUVIAL SYSTEMS: COUPLING CHANNEL MORPHOLOGY AND ECOLOGICAL DIVERSITY		KNOWLEDGE OF THE INTERACTIONS BETWEEN PHYSICAL AND ECOLOGICAL PROCESSES IN FLUVIAL SYSTEMS IS FUNDAMENTAL TO SUPPORT RESTORATION PROGRAMS IN MODIFIED CATCHMENTS (A REQUIREMENT OF THE EU WATER FRAMEWORK DIRECTIVE); AND TO PROVIDE THE SCIENTIFIC BASIS FOR MANAGEMENT TOOLS THAT ARE NEEDED TO HELP PREDICTION OF, AND PLANNING MANAGEMENT RESPONSES TO, LONG TERM HYDROLOGICAL ALTERATIONS ASSOCIATED WITH GLOBAL CHANGE. MORPHSED WILL ANALYSE THE MORPHOSEDIMENTARY DYNAMICS OF A REPRESENTATIVE HUMAN-STRESSED FLUVIAL SYSTEM (SUFFERING MAJOR LOCAL ALTERATIONS DUE TO GRAVEL MINING), THEIR DRIVERS AND THEIR IMPACTS ON THE RIVER'S ECOLOGICAL INTEGRITY. PHYSICAL (I.E. GEOMORPHIC) AND ECOLOGICAL PROCESSES AND THEIR SPATIO-TEMPORAL DYNAMICS WILL BE COMPARED TO THOSE IN AN UNALTERED SYSTEM. THE MULTI-EVENT DATASET OBTAINED WILL ENABLE THE FIRST LINKS TO BE ESTABLISHED BETWEEN PHYSICAL AND ECOLOGICAL PROCESSES AT SCALES INTEGRATED FROM THE MICRO-HABITAT TO THE REACH SCALE. THESE LINKS WILL BE A KEY GOAL FOR PROGRESS TOWARDS THE SYSTEM-SCALE UNDERSTANDING OF THE INTERACTIONS BETWEEN RIVER DISTURBANCE AND ECOLOGICAL RESPONSES, AND PROVIDE THE BASIS FOR AN INTEGRATED METHODOLOGY THAT CAN BE USED TO AID PREDICTION, MANAGEMENT AND RESTORATION OF HUMAN STRESSED FLUVIAL SYSTEMS. MORPHSED WILL BE DEVELOPED IN THE ACTIVE GRAVEL-BEDDED UPPER RIVER CINCA (EBRO BASIN, SOUTH CENTRAL	VERICAT QUEROL	DAMIAN		UNIVERSIDAD DE LLEIDA	OPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	OPTO. MEDIO AMBIENTE Y CIENCIAS DEL SUELO	01-01-13	31-12-15	MINECO	Spain
CGL2012-35831		REMOTE SENSING OF TERRESTRIAL ESSENTIAL CLIMATE VARIABLES: WATER STRESS EFFECT ON CARBON FLUX ASSESSMENT	FLUVIAL AND COASTAL GEOMORPHOLOGY\FLOOD PLAINS\HISTORICAL ENVIRONMENTAL CHANGE\MEDITERRANEAN	AS STATED BY THE IPCC (IPCC, 2007), THE WARMING OF THE CLIMATE SYSTEM IS UNEQUIVOCAL AND MOST OF THE OBSERVED INCREASE IN GLOBALLY-AVERAGED TEMPERATURES SINCE THE MID-20TH CENTURY IS VERY LIKELY DUE TO THE OBSERVED INCREASE IN ANTHROPOGENIC GREENHOUSE GASES, BEING THE CARBON DIOXIDE THE MOST IMPORTANT ANTHROPOGENIC. THEREFORE THERE IS A NEED TO OPERATIONALLY QUANTIFY THE MAIN VARIABLES THAT CHARACTERIZE THE CLIMATIC SYSTEMS AND THE CARBON FLUXES BETWEEN THE SURFACE AND THE ATMOSPHERE. THE AIM IS THIS RESEARCH IS TO DEVELOP OPERATIONAL REMOTE SENSING BASED PROCEDURES TO ESTIMATE DIFFERENT TERRESTRIAL ESSENTIAL CLIMATE VARIABLES (ECVS) AND TO MONITOR THE CO2 FLUXES BETWEEN NATURAL ECOSYSTEMS AND THE ATMOSPHERE USING A PEM (PRODUCTION EFFICIENCY MODEL) OPTIMIZED FOR THE IBERIAN PENINSULA. MODIS AQUA AND TERRA AND SEVIRI-MSG IMAGES WILL BE USED. THESE TERRESTRIAL ECVS REFER TO SOLAR IRRADIATION (AND HENCE, THE PHOTOSYNTHETIC ACTIVE RADIATION, PAR), FAPAR (FRACTION OF PAR), LAI (LEAF AREA INDEX), LAND COVER (AND ECOSYSTEM FUNCTIONAL TYPES, EFTS), AND CANOPY WATER CONTENT (CWC) (WHICH IS NOT EXACTLY AN ECV BUT IT IS DIRECTLY CONNECTED WITH THE SOIL MOISTURE). THE ANALYSIS OF THE TIME SERIES OF THE AFOREMENTIONED ECVS "AS CONSIDERED AS STATE VARIABLES OF THE CLIMATE SYSTEM" CAN SERVE TO ANALYZE THE SYSTEM EVOLUTION. THE ECVS CAN ALSO BE USED TO CHARACTERIZE THE INPUTS OF THE PEM MODEL FROM REMOTELY SENSED DATA. THE	GILABERT NAVARRO	MARIA AMPARO		UNIVERSIDAD DE VALENCIA	FACULTAD DE FISICA	FACULTAD DE FISICA	01-01-13	31-12-15	MINECO	Spain
CGL2012-32590		INVESTIGATION BASED ON THE JOINT USE OF NATURAL AND ARTIFICIAL TRACERS FOR HYDROGEOLOGICAL CHARACTERISATION AND GROUNDWATER PROTECTION IN KARST AQUIFERS	COASTAL AQUIFER\MOTRIL-SALOBREÑA\SEA WATER INTRUSION\FRESH WATER-SALT WATER INTERFASE\AQUIFER SALINIZATION\ENVIRONMENTAL TRACERS\39AR\GROUND WATER DATING\DISCHARGE ZONE\GROUND WATER FLOW DYNAMICS	THE AIM OF THIS RESEARCH PROJECT IS TO EXAMINE AND COMPARE METHODOLOGIES FOR THE HYDROGEOLOGICAL CHARACTERISATION OF KARST AQUIFERS AND FOR THE PROTECTION AND MANAGEMENT OF THEIR GROUNDWATER RESOURCES, THROUGH THE ESTABLISHMENT OF PROTECTION ZONES AROUND WATER CATCHMENT AREAS. FOUR PILOT AQUIFERS WERE SELECTED AS REPRESENTATIVE OF DIVERSE CLIMATIC, GEOLOGICAL, GEOMORPHOLOGICAL AND HYDROGEOLOGICAL CONDITIONS IN THE WESTERN SECTOR OF THE BETIC CORDILLERA (SOUTHERN SPAIN). FAIRLY COMPREHENSIVE HYDROGEOLOGICAL KNOWLEDGE IS AVAILABLE FOR ONE OF THE AQUIFERS; FOR ANOTHER, SOME PRIOR STUDIES HAVE BEEN CONDUCTED, WHILE FOR THE REMAINING TWO, NO DETAILED INVESTIGATIONS HAVE YET BEEN CONDUCTED. HYDRODYNAMIC, HYDROTHERMAL, HYDROCHEMICAL AND ISOTOPE TECHNIQUES WILL BE APPLIED IN THE HYDROGEOLOGICAL CHARACTERISATION OF THESE AQUIFERS. REGARDING THE LATTER TWO TECHNIQUES, CONVENTIONAL NATURAL TRACERS (MAJOR CHEMICAL COMPONENTS AND STABLE ISOTOPES OF THE WATER MOLECULE) WILL BE USED, TOGETHER WITH OTHER, MORE NOVEL ONES SUCH AS NATURAL FLUORESCENCE, TOTAL ORGANIC CARBON AND RADON-222. AS WELL AS THE NATURAL TRACERS, ARTIFICIAL TRACERS (FLUORESCENT DYES) WILL BE INJECTED. ALTHOUGH UNCOMMON IN SPAIN, THIS APPROACH IS WIDELY APPLIED IN OTHER COUNTRIES.	ANDREO NAVARRO	BARTOLOME		UNIVERSIDAD DE MALAGA	FACULTAD DE CIENCIAS	FACULTAD DE CIENCIAS	01-01-13	31-12-15	MINECO	Spain

CGL2012-30838		NATURAL SELECTION AND ADAPTIVE SIGNIFICANCE OF CANDIDATES GENES ASSOCIATED TO DROUGHT TOLERANCE IN THE TEMPERATE GRASS BRACHYPODIUM DISTACHYON (POACEAE)	CLIMATE CHANGE\EXTREME CLIMATIC EPISODES\DROUGHT\FOREST DIE-OFF\VEGETATION DYNAMICS\FORESTS\PLANT FUNCTIONAL TYPES\COMMUNITY ASSEMBLY	WATER STRESS IS ONE OF THE MAIN ABIOTIC FACTORS THAT LIMIT THE DISTRIBUTION AND ABUNDANCE OF PLANTS AND ONE OF THE MAJOR SELECTIVE FORCES THAT PROMOTE LOCAL ADAPTATION IN PLANTS. FOR THESE REASONS, UNDERSTANDING THE MECHANISMS OF HOW PLANTS COPE WITH WATER STRESS HAS BEEN A RECURRENT AND CENTRAL TOPIC IN PLANT ECOLOGY, PLANT PHYSIOLOGY AND EVOLUTION. IN ADDITION, FROM A SOCIO-ECONOMIC VIEW, DROUGHT ALSO CONSTITUTES A MAJOR FACTOR, NEGATIVELY IMPACTING CROP GROWTH AND PRODUCTIVITY WORLDWIDE, ESPECIALLY IN CROP SPECIES THAT DEPEND ON A NATURAL RAINFALL REGIME. WATER USE EFFICIENCY (WUE) IS A KEY TRAIT INTRINSICALLY RELATED TO DEHYDRATION AVOIDANCE, WHICH HAS A DIRECT IMPACT ON PLANT PRODUCTIVITY. INTRASPECIFIC NATURAL VARIATION AND THE GENETIC ARCHITECTURE UNDERLYING THIS VARIATION IS ALMOST UNKNOWN. THIS PROPOSED RESEARCH WILL PROVIDE A COMPREHENSIVE EVOLUTIONARY ANALYSIS OF THE GENETIC BASIS OF BRACHYPODIUM DISTACHYON ADAPTATION TO DRY ENVIRONMENTS, AND WILL FURTHER SHED LIGHT ON THE GENOME-LEVEL EVOLUTIONARY PATTERNS AMONG OTHER NATURAL OR CROP TEMPERATE GRASS SPECIES. SPECIFICALLY, WE WILL ADDRESS THE FOLLOWING MAJOR GOALS: (1) TO IDENTIFY CANDIDATES GENES RELATED TO VARIATION IN WUE THROUGH THE ANALYSIS OF THE TRASNCRIPTOME; (2) TO CLONE AND SEQUENCE ALLELES	MANZANEDA AVILA	ANTONIO JOSE		UNIVERSIDAD DE JAEN	OPTO. BIOLOGIA ANIMAL, VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-13	31-12-15	MINECO	Spain
CGL2012-34688		ANALYSIS OF THE EFFICIENCY OF VERTICAL SLOT FISHWAYS USING ARTIFICIAL VISION WITH ARTIFICIAL INTELLIGENCE TECHNIQUES		THE WATER ENVIRONMENTS ARE HABITATS WHERE A GREAT QUANTITY OF ANIMAL SPECIES AND PLANTS ARE DEVELOPED. THE COMPOSITION, STRUCTURES AND FUNCTIONING OF THESE ECOSYSTEMS IS EASILY CHANGEABLE FOR THE ANTHROPIC ACTIVITIES. THE HUMAN BEING, MAINLY IN THE LAST FIFTY YEARS, HAS MODIFIED THE HYDROLOGICAL REGIME OF THE RIVERS (DAMS, HYDROELECTRIC POWER PLANTS, DREDGES...), CHANGING THE PHYSICAL-CHEMICAL PARAMETERS OF THE WATERS, THE SPEED OF THE CURRENT, THE DEPTH, THE MORPHOLOGY OF THE CHANNEL, THE WIDTH OF THE BED, THE CONCENTRATION OF SUBSTANCES AND THE TEMPERATURE OF THE WATERS. THESE ACTIONS HAVE CAUSED TRANSFORMATIONS IN THE WILDLIFE ASSOCIATED TO THE AQUATIC ECOSYSTEMS, VERY SIGNIFICANT IN THE CASE OF THE FISH, MORE VULNERABLE THAN THE VEGETATION WHEN THE HYDRAULIC CONDITIONS OF THE ENVIRONMENT VARY. ONE OF THE MOST DRAMATIC EFFECTS ASSOCIATED TO THE PREVIOUS ACTIVITIES IS CAUSED BY THE CONSTRUCTION OF TRANSVERSAL WORKS IN THE RIVER (DAMS, BRIDGES, ETC.), WHICH BLOCK OR LIMIT THE FREE CIRCULATION OF THE FISH. THE VERTICAL SLOT FISHWAYS ARE ONE OF THE SOLUTIONS USED TO ADAPT AN INSTALLATION OR STRUCTURE TO ALLOW THE FISH TO OVERCOME AN OBSTACLE OF A CERTAIN IMPORTANCE. THIS PROJECT INTENDS TO DEAL WITH A NEW ASPECT FOR THE CIVIL ENGINEERING, THE DEVELOPMENT OF AN	RABUÑAL DOPICO	JUAN RAMON		UNIVERSIDADE DA CORUÑA	CENTRO DE INNOVACION TECNOLOGICA EN EDIFICACION E INGENIERIA CIVIL	CENTRO DE INNOVACION TECNOLOGICA EN EDIFICACION E INGENIERIA CIVIL	01-01-13	31-12-15	MINECO	Spain
CGL2012-38909		ECOLOGICAL PATTERNS IN PLATEAU LAKES: THE KEY FOR THEIR CONSERVATION.	COMPARATIVE GENOMICS\ENVIRONMENTAL MYCOBACTERIA\BIOFILMS\RESISTOME \TOXIN-ANTITOXIN SYSTEMS\BIOINFORMATICS	SHALLOW SALINE LAKES LOCATED AT THE BIOSPHERE RESERVE OF "LA MANCHA HUMEDA" REPRESENT UNIQUE ECOSYSTEMS IN THE EUROPEAN CONTEXT, THOUGH THEY SUFFER, IN MANY CASES, DIFFERENT LEVELS OF DEGRADATION. THEIR SPATIAL STRUCTURE ALLOWS THE INTERCONNECTION THROUGH BIOTIC AND ABIOTIC VECTORS. MOREOVER, THEY ARE MAGNIFICENT MODELS FOR TESTING ECOLOGICAL HYPOTHESES RELATED TO THE FLOWS OF ORGANISMS, THE STRUCTURE OF POPULATIONS AND COMMUNITIES, AND THE TRANSIT OF NUTRIENTS AND FUNCTIONAL PATTERNS. IN THIS PROJECT, WE INTEND TO COMPARE THE DIFFERENT HYPOTHESES ABOUT THE STRUCTURING OF COMMUNITIES AND DISPERSAL EFFECTS, AND EVALUATE THE APPLICABILITY OF SUCH ASSUMPTIONS OR OTHER ECOLOGICAL THEORIES, SUCH AS METAPOPULATION THEORY, AT DIFFERENT SCALES. THESE SCALES ARE RELATED TO THE TYPE AND SIZE OF ORGANISMS, THEIR DISPERSAL CAPACITY AND THE TYPE OF VECTORS (ESPECIALLY WATERFOWL), AS WELL AS SPATIAL SCALES (DISTANCES BETWEEN LAKES AND GROUPS OF THEM) AND TIME. ADDITIONALLY TO THE STUDY OF THE DISPERSION AND STRUCTURE OF COMMUNITIES, WE INTEND TO ADDRESS FUNCTIONAL STUDIES ON THE IMPORT-EXPORT PROCESSES OF NUTRIENTS BETWEEN THE LAKES, AND BETWEEN THEM AND THEIR ENVIRONMENT, MAINLY MEDIATED BY THE AVIAN FAUNA, AND TO DETERMINE THE PATTERNS OF THE MAIN PRODUCTION AND CONSUMPTION	CAMACHO GONZALEZ	ANTONIO		UNIVERSIDAD DE VALENCIA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	INSTITUTO CAVANILLES DE BIODIVERSIDAD Y BIOLOGIA EVOLUTIVA	01-01-13	31-12-15	MINECO	Spain

CGL2012-32395		THE ENVIRONMENTAL IMPACTS OF IMPLEMENTING IRRIGATION AND POSSIBLE MITIGATING SOLUTIONS	HYDROLOGICAL CONNECTIVITY\INTEGRATED SEDIMENT BUDGET\MEDITERRANEAN BASINS\GLOBAL CHANGE\ENVIRONMENTAL FALLOUT RADIONUCLIDES\CONTAMINANTS\LAND USES\HYDROLOGICAL MODELLING\SPATIAL DATA INFRASTRUCTURE	IRRIGATION SIGNIFICANTLY CONTRIBUTES TO INCREASE AGRICULTURAL PRODUCTION. IT ALLOWS MORE CROP DIVERSIFICATION AND PROVIDES CONTINUOUS HARVEST. HOWEVER, IRRIGATED AGRICULTURE IS ALSO CHARACTERIZED BY EXCESSIVE WATER CONSUMPTION AND THE MAIN SOURCE OF POLLUTION OF WATER RESOURCES. CURRENTLY, THERE IS NO SUFFICIENTLY PRECISE KNOWLEDGE ABOUT ENVIRONMENTAL IMPACT THAT INDUCES A NEW IRRIGATION LAND TRANSFORMATION AND THE POSSIBILITIES TO DECREASE IT. TO DATE THERE IS NO DETAILED STUDY TO ANALYZE PRIOR, DURING AND AFTER THE DYNAMICS OF THE TRANSFORMATION TO IRRIGATED LAND, AND EVALUATE ALTERNATIVES TO MINIMIZE THEIR ENVIRONMENTAL IMPACT. THIS PROJECT AIMS AT TAKING ADVANTAGE OF THE EXCELLENT OPPORTUNITY TO CONTINUE THE MONITORING STARTED IN 2003 OF THE LERMA BASIN (750 HA, ZARAGOZA), IN WHICH IRRIGATION STARTED TO BE IMPLEMENTED IN 2006 AND THAT NOWADAYS IS A CONSOLIDATED IRRIGATION AREA. ONCE THE DYNAMICS OF ENVIRONMENTAL IMPACTS WERE ANALYZED BEFORE AND DURING IMPLEMENTATION OF IRRIGATION, THIS NEW PROJECT DETERMINES THE FINAL STAGE OF THE TRILOGY, ANALYZING THE EFFECTS AFTER CONSOLIDATION OF IRRIGATION. IN ADDITION, IT IS ALSO INTENDED TO DEEPEN KNOWLEDGE ON THE PROCESSES GOVERNING THE STUDIED SYSTEM AND EVALUATE THE DIFFERENT OPTIONS FOR MINIMIZING ENVIRONMENTAL IMPACTS, IN SUCH A WAY THAT THE LERMA BASIN IS CONSIDERED AS AN EXAMPLE OF SUSTAINABLE IRRIGATION AREA.	CAUSAPE VALENZUELA	JESUS		INSTITUTO GEOLOGICO Y MINERO DE ESPAÑA (IGME)	OFICINA DE ZARAGOZA	OFICINA DE ZARAGOZA	01-01-13	31-12-15	MINECO	Spain
CGL2012-39635		RESPONSES TO ARIDITY OF THE TROPHIC LINK BETWEEN RIPARIAN VEGETATION-FLUVIAL COMMUNITY IN HEADWATER STREAMS	FILTRATION\IRRIGATION\HEAD LOSS\COMPUTATIONAL FLUID DYNAMIC\CLOGGING\EMITTERS\ENERGY CONSUMPTION	ARIDITY HAS BEEN A RECURRING THEME IN THE RESEARCH OF MEDITERRANEAN ENVIRONMENTS. THE ARIDIFICATION PROCESS OF MANY MEDITERRANEAN AREAS HAS CLEAR HISTORICAL ROOTS, AND CLIMATE CHANGE SCENARIOS FOR THE REGION PROPOSED BY DIFFERENT AGENCIES AND AUTHORS COINCIDE IN AN ACCENTUATION OF THE PROCESS IN THE FUTURE. RIVER ECOSYSTEMS ARE NOW AMONG THE MOST DEGRADED BY VARIOUS ANTHROPOGENIC FACTORS OPERATING AT THE CATCHMENT LEVEL, WITH PERHAPS THE HEADWATER SECTIONS IN THE MOUNTAINS LESS AFFECTED BY SUCH IMPACTS. THEY ARE, THEREFORE, GOOD CANDIDATES IN WHICH TO OBSERVE THE POTENTIAL PREDICTED EFFECTS OF CLIMATE CHANGE MORE CLEARLY. SEVERAL FACTORS LINKED TO CLIMATE CHANGE ARE LIKELY TO MODIFY THE STRUCTURE AND FUNCTIONING OF HEADWATER STREAMS (CHANGES IN THERMAL AND DISCHARGE REGIMES, INCREASE IN ATMOSPHERIC CO2). OUR PROPOSAL HYPOTHESIZED THAT INCREASING ARIDITY HAS MIGHT INDUCE A DECREASE OF THE NUTRITIONAL QUALITY OF LEAF LITTER INPUTS FROM RIPARIAN VEGETATION TO THE RIVER, AND THAT SUCH A REDUCTION WOULD EVENTUALLY AFFECT THE FLUVIAL FOOD WEB, WITH VARYING MAGNITUDE, DEPENDING ON THE SPECIFIC ADAPTATIONS OF THE OF DETRITIVORE-SHREDDER GUILD,	CASAS JIMENEZ	JOSE JESUS		UNIVERSIDAD DE ALMERIA	DPTO. BIOLOGIA VEGETAL, PRODUCCION VEGETAL Y ECOLOGIA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-13	31-12-15	MINECO	Spain
CGL2012-38120		TRANSIENT FLOW ENHANCED AQUIFER REMEDIATION		IMPROPER DISPOSALS OF HAZARDOUS WASTES IN THE SUBSURFACE ARE THREATENING THE ENVIRONMENT AND PUBLIC HEALTH WORLDWIDE. IN SITU TREATMENT TECHNOLOGIES FOR RESTORING GROUNDWATER QUALITY ARE OFTEN BASED ON THE DELIVERY OF CHEMICAL SUBSTANCES INTO THE CONTAMINATED MEDIA TO PROMOTE FAVOURABLE REACTIONS. LOCAL HETEROGENEITIES AND THE PRESENCE OF WELL-CONNECTED PERMEABLE STRUCTURES TYPICALLY PREVENT THOSE CHEMICALS FROM FULLY MIXING WITHIN THE CONTAMINATED MEDIA, I.E., THE INJECTED COMPOUNDS CANNOT ACCESS THE CONTAMINATION TRAPPED IN LOW PERMEABILITY AREAS. THE RATIONALE OF THE PROPOSAL CONTENDS THAT BY INDUCING TEMPORAL FLUCTUATIONS OF WATER FLUXES THROUGH A SET OF EXTRACTION/INJECTION WELLS ONE CAN ENHANCE THE DELIVERY AND SUBSEQUENT MIXING OF CHEMICAL COMPOUNDS INTO THE CONTAMINATED MEDIA. MOREOVER, FOR SITES CONTAMINATED WITH HEAVY METALS, THESE TEMPORAL FLUCTUATIONS OF WATER FLUXES CAN FURTHER DISPERSE THE PRECIPITATION FRONT ASSOCIATED WITH IMMOBILIZATION TECHNIQUES, RETARDING CLOGGING EFFECTS AND ENLARGING THE AREA OF APPLICATION. THIS PROJECT PROPOSES A COMBINED NUMERICAL-THEORETICAL ANALYSIS TO EXAMINE THE POTENTIAL APPLICABILITY OF SUCH TECHNIQUES. THE PROJECT TACKLES BASIC RESEARCH QUESTIONS AS WELL AS	FERNANDEZ GARCIA	DANIEL		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	DPTO. INGENIERIA DEL TERRENO, CARTOGRAFICA Y GEOFISICA	01-01-13	31-12-15	MINECO	Spain

CGL2012-39520-C03-01		WATER REUSE: BEYOND THE ROYAL DECREE 1620/2007		THIS RESEARCH PROJECT CONSIDERS TWO REGENERATION TECHNOLOGIES FOR TREATED WASTEWATERS BASED ON GROUND APPLICATION, THEY ARE CROP IRRIGATION AND HORIZONTAL REACTIVE BEDS (PERMEABLE REACTIVE BARRIERS, PRBS). THE FIRST CASE INCLUDES IRRIGATION SYSTEMS FOR SOME CROPS WITH ENVIRONMENTAL AND ECONOMIC VALUE (FORAGE GRASSES AND SPECIES FOR BIO-FUEL PRODUCTION), WHERE THE REGENERATION MEDIUM WILL BE FORMED BY THE PLANT, THE SOIL, AND THE NON-SATURATED ZONE. IN THE OTHER CASE, THE REGENERATION MEDIUM WILL BE FORMED BY A PRB, THE SOIL AND THE NON-SATURATED ZONE (NSZ). IN BOTH CASES, THE MAIN GOAL OF THE PROJECT IS TO ASSESS QUANTITATIVELY THE MEDIUM CAPABILITY TO REGENERATE THE QUALITY OF THE TREATED WASTEWATER THAT IS APPLIED ON THE GROUND, IN A CONTEXT ON ENVIRONMENTAL SUSTAINABILITY, HEALTH PROTECTION AND ECONOMIC AND FINANCIAL BALANCE. IN THIS PURPOSE, TWO PARTICULAR GOALS ARE IMPLICIT: A) TO ASSESS THE REGENERATION CAPABILITY OF THE PLANT-SOIL-NSZ AND PRB-SOIL-NSZ MEDIA TO REGENERATE THE WASTEWATER FROM THE IRRIGATION UP IT REACHES THE SATURATED ZONE, AND B) TO ASSESS THE IMPACTS RELATED TO THE RETURN OF THE IRRIGATION WATER AND THE EFFECTS ASSOCIATED TO THE RECHARGE BY PERCOLATION, THAT ARE NOT CONSIDERED BY THE RD 1620/2007. TO GET THE PROPOSED AIMS, THE METHODOLOGY WILL BE MAINLY BASED ON THE STUDY AND MONITORING OF THE SYSTEMS IN DIFFERENT CONDITIONS REGARDING WASTEWATER ORIGIN (URBAN AND LIVESTOCK), RECEIVING	LILLO RAMOS	FRANCISCO JAVIER		FUNDACION IMDEA AGUA	AGR-FUNDACIÓN IMDEA AGUA	AGR-FUNDACIÓN IMDEA AGUA	01-01-13	31-12-15	MINECO	Spain
CGL2012-39520-C03-03		REUSE OF WASTEWATER FOR SUSTAINABLE DEVELOPMENT: FORAGE PRODUCTION AND BIOENERGETICS	HYDROCLIMATIC VARIABILITY\NON-STATIONARITY\REGIONAL CLIMATE MODELS\VULNERABILITY\UNCERTAINTIES\HYDROLOGICAL PROJECTIONS	CURRENT LEGISLATION INCLUDES QUALITY REQUIREMENTS OF RECLAIMED WATER THAT MAY NOT BE NECESSARY IF IRRIGATION MANAGEMENT AND SPECIES ARE ADEQUATE. IN THIS PROJECT TWO EXTREMES OF REUSE TREATED WATER QUALITY: LIVESTOCK EFFLUENT WITH A MINIMUM OF LOW-COST TREATMENT (PLOT AT EL HIERRO) AND A SECONDARY WATER DESALINATION POST TREATMENT (PLOT AT GRAN CANARIA) WILL BE ANALYZED. THE HYPOTHESIS IS THAT THE RHIZOSPHERE SOIL HAS A PURIFYING POWER WHICH DEPENDS ON MULTIPLE FACTORS. THERE ARE A FEW STUDIES ABLE TO QUANTIFY THIS CAPACITY SO THE APPROPRIATE METHODOLOGY IS DEVELOPED. SOIL DEPURATION CAPACITY, NUTRIENT ABSORPTION IN DIFFERENT SPECIES AND WATER MANAGEMENT ARE EVALUATED IN REAL CONDITIONS. WITH THE PROPOSED SOLUTION, THE HEALTH SECURITY IS OBTAINED BY USING AN SUBSURFACE DRIP IRRIGATION SYSTEM AND THE USE OF SPECIES NOT INTENDED FOR HUMAN CONSUMPTION. TO ENSURE THE QUALITY OF WATER REACHING THE AQUIFER, THE WATER LEAVING THE UNSATURATED ZONE WILL BE ANALYZE, INCLUDING EMERGING COMPOUNDS EVALUATION. CURRENTLY, FARMERS ARE POURING EFFLUENTS WITHOUT CONTROL OR THEY LEAD TO SMALL RURAL SEWAGE HINDERING ITS OPERATION. THESE EFFLUENTS CAN BE REUSED PROPERLY, IF SEPARATED AND TREATED, USING THEIR NUTRITIONAL VALUE TO CROPS, IF SUFFICIENT HEALTH, WATER QUALITY OF THE UNDERLYING AQUIFER	PALACIOS DIAZ	Mª DEL PINO		UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA	DPTO. PATOLOGIA ANIMAL, PRODUCCION ANIMAL, BROMATOLOGIA	FACULTAD DE VETERINARIA	01-01-13	31-12-15	MINECO	Spain
CGL2012-39895-C02-01		ASSESSMENT OF HYDROCLIMATIC VARIABILITY FROM REGIONAL CLIMATE MULTIMODEL ENSEMBLE	REMOTE SENSING\WATER FLUXES\CARBON FLUXES\DEHESA\UP-SCALING	SPAIN IS ONE OF THE EUROPEAN COUNTRIES WITH THE MOST SEVERE ENVIRONMENTAL PROBLEMS RELATED TO WATER SCARCITY AND DROUGHTS, THESE PROBLEMS BEING LIKELY TO GET WORSE IN THE NEXT DECADES. IN PARTICULAR, SEVERAL STUDIES PREDICTED INCREASING TREND IN TEMPERATURE AND DECREASING TREND IN RAINFALL IN THE IBERIAN PENINSULA, DUE TO CLIMATE VARIABILITY, GLOBAL CHANGE AND LAND USE. WHILE REGIONAL CLIMATE MODELS (RCM) ARE A VALUABLE TOOL FOR UNDERSTANDING CLIMATE PROCESSES, THE CAUSES AND PLAUSIBLE IMPACTS ON VARIABLES AND METEOROLOGICAL EXTREMES PRESENT A WIDE RANGE OF ASSOCIATED UNCERTAINTIES. THE "MULTI-MODEL ENSEMBLE" APPROACH ALLOWS THE QUANTIFICATION AND REDUCTION OF UNCERTAINTIES IN THE PREDICTIONS. IN THE PRESENT PROPOSAL, CHANGES IN THE SPATIO-TEMPORAL PATTERNS OF HYDROLOGICAL PROJECTIONS AND METEOROLOGICAL EXTREMES EVENTS (SUCH AS DROUGHTS AND MAXIMUM RAINFALL), IN PENINSULAR SPAIN WILL BE ASSESSED FROM HIGH-RESOLUTION GRIDS OF OBSERVED DAILY METEOROLOGICAL VARIABLES (MAINLY RAINFALL AND TEMPERATURE), AND INFORMATION PROVIDED BY LAST-GENERATION RCMS. THE NON-STATIONARITY CHARACTER OF TIME SERIES, DUE TO CLIMATE AND ANTHROPOGENIC CHANGES, WILL BE REPRESENTED BY PROBABILISTIC MODELS CONSIDERING THE TIME EVOLUTION OF PROBABILITY DENSITY FUNCTION (PDF) PARAMETERS FITTED TO THE HYDROMETEOROLOGICAL TIME SERIES. A PDF ENSEMBLE WILL BE BUILD FROM DISTINCT RCMS, THE SPATIO-TEMPORAL VARIABILITY EXHIBITED BY THEM IN THE SIMULATION OF	GARCIA GALIANO	SANDRA		UNIVERSIDAD POLITÉCNICA DE CARTAGENA	ESCUELA UNIVERSITARIA DE INGENIERIA TECNICA CIVIL	ESCUELA UNIVERSITARIA DE INGENIERIA TECNICA CIVIL	01-01-13	31-12-15	MINECO	Spain

CGL2012-32446		ASSESSING HYDROLOGICAL AND SEDIMENT CONNECTIVITY IN CONTRASTING MEDITERRANEAN BASINS. IMPACTS OF GLOBAL CHANGE	KARST AQUIFER\TOTAL ORGANIC CARBON\BETIC CORDILLERA\\NATURAL FLUORESCENTE\HYDROCHEMISTRY\STABLE ISOTOPES\RADON 222\FLUORESCENT DYE TRACERS	MEDHYCON PROJECT INTENDS TO INVESTIGATE CHANGING PATTERNS OF HYDROLOGICAL AND SEDIMENT CONNECTIVITY INDUCED BY CLIMATE AND LAND USE CHANGES IN MEDITERRANEAN CATCHMENTS BY USING A SEDIMENT BUDGET ASSEMBLED WITH SEVERAL METHODS WHEN APPLIED TO LIKELY SCENARIOS OF GLOBAL CHANGE. THE SWAT MODEL, PREVIOUSLY VALIDATED WITH THE SEDIMENT BUDGETS, MAY ALSO BE USED TO ANTICIPATE THE CATCHMENT RESPONSE TO THESE CHANGES. RESEARCH WILL BE FOCUSED ON THREE CATCHMENTS IN A DECREASING A PRIORI RANGE OF CONNECTIVITY AND INCREASING SIZE: THE SMALL VALLCEBRE CATCHMENT (4 KM2) IN THE SOUTH-EASTERN PYRENEES, THE SANT MIQUEL CATCHMENT (151 KM2) IN THE SERRA DE TRAMUNTANA OF MALLORCA ISLAND, AND THE NA BORGES CATCHMENT (319 KM2) IN THE CENTRAL DEPRESSION OF MALLORCA ISLAND. THE OBJECTIVES OF THE PROJECT ARE: 1) TO DEVELOP A SEDIMENT BUDGET AS A PERCEPTUAL MODEL OF HYDROLOGICAL AND SEDIMENT CONNECTIVITY BY APPLYING A MULTI-TECHNIQUE APPROACH WITHIN THE THREE CATCHMENTS. GIS MODELLING, SEDIMENT-TRACER TECHNIQUES AND CONTINUOUS MONITORING OF WATER AND SEDIMENT FLUXES WILL BE USED TO DEVELOP AN UNDERSTANDING OF CATCHMENT RESPONSE. 2) TO DEVELOP FURTHER THE APPLICATION OF 137CS FALLOUT	ESTRANY BERTOS	JOAN JOSEP		UNIVERSIDAD DE LAS ISLAS BALEARES	DPTO. CIENCIAS DE LA TIERRA	DPTO. CIENCIAS DE LA TIERRA	01-01-13	31-12-15	MINECO	Spain
CSD2006-00044		TREATMENT AND REUSE OF WASTE WATER FOR SUSTAINABLE MANAGEMENT (TRAGUA)		SPAIN IS THE EUROPEAN COUNTRY WITH THE HIGHEST WATER DEFICIT AND IS ONE OF THE COUNTRIES WITH HIGHEST WATER REUSE, DESPITE THE FACT THAT ONLY 5% OF THE VOLUME OF WASTEWATER IS REUSED. HOWEVER, THE WATER REUSE POTENTIAL IN SPAIN IS CA. 10 TIMES HIGHER THAN CURRENT. PRESENT OR FUTURE WATER SCARCITY REPRESENTS A PROBLEM TO 96.5% OF THE SPANISH POPULATION. WATER REUSE IS ONE THE BASIC MAINSTAYS OF SUSTAINABLE WATER MANAGEMENT. THE MAIN REASONS IDENTIFIED FOR SMALL WATER REUSE ARE: LACK OF TREATMENT PROTOCOLS FOR TREATED URBAN WATERS; LACK OF CLEAR CRITERIA FOR SELECTING ADVANCED TECHNOLOGIES; LACK OF COMMONLY ACCEPTED WATER QUALITY INDICATORS IN RELATION TO ITS LATER USE; AND LACK OF TOOLS TO ESTABLISH THE ECONOMIC AND SOCIAL ADVANTAGES OF WATER REUSE. THESE NEEDS ARE ASSOCIATED TO THE LACK OF SYSTEMATIC INFORMATION ABOUT THE EFFECT THAT NON-USUAL WATER COMPONENTS CAN HAVE ON THE NATURAL ENVIRONMENT. THE GOAL OF THIS PROGRAM IS TO GENERALLY ACHIEVE THE DIFFERENT ASPECTS INVOLVED IN THE REUSE OF WASTE WATERS COMING FROM WASTEWATER TREATMENT PLANTS, STUDYING THE APPLICATION OF TREATMENTS BASED ON ADVANCED TECHNOLOGIES, ESTABLISHING WATER CHEMICAL AND	GARCIA CALVO	ELOY		UNIVERSIDAD DE ALCALA	DPTO. QUIMICA ANALITICA E INGENIERIA QUIMICA	FACULTAD DE QUIMICA	15-09-06	25-06-12	MINECO	Spain
CSD2006-00067		IRRIGATION WATER MANAGEMENT PROGRAM TO SAVE WATER AND TO IMPROVE ITS PRODUCTIVITY IN SPANISH HORTICULTURE		BENEFICIAL USE OF WATER IN IRRIGATED AGRICULTURE INCLUDES THE FULL CONSUMPTIVE USE (ET) OF CROPS AND THE LEACHING FRACTION FOR CONTROL OF SALINITY. WATER SCARCITY IS CAUSED BY INCREASED DEMANDS BY OTHER SOCIETAL SECTOR AND BY PERIODIC DROUGHTS. IN MANY WORLD AREAS THE PARADIGM IN IRRIGATION MANAGEMENT IS SHIFTING FROM FULL TO PARTIAL SUPPLY OF CROP WATER REQUIREMENTS THROUGH DEFICIT IRRIGATION (DI). SPECIFICALLY, RESEARCH HAS UNCOVERED THE POTENTIAL OF REGULATED DEFICIT IRRIGATION (RDI) AS A TECHNIQUE TO REDUCE IRRIGATION WATER USE IN TREE CROPS AND VINES. THIS PROGRAM AIMS AT RESEARCHING THE FULL POTENTIAL OF DI FOR SAVING IRRIGATION WATER AND FOR IMPROVING ITS PRODUCTIVITY IN THE HORTICULTURAL SECTOR OF SPAIN THROUGH: A) DEVELOPMENT OF BEST MANAGEMENT PRACTICES IN RDI FOR THE MAJOR TREE CROPS AND VINES IN SPAIN; B) DETERMINATION OF THE ET OF ORCHARDS UNDER WATER DEFICIT AND OF THE ASSOCIATED NET WATER SAVINGS THROUGH RDI; C) DESIGN OF IRRIGATION SCHEDULING PROGRAMMES FOR RDI AND ASSOCIATED MONITORING AND AUTOMATION NEEDS; D) ASSESSMENT OF THE SUSTAINABILITY OF RDI BY EVALUATING SALINITY AND OTHER RISKS UNDER DEFICIT IRRIGATION; AND, E)	FERERES CASTIEL	ELIAS		UNIVERSIDAD DE CORDOBA	DPTO. AGRONOMIA	DPTO. AGRONOMIA	15-09-06	31-12-12	MINECO	Spain

CSD2007-00055		CONCEPTION OF THE SEWAGE TREATMENT PLANT OF THE XXI CENTURY. DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF TECHNOLOGIES FOR THE TREATMENT AND RESOURCES RECOVERY FROM WASTEWATERS		THE AIM OF THE PROJECT IS TO DEFINE THE STRUCTURE OF SEWAGE TREATMENT PLANTS (STP) BASED ON THE USE OF EMERGING TECHNOLOGIES AND THE EVALUATION OF OPERATIONAL STRATEGIES, APPLYING A. MULTI-CRITERIA ANALYSIS THAT INCORPORATES TECHNOLOGICAL, ENVIRONMENTAL, ECOTOXICOLOGICAL AND ECONOMICAL ASPECTS, WHEN THE BEST AVAILABLE TECHNOLOGIES NOT LEADING TO EXCESSIVE COSTS (BATNLEC) ARE SELECTED. THE PROPOSAL IS OPEN TO NEW PARADIGMS AND IDEAS THAT ARE ARISING AT INTERNATIONAL LEVEL, INCLUDING ISSUES SUCH AS COSTS AND ENERGY MINIMISATION, SLUDGE PRODUCTION MINIMISATION AND MANAGEMENT, THE POTENTIAL RECOVERY OF WATER FOR REUSE AND OTHER VALUABLE RESOURCES FROM WASTEWATERS, ETC. THIS WOULD TURN THE STP INTO A PLANT CONCEIVED FOR THE TREATMENT AND RESOURCE RECOVERY FROM WASTEWATER. THE PROJECT WILL PURSUE THREE GENERAL OBJECTIVES: I) THE DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF ADVANCED PROCESSES FOR THE TREATMENT OF WASTEWATER AND SLUDGE, WHEREINTEGRATED MODELS FOR ALL PROCESSES, INCLUDING THE REQUIRED WATER QUALITY IN EACH SCENARIO AND CONSIDERING THE INTERNAL AND EXTERNAL ECONOMICAL AND ENVIRONMENTAL IMPACTS IMPACTS WILL BE SET UP; II) EFFICIENT TECHNOLOGY	LEMA RODOCIO	JUAN M.		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	10-12-07	31-07-13	MINECO	Spain
CSD2009-00065		ASSESSING AND PREDICTING EFFECTS ON WATER QUANTITY AND QUALITY IN IBERIAN RIVERS CAUSED BY GLOBAL CHANGE	SOILS\FUNGICIDES\VINEYARD\SPENT MUSHROOM SUBSTRATE	SCARCE AIMS TO DESCRIBE AND PREDICT THE RELEVANCE OF GLOBAL CHANGE IMPACTS ON WATER AVAILABILITY, WATER QUALITY AND ECOSYSTEM SERVICES IN MEDITERRANEAN RIVER BASINS OF THE IBERIAN PENINSULA, AS WELL AS THEIR IMPACTS ON THE HUMAN SOCIETY AND ECONOMY, USING A MULTIDISCIPLINARY, CROSS-SCALE RESEARCH. DATA MINING AND FIELD BASED RESEARCH IN FOUR REPRESENTATIVE WATERSHEDS IN SPAIN FOLLOWING A NORTH-SOUTH TRANSECT (LLOBREGAT, EBRO, JÚCAR, AND GUADALQUIVIR) IS INTENDED TO GIVE A COMPREHENSIVE ASSESSMENT AND PREDICTION OF THE POTENTIAL MODIFICATIONS IN RESOURCES AND ECOSYSTEM SERVICES ARISING FROM CLIMATE CHANGE AND HUMAN PRESSURE IN THE MEDITERRANEAN IBERIAN PENINSULA. THE SELECTED BASINS COVER A SUBSTANTIAL AREA OF THE MEDITERRANEAN SPAIN, AND INCLUDE A PROGRESSION OF SPATIAL SCALES, AS WELL AS A RICH SET OF SOCIO-ECOLOGICAL SCENARIOS	BARCELÓ CULLERES	DAMIA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE CC. QUÍMICAS Y AMBIENTALES J. P. VILA	INSTITUTO DE CC. QUÍMICAS Y AMBIENTALES J. P. VILA	17-12-09	16-12-14	MINECO	Spain
CSO2009-09880		DELIBERATIVE DEMOCRACY AND WATER POLICY: PUBLIC PARTICIPATION IN RELATION TO THE WATER FRAMEWORK DIRECTIVE		THE EU WATER FRAMEWORK DIRECTIVE (WFD) WAS APPROVED IN THE YEAR 2000 (2000/60/CE). IN ESSENCE, THIS EUROPEAN DIRECTIVE TRIES TO INSTITUTIONALIZE A POLICY THAT ASSUMES THE BASIC IDEAS OF THE SO-CALLED ¿NEW WATER CULTURE¿. TO SUM UP, IT¿S ABOUT OVERCOMING A POLICY THAT TILL THEN HAD PROVED TO BE INSENSITIVE TO QUESTIONS THAT DID NOT HAVE A STRICTLY HYDROLOGICAL CHARACTER, AND TO PUT FORWARD A NEW PERSPECTIVE - MORE POLYHEDRIC ¿ THAT INCORPORATES TO THE POLICY THE RELEVANT ENVIRONMENTAL, ECONOMIC AND SOCIAL ISSUES. WATER POLICY, THUS, GETS PLACED IN A MORE COMPLEX STAGE AND, CONSISTENTLY, IT CALLS FOR POLICY-MAKING AND MANAGEMENT INSTRUMENTS THAT ARE ALSO MORE COMPLEX. WHEN WE MOVE BEYOND THE SPECIFICALLY HYDROLOGICAL WORRIES, INCORPORATING ENVIRONMENTAL, ECONOMIC AND SOCIAL CONSIDERATIONS, THE MANAGEMENT CAPACITIES OF THE TRADITIONAL EXPERTS ARE OVERWHELMED. AND THEREFORE WE ARE GENERATING THE NEED OF DIFFERENT POINTS OF VIEW, OF DIVERSE ACTORS AND DIVERSE APPROACHES. POLYHEDRIC WATER PROBLEMS NEED POLYHEDRIC ANSWERS. ACCORDING TO THIS, THE WFD INTRODUCES THE OBLIGATION TO ACCOMPANY THE BASIN MANAGEMENT PLANS WITH CITIZENS¿ INFORMATION AND PARTICIPATION PROCESSES. IT IS THE LOGICAL CONSEQUENCE OF INTRODUCING COMPLEXITY IN THE MANAGEMENT OF COMPLEXITY. THE WFD DEFINITIVELY PROMOTES -SIMULTANEOUSLY AND IN A COHERENT WAY- A WATER POLICY WITH NEW	BRUGUE TORRUELLA	QUIM		UNIVERSIDAD AUTONOMA DE BARCELONA	INSTITUT DE GOVERN I POLITIQUES PÚBLIQUES	INSTITUT DE GOVERN I POLITIQUES PÚBLIQUES	01-01-10	30-06-13	MINECO	Spain

CSO2009-08918		ECOSYSTEM SERVICES AND ADAPTIVE PLANNING: THE WETLAND CASE	URBANISM\WATER CONSUMPTION\DEMOGRAPHY\GIRONA\ALICANTE	OUR PROPOSAL WANTS TO EXPLORE HOW BETTER MANAGE AND PLAN ONE OF THE MOST RICH AND VULNERABLE ECOTONE, THE WETLANDS, IN THE PERSPECTIVE OF ECOSYSTEM APPROACH. TO DO SO, IT WILL FOCUS ON ECOSYSTEM SERVICES FOLLOWING THE PRINCIPLES AND CONCEPTS OF THE MILLENIUM ECOSYSTEM ASSESSMENT (MEA). COASTAL WETLADNS ARE A PARTICULARLY INTERESTING ECOSYSTEM, BECAUSE THEY ARE ESPECIALLY SENSITIVE TO HUMAN IMPACTS. AT GLOBAL SCALES, WETLANDS ARE AMONGST THE MOST THREATENED ECOSYTEMS AS A RESULT OF DRAINAGE, LAND RECLAMATION, LAND CONVERSION, POLLUTION AND OVEREXPLOITATION, AND THOSE FOUND IN THE MEDITERRANEAN ARE NO EXCEPTION. THE BENEFITS THAT PEOPLE GAIN FROM WETLANDS INCLUDE THE PRODUCTION OF FOOD, FRESWATER AND BUILDING MATERIALS, BUT SERVICES SUCH AS THE PROTECTION FROM FLOODING AND COASTAL EROSION, CARBON STORAGE AND SEQUESTRATION, AND OPPORTUNITIES FOR TOURISM. MANY WETLANDS AREAS HAVE ENORMOUS CULTURAL SIGNIFCANCE FOR PEOPLE. THE PROJECT WILL WORK IN A NUMBER OF SPANISH WETLANDS CASE STUDIES AND THEIR REGION COMPARING WHAT HAPPENS AND NON PROTECTED AREAS: 1) THE EMPORDA WETLANDS THAT ENCOMPASSES THE ALT AND BAIX EMPORDA COUNTIES; 2) THE EBRO DELTA; AND 3) THE WETLANDS OF BAHIA DE CADIZ. IN THIS PROPOSAL WE WILL WORK ON A NUMBER OF ECOSYSTEM SERVICES TO VALUE WHAT THEY BRING IN	BRETON RENARD	FRANÇOISE		UNIVERSIDAD AUTONOMA DE BARCELONA	DPTO. GEOGRAFIA	FACULTAT DE FILOSOFIA I LLETRES	01-01-10	31-12-12	MINECO	Spain
CSO2011-29425		WATER FRAMEWORK DIRECTIVA AND HYDROLOGICAL RISKS: DROUGHT MANAGEMENT AND MITIGATION	WASTEWATER\REACTOR\MEMBRANE\REFRACTORY POLLUTANT\EMERGENT POLLUTANT\ANAEROBIC\AEROBIC\ADVANCED OXIDATION	THE PROJECT 'WATER FRAMEWORK DIRECTIVE AND HYDROLOGICAL RISKS: DROUGHT MANAGEMENT AND MITIGATION' AIMS AT CREATING A SUPPORTING MODEL FOR THOSE DECISION-MAKING PROCESSES DIRECTED AT MINIMISING OR ERASING THE ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACT OF DROUGHTS. THE PROPOSAL IS BASED UPON THE NEW WATER MANAGEMENT POLICY OPERATING IN EUROPE SINCE 2000; THIS NEW POLICY MOVES TOWARDS THE SUBSTITUTION OF TRADITIONAL, AND DEFICIENT, WATER MANAGEMENT POLICIES, FOR WHICH DROUGHTS WERE UNAVOIDABLE CATASTROPHES, WITH NEW MANAGEMENT MODELS IN WHICH VARIABILITY AND UNCERTAINTY ARE DULY CONSIDERED. THE STUDY FOLLOWS THE LATEST TRENDS IN RISK MANAGEMENT AND, PARTICULARLY, IN THE DEVELOPMENT OF MODELS FOR THE PREDICTION, MONITORING, MANAGEMENT AND MITIGATION OF DROUGHTS, THE IMPLEMENTATION OF WHICH REQUIRES MULTIDISCIPLINARY TEAMS. THE NOVELTY OF THIS PROPOSAL LIES IN THE INCORPORATION OF DYNAMIC AND CHANGING SETTINGS, AS CHANGING AS THE LANDSCAPE ITSELF, ALLOWING FOR THE DRAFTING OF MANAGEMENT ALTERNATIVES NOT PREVIOUSLY AVAILABLE. PRIOR TO THE DEVELOPMENT OF THE PROJECT "AND AGAINST A BACKGROUND OF GLOBAL CHANGE AND THE PRECAUTIONARY AND PARTICIPATIVE APPROACHES" THE	PANEQUE SALGADO	MARIA DEL PILAR		UNIVERSIDAD PABLO DE OLAVIDE, DE SEVILLA	FACULTAD DE HUMANIDADES	FACULTAD DE HUMANIDADES	01-01-12	31-12-14	MINECO	Spain
CTM2007-60472		ELECTROCHEMICAL TECHNOLOGIES FOR THE ISOLATION OF POLLUTION AND THE REMEDIATION OF ORGANIC-POLLUTED SOILS AND GROUNDWATERS	CATALYSIS\HETEROGENEOUS-FENTON\ACTIVE CARBON\TITANIA\ADVANCED OXIDATION PROCESS\PHOTOCATALYSIS\IRON	NOWADAYS, SOIL AND GROUNDWATER POLLUTION IS A PROSPECTIVELY IMPORTANT PROBLEM. AS IT IS KNOWN, DUE TO THE HUGE MOBILITY OF POLLUTANTS IN THIS MEDIA, EVEN A LITTLE INCIDENTAL DISCHARGE OF POLLUTANTS IN A SMALL SOIL AREA CAN LEAD TO A SERIOUS GROUNDWATER POLLUTION PROBLEM. AMONG OTHER IMPORTANT ENVIRONMENTAL PROBLEMS, THIS CAN BAN THE USE OF THIS GROUNDWATER FOR HUMAN SUPPLY. ELECTROCHEMICAL GROUNDWATER AND SOIL REMEDIATION TECHNOLOGIES HAVE BEEN STUDIED FOR YEARS. PRESENTLY, MANY TECHNOLOGIES ARE AVAILABLE AT THE LAB-SCALE LEVEL, BUT NOT ALL OF THEM HAVE BEEN TESTED IN ACTUAL REMEDIATION CASES (FULL-SCALE APPLICATIONS) AND THE DIRECT EXTRAPOLATION OF RESULTS WITHOUT FURTHER RESEARCH IS RECKLESSNESS. MANY OF THE TECHNOLOGICAL PROCESSES AVAILABLE (ESPECIALLY THOSE RUNNING AT THE FULL-SCALE LEVEL) ARE DEVELOPED BY THE R&D DEPARTMENTS OF LARGE COMPANIES (DUPONT, MOSANTO, ETC.) OR BY SMALL COMPANIES FULLY DEVOTED TO THE DEVELOPMENT OF A REMEDIATION TECHNOLOGY (HAK MILIEUTECHNIEK BV, ETC). OBVIOUSLY, THESE COMPANIES ARE NOT INTERESTED IN PUBLISHING THEIR RESULTS (AS ¿KNOW-HOW¿ IS THEIR MAIN PRODUCT), BUT TO SELL IT IN FULL-SCALE ACTUAL SOIL AND/OR GROUNDWATER REMEDIATION CASES. IN THIS	CAÑIZARES CAÑIZARES	PABLO		UNIVERSIDAD DE CASTILLA-LA MANCHA	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS QUIMICAS	01-10-07	31-12-10	MINECO	Spain

CTM2007-66306-C02-02		EVALUATION OF DIFFUSE CONTAMINATION INDUCED BY VETERINARIAN TREATMENTS IN THE SOIL-WATER SYSTEM. DECONTAMINATION STRATEGIES	ELECTROCHEMISTRY\REACTIVE DYES\DYEING EFFLUENTS\ULTRAVIOLET\NANOFILTRATION\REUSE	SOIL PROTECTION HAS BEEN RECENTLY IINCLUDED AS ONE OF THE PRIOR OBJECTIVES FOR UE ENVIRONMENTAL POLICY (PROPOSAL FOR DIRECTIVE, COM (2006), 232 FINAL), WHICH DEFINES CONTAMINATION AMONG MAJOR HAZARDS. DIFFUSE CONTAMINATION IS DIFFICULT TO CONTROL DUE TO ITS UBIQUITY AND REQUIRES PRECISE STUDIES AND METHODOLOGIES TO PREVENT THE DISPERSION OF CONTAMINATS IN THE SOIL-WATER SYSTEM.THE APLICATION OF RESIDUES FROM CATTLE TO SOIL REPRESENTS ONE SOURCE OF DIFFUSE CONTAMINATION, BEING THE VETERINAN TREATMENTS EMERGENT CONTAMINANTS TOWARDS SOIL AND WATER.THEREFORE, THE PRESENT PROJECT AIMS TO - STUDY THE FATE OF VETERINARIAN TREATMENTS (OXIBENDAZOLE, DORAMECTINE, CU AND ZN) IN THE SOIL-WATER SYSTEM- EVALUATE THE CAPACITY OF NATURAL ATTENUATION IN SOIL RECEIVING RESIDUES FROM CATTLE: IDENTIFY BIOMARKERS FOR THE ORGANIC CONTAMINANTS- DESIGN SAW BIOSENSORS FOR MONITORING THE ORGANIC CONTAMINATS IN WATER DURING REMEDIATION OF WASTEWATERS FROM SHAMBLES- ESTABLISH THE STRATEGIES FOR THE MANAGEMENT OF RESIDUES FROM CATTLE, STUYING THE EFFECT OF VETERINARIAN TREATMENT INPUT THROUGH THE APPLICATION OF SLURRY, THERMALLY DRIED SLURRY AND COMPOSTED SEWAGE	LOBO BEDMAR	Mª CARMEN		INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	INSTITUTO MADRILEÑO DE INVEST. Y DESARROLLO RURAL, AGRARIO Y ALIMENTARIO	01-10-07	31-12-10	MINECO	Spain
CTM2007-66306-C02-01		EVALUATION OF DIFFUSSE IMPUT, DUE TO VETERINARY TREATMENTS, IN SOIL-WATER SYSTEM. NATUAL ATENUATION STRATEGIES	CONTAMINATION\SOIL\WATER\VETERINARIAN RESIDUES\BIOREMEDIATION	SOIL PROTECTION HAS BEEN RECENTLY IINCLUDED AS ONE OF THE PRIOR OBJECTIVES FOR UE ENVIRONMENTAL POLICY (PROPOSAL FOR DIRECTIVE, COM (2006), 232 FINAL), WHICH DEFINES CONTAMINATION AMONG MAJOR HAZARDS. DIFFUSE CONTAMINATION IS DIFFICULT TO CONTROL DUE TO ITS UBIQUITY AND REQUIRES PRECISE STUDIES AND METHODOLOGIES TO PREVENT THE DISPERSION OF CONTAMINATS IN THE SOIL-WATER SYSTEM. THE APLICATION OF RESIDUES FROM CATTLE TO SOIL REPRESENTS ONE SOURCE OF DIFFUSE CONTAMINATION, BEING THE VETERINAN TREATMENTS EMERGENT CONTAMINANTS TOWARDS SOIL AND WATER. THEREFORE, THE PRESENT PROJECT AIMS TO - STUDY THE FATE OF VETERINARIAN TREATMENTS (OXIBENDAZOLE, DORAMECTINE, CU AND ZN) IN THE SOIL-WATER SYSTEM - EVALUATE THE CAPACITY OF NATURAL ATTENUATION IN SOIL RECEIVING RESIDUES FROM CATTLE: IDENTIFY BIOMARKERS FOR THE ORGANIC CONTAMINANTS - DESIGN SAW BIOSENSORS FOR MONITORING THE ORGANIC CONTAMINATS IN WATER DURING REMEDIATION OF WASTEWATERS FROM SHAMBLES - ESTABLISH THE STRATEGIES FOR THE MANAGEMENT OF RESIDUES FROM CATTLE, STUYING THE EFFECT OF VETERINARIAN TREATMENT INPUT THROUGH THE APPLICATION OF SLURRY, THERMALLY DRIED SLURRY AND COMPOSTED SEWAGE SLUDGE FROM THE WASTEWATER	MARTIN FERNANDEZ	MARGARITA		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. BIOQUIMICA Y BIOLOGIA MOLECULAR IV	FACULTAD DE VETERINARIA	01-10-07	31-12-10	MINECO	Spain
CTM2007-66216		MEMBRANE BIORREACTORS DEVELOPMENT FOR PHENOLIC¿BASE WASTEWATER TREATMENT. STUDY OF THE REACTION AND TRANSFER STEPS	OXIBENDAZOLE\AVERMECTINS\SOIL\WATER\DECONTAMINATION\BIOSENSOR	MEMBRANE BIOREACTORS (MBR) PRESENT SEVERAL POSSIBLE ADVANTAGES IN WASTEWATER TREATMENT BECAUSE SETTLING TANK CAN BE AVOIDED AND A BETTER EFFLUENT QUALITY IS ACHIEVED. WHEN TREATING WITH INDUSTRIAL WASTEWATERS, THIS ALTERNATIVE REQUIRES IMPORTANT DEVELOPMENTS MAINLY IN RELATION WITH THE MAINTENANCE OF THE RATE OF FILTRATION THROUGH THE MEMBRANE, AND AN ADEQUATE BALANCE OF NUTRIENTS AND TOXICS IN THE BIOREACTION ZONE. IN THIS PROJECT, THE BIODEGRADATION OF A PHENOL ALKYL DERIVATIVE LIQUID WASTE COMING FROM IMPORTANT INDUSTRIAL PROCESSES, WILL BE STUDIED IN THE LABORATORY SCALE IN A CONTINUOUS MBR AND IN A SEQUENTIAL MEMBRANE BIOREACTOR (SMBR) WITH PROCESS FILTRATION, DIFFERENTIAL IN THE ANOXIC AND THE THE OXIC STEP. BECAUSE OF THE FLUIDYNAMICS AND IMPORTANCE FOR THE SCALE-UP, THE FILTRATION PROCESS WILL BE STUDIED SPECIFICALLY IN AN EXISTING 4 M HIGH WATER TREATMENT PILOT PLANT, WHERE THE FILTRATION SYSTEM WILL BE PROVIDED, LOOKING FOR THE EFFECT OF FLOW RATES AND THE VARIATIONS IN THE BEHAVIOUR WITH THE FILTER HEIGHT. BESIDES THE ANALYSIS OF THE GLOBAL OPERATION OF BIODEGRADATION/FILTRATION, WE WILL TRY ALSO TO TEST, AT LEAST INITIALLY, THREE OPERATION PROCESS WITH SOME PROMISING ASPECTS: (I)	GUTIERREZ LAVIN	ANTONIO		UNIVERSIDAD DE OVIEDO	DPTO. INGENIERIA QUIMICA Y TECNOLOGIA DEL MEDIO AMBIENTE	FACULTAD DE QUIMICA	01-10-07	31-03-11	MINECO	Spain

CTM2007-62436		ECOLOGICAL RISK ASSESSMENT OF PESTICIDES IN NATURAL AND EXPLOITED INVERTEBRATE COMMUNITIES IN THE EBRO DELTA AND AREAS OF INFLUENCE. SCIENTIFIC BASIS FOR THEIR ENVIRONMENTAL MANAGEMENT.	EFFLUENTS\TEXTILE\MEMBRANES\OPTIMIZATION\RECOVERY\WATER REUSE	EXISTING METHODS TO ASSESS THE ENVIRONMENTAL RISK OF CONTAMINANT SUBSTANCES, ARE FAR FROM REALITY, DUE TO THE DIFFICULTY IN ESTABLISHING RELIABLE EXPOSURE LEVELS IN FIELD ORGANISMS, THE USE OF FIXED BIOLOGICAL RESPONSES IN LABORATORY WITH A LIMITED NUMBER OF SPECIES, AND THEIR INABILITY TO INCLUDE EFFECTS AT THE COMMUNITY LEVEL. FOR THESE REASONS THERE IS AN URGENT NEED TO DEVELOPING FIELD METHODS. THIS PROBLEM IS ENHANCED WHEN PESTICIDES ARE CONSIDERED, DUE TO THEIR POTENTIAL TOXICITY AND THEIR COMPLEX ENVIRONMENTAL BEHAVIOUR. THIS PROJECT AIMS TO DEVELOP AN INTEGRATED FIELD MONITORING SYSTEM TO ASSESS ENVIRONMENTAL RISKS OF PESTICIDES IN THE EBRO DELTA AND ITS ZONE OF INFLUENCE CONSIDERING THE BIOAVAILABILITY AND TOXICITY OF THE MAIN CONTAMINANT SOURCES AND THEIR EFFECTS ON THE INVERTEBRATE COMMUNITIES INHABITING THEIR HABITATS. IN RELATION TO THIS IT IS PROPOSED TO USE A MULTIDISCIPLINARY APPROACH INCLUDING: A STUDY OF THE LEVELS OF CONTAMINANTS IN WATER, PARTICULAR MATTER AND SEDIMENT AS WELL AS IN KEY ANIMAL SPECIES OCCURRING ON THOSE HABITATS; THE ASSESSMENT OF SPECIFIC TOXIC RESPONSES, TOXIC EFFECTS RELATED WITH ECOLOGICAL FUNCTIONING AND CHANGES	RIVA JUAN	MARIA DEL CARMEN		UNIVERSITAT POLITECNICA DE CATALUNYA	INSTITUTO DE INVESTIGACION TEXTIL Y COOPERACION INDUSTRIAL DE TERRASSA (INTEXTER)	INSTITUTO DE INVESTIGACION TEXTIL Y COOPERACION INDUSTRIAL DE TERRASSA (INTEXTER)	01-10-07	30-09-10	MINECO	Spain
CTM2007-61958		PHOTOCATALYTIC DEGRADATION OF AQUEOUS POWER STATIONS EFFLUENTS USING ARTIFICIAL/SOLAR UV LIGHT	WATER RADIOACTIVITY\DRINKING WATER\WATER QUALITY	THE OBJECTIVE OF THE PROJECT IS TO IMPROVE THE QUALITY OF THE WATER EFFLUENTS COMING FROM THERMAL POWER STATIONS WITH THE PURPOSE OF FULFILLING FUTURE MORE DEMANDING NORMATIVE. THUS, THE HOMOGENEOUS PHOTOCATALYTIC PROCESS WILL BE OPTIMIZED (CONCENTRATION OF HYDROGEN PEROXIDE, CONCENTRATION OF FE AND CU SALTS, PH, ¿) TO REACH THE MAXIMUM AND QUICKER DESTRUCTION OF POLLUTANTS (CYANIDES, FORMATES, AMMONIUM, TOC, ¿). OPTIMIZATION IS BASED ON EXPERIMENTAL FACTORIAL DESIGN AND LATER FITTING OF RESPONSE FUNCTIONS WITH NEURAL NETWORKS. THE STUDY WILL BE MADE ON LAB AND PILOT PLANT SCALE. ALSO STUDIES WILL BE MADE APPLYING THE SOLAR ENERGY. THE FINAL OBJECTIVE IS TO STUDY THE POSSIBILITY OF FUTURE USE OF THESE TECHNIQUES TO SUBSTITUTE OR COMPLEMENT UV-PHOTOCATALYSIS. FOR THIS PURPOSE, A CIRCULAR FRESNEL LENS THAT CONCENTRATES THE SOLAR ENERGY IN A POINT WILL BE USED. IT IS AVAILABLE IN THE E.T.S. OF INDUSTRIAL ENGINEERS OF CIUDAD REAL, AND HAS ALREADY BEEN USED SUCCESSFULLY BY THIS GROUP IN THE DEGRADATION OF TEXTILE DYES. ALSO A CPC WILL BE EMPLOYED. FINALLY, AN INDUSTRIAL INSTALLATION FOR THE TREATMENT OF EFFLUENTS COMING FROM THERMAL POWER STATIONS WILL BE DESIGNED FROM THE ANALYSIS OF THE OBTAINED RESULTS.	DURAN SEGOVIA	ANTONIO		UNIVERSIDAD DE CASTILLA-LA MANCHA	ESCUELA TECNICA SUPERIOR DE INGENIEROS INDUSTRIALES	ESCUELA TECNICA SUPERIOR DE INGENIEROS INDUSTRIALES	01-10-07	30-09-10	MINECO	Spain
CTM2007-65544		ENVIRONMENTAL RISK ASSESSMENT AND COST-EFFECTIVENESS EVALUATION FOR THE PRODUCTION OF ENERGY CROPS GROWN UNDER IRRIGATION SYSTEMS USING WASTEWATER EFFLUENTS FROM SEWERAGE TREATMENT PLANTS	BIOREACTORS\MEMBRANES\PHENOLICS\OXIC/ANOXIC\REGENERATION\PILOT PLANT	SPAIN¿S DEPENDENCE ON EXTERNAL ENERGY HAS REACHED VERY HIGH LEVELS (APPROXIMATELY 80%).THIS FACT, TOGETHER WITH THE MANY FLUCTUATIONS AND DIFFICULTIES IN THE MARKET, MEANS THAT PRESENTLY THERE IS GREAT INTEREST IN THE PROMOTION OF ALTERNATIVES TO FOSSIL FUELS. BECAUSE OF THIS, AND FROM THE PERSPECTIVE OF THE KYOTO PROTOCOL, THE DESIRE TO FIND SOLUTIONS SUCH AS ENERGY CROPS, WHICH COMPLY WITH THE SUSTAINABILITY CRITERIA FOR CO2 EMISSIONS, IS CLEAR. THE CURRENT VIABILITY QUESTION OF BIOMASS PRODUCTION FOR ENERGY USE HAS COME ABOUT BECAUSE OF THE NEED FOR HIGH PRODUCTION LEVELS, ADEQUATE HANDLING, STORAGE AND CONTROL OF PRODUCTION, ALLOWING IT TO MEET THE RISING DEMAND. ONE MAJOR LIMITATION ON THIS ACTIVITY IS ITS WATER AND NUTRIENT CONSUMPTION NEEDED TO OBTAIN HIGH PRODUCTIVITY AND PRODUCTION CONTROL. ALL OF THIS, IN THE CONTEXT OF SPAIN AND ESPECIALLY THE MEDITERRANEAN BASIN, WITH SOME WATER EXPLOITATION RATES (ANNUAL CONSUMPTION/RESOURCES) GREATER THAN 20%, MAKING US A EUROPEAN COUNTRY WITH ONE OF THE GREATEST HYDRAULIC DEFICITS. I THESE LIMITATIONS CAN BE RESOLVED VERY EFFECTIVELY AND AT THE SAME TIME CREATE ADDITIONAL BENEFITS, IF THIS IRRIGATION IS DONE USING WASTEWATER EFFLUENTS FROM SEWERAGE TREATMENT PLANTS, AS WELL AS APPLYING HIGHLY EFFICIENT CULTIVATION TECHNIQUES, SUCH AS CROPS GROWN IN SAND UNDER PLASTIC, CHARACTERISTIC OF ALMERIAN AGRICULTURE. THE REUSE OF WASTEWATER EFFLUENTS FROM SEWERAGE TREATMENT	RODRIGUEZ FERNANDEZ	AMADEO		UNIVERSIDAD DE ALMERIA	DPTO. HIDROGEOLOGIA Y QUIMICA ANALITICA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-12-07	30-05-11	MINECO	Spain

CTM2008-04649		DEVELOPMENT OF SPECIFIC PROCEDURES FOR THE ASSESSMENT OF THE CHEMICAL AND THE ECOLOGICAL STATUS ON COASTAL WATER BODIES AFFECTED BY SUBMARINE OUTFALL DISCHARGES	WATER\QUALITY\DRINKIN WATER\TREATMENT\OXIDATION\MICR OPOLLUTANT\PESTICIDES	THE WATER FRAMEWORK DIRECTIVE (WFD) OBLIGATES TO ALL STATE MEMBERS TO PROTECT, AND RESTORE ALL SUPERFICIAL WATER BODIES IN ORDER TO ACHIEVE THE ¿GOOD STATE¿ BEFORE 2015, IMPLYING THIS CONCEPT THE EVALUATION OF BOTH THE CHEMICAL AND THE ECOLOGICAL STATE. IN ORDER TO ACHIEVE THIS, THE DIRECTIVE OBSERVE THE NECESSITY OF ESTABLISHING ¿OPERATIVE CONTROLS¿ IN THOSE WATER BODIES WHICH ARE UNDER RISK OF NO COMPLYING WITH THE ENVIRONMENTAL OBJECTIVES, SUCH AS THOSE AREAS WHICH ARE INFLUENCED BY THE WASTEWATER EFFLUENTS FROM SUBMARINE OUTFALLS. WITH THIS AIM, IT IS PROPOSED TO EVALUATE DIFFERENT WASTEWATER TREATMENT SYSTEMS COMBINING FUNCTIONAL (WITH AND WITHOUT WASTEWATER TREATMENT) AND ENVIRONMENTAL CHARACTERISTICS (EFFLUENT DEPTH, SUBSTRATE TYPE, ETC¿) IN ORDER TO CONTRAST DIFFERENT SCIENTIFIC HYPOTHESIS WHICH WILL ALLOW THE STANDARDISATION AND VALIDATION OF SPECIFIC PROTOCOLS FOR THE EVALUATION OF THE CHEMICAL AND ECOLOGICAL STATE OF WATER BODIES INFLUENCED BY WASTEWATER EFFLUENTS FROM SUBMARINE OUTFALLS.IN THIS WAY, THE PROJECT SPECIFIC OBJECTIVES ARE ENUNCIATED BELOW:1.DEVELOP A PROCEDURE TO DELIMIT THE AREA AFFECTED BY THE SUBMARINE OUTFALL EFFLUENT WHICH INTEGRATES THE	JUANES DE LA PEÑA	JOSE ANTONIO		UNIVERSIDAD DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	01-01-09	31-12-11	MINECO	Spain
CTM2008-06886-C02-02		REDUCTION OF WATER AND ENERGY CONSUMPTION FOR A SUSTAINABLE GRAPHIC PAPERS: REDUCTION OF ENERGY CONSUMPTION	DEVELOPMENT\ANALYTICAL METHODS\ESTROGENS\ALKYLPHENOLS \AQUEOUS SAMPLES\FISH BILE	THE SPANISH PAPER SECTOR HAS EXPERIENCED A CONTINUOUS GROWTH IN THE LAST YEARS, REACHING A PRODUCTION OF 6.353.300 TONS OF PAPERS IN 2006, WHAT IMPLIES AN INCREASE OF 11.5% WITH RESPECT TO THE PREVIOUS YEAR, WHEREAS IN NEIGHBOURING COUNTRIES THE PRODUCTION HAS REMAINED RELATIVELY CONSTANT. IN ADDITION, THE SPANISH PAPER SECTOR HOLDS A LEADING POSITION AT EUROPEAN LEVEL IN TERMS OF RECYCLED PAPER PRODUCTION. IN SPAIN, 84.5% OF THE RAW MATERIAL USED TO PRODUCE PAPER IS RECOVERED PAPER (84.5% UTILISATION RATE). DESPITE ALL THIS, THE PAPER SECTOR IS GOING THROUGH A SITUATION OF UNCERTAINTY RESULTING FROM THE LIMITING EFFECT OF TWO FACTORS: THE WATER STRESS AND THE ENERGY CRISIS. ON ONE HAND, THE FREQUENT DROUGHTS THAT THE COUNTRY SUFFERS AND THE INCREASE OF WATER PRICES HAVE VERY NEGATIVE REPERCUSSIONS ON THE PAPER INDUSTRY SINCE THIS SECTOR IS ESPECIALLY DEPENDENT ON WATER RESOURCES. ON THE OTHER SIDE, THE INCREASE OF ENERGY PRICES OF THE LAST YEARS AND THE INSTABILITY OF ENERGY MARKETS HAVE A VERY NEGATIVE IMPACT ON THE PROFITABILITY OF THE SECONDARY SECTOR AND BY EXTENSION, ON THE PAPER INDUSTRY. MOREOVER, THE NEW LEGISLATIVE FRAMEWORK THAT REGULATES THE PRODUCTION OF ALTERNATIVE ENERGIES AT NATIONAL LEVEL IS NOT ESPECIALLY FAVOURABLE TO THE PAPER SECTOR, SINCE RECOVERED PAPER, THE MAIN RAW MATERIAL OF THE SPANISH PAPER INDUSTRY, CAN ALSO BE USED AS THE FEEDSTOCK FOR THE PRODUCTION OF BIOFUELS. THE DIRECT COMPETITION OF THESE TWO USES	PELACH SERRA	MARIA ANGELS		UNIVERSITAT DE GIRONA	DPTO INGENIERIA QUIMICA AGRARIA Y TECN. AGROALIMENTARIA	ESCUELA POLITECNICA SUPERIOR	01-01-09	30-06-12	MINECO	Spain
CTM2008-06877-C02-02		HYBRID PROCESSES FOR UPGRADING EXISTING WWTP FOR NUTRIENT REMOVAL: MOVING BED AND FLAT MEMBRANES	PAPER TECHNOLOGY\WATER RECLAMATION\ULTRAFILTRATION\REV ERSE OSMOSIS\ADVANCED TREATMENTS	DUE TO A RESOLUTION FROM JULY 2006, IN SPAIN,ZONES DESIGNATED AS SENSITIVE TO EUTROPHISATION HAVE BEEN INCREASED FROM 5M P.E. TO 25M P.E., OF WHICH THE NUTRIENT REQUIREMENTS MUST BE MET WITHIN THE NEW PLAN 2007-2015. BIOFILM PROCESSES SUITS PERFECT TO UPGRADING WWTP SINCE THE REQUIRED VOLUME CAN BE REDUCED AND THEY CAN WORK WITH HIGH BIOMASS CONCENTRATIONS WITHOUT PRODUCING BULKING. FIXED AND MOVING BED PROCESSES WITHOUT USING SLUDGE RECYCLE HAVE BEEN IMPLEMENTED IN NEW PLANTS. HOWEVER, THEY SHOW SIGNIFICANT LIMITATIONS WHEN APPLIED TO UPGRADING EXISTING ACTIVATED SLUDGE PROCESSES. THAT IS WHY HYBRID PROCESSES ARE ACQUIRING INCREASING RELEVANCE. PLASTIC MEDIA ARE ADDED TO THE EXISTING REACTORS SO THAT BIOMASS IN BIOFILM AND IN SUSPENSION COEXISTS. CONSEQUENTLY, EXHAUSTIVE FURTHER RESEARCH STUDIES ARE REQUIRED. RESEARCH STUDIES WITH BIOFILMS ATTACHED TO MEMBRANES FOR NUTRIENT REMOVAL HAVE BEEN CARRIED OUT IN RECENT YEARS. HOWEVER, THE EVENTUAL APPLICATIONS OF HYBRID PROCESSES ARE UNKNOWN. MATHEMATICAL MODELLING HAS BEEN PROVED TO BE A POWERFUL TOOL TO OPTIMISE THE DESIGN AND OPERATION OF ACTIVATED SLUDGE PROCESSES AND THE SAME WILL OCCUR FOR COMPLEX HYBRID PROCESSES. THE ULTIMATE GOAL OF THE PROJECT IS TO GENERATE KNOWLEDGE AND EVALUATE, THROUGH EXPERIMENTAL TESTS AND MODELLING, THE POTENTIAL OF A VARIETY OF HYBRID PROCESSES INCLUDING FIXED AND MOVING BED AND MEMBRANES, IN ORDER TO ACHIEVE NITRIFICATION, DENITRIFICATION AND PHOSPHORUS REMOVAL IN A VARIETY OF CONFIGURATIONS AIMED AT UPGRADING	LARREA URCOLA	LUIS		CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	01-01-09	31-12-11	MINECO	Spain

CTM2008-06847-C02-02		EVALUATION OF THE EFFICACY OF THE SEWAGE TREATMENT PLANTS IN THE ELIMINATION OF EMERGING ORGANIC COMPOUNDS FROM WASTEWATERS IN ORDER TO REUSE THEM	BIOLOGICAL TREATMENTS\BIOFILMS\MEMBRANES\ WASTEWATER\NUTRIENTS REMOVAL\UPGRADING WWTP\MODELING\HYBRID PROCESSES	THE MAIN OBJECTIVE OF THE PRESENT PROJECT IS TO EVALUATE THE EFFICACY OF SEWAGE TREATMENT PLANTS (STPS) WITH DIFFERENT DESIGNS TO ELIMINATE PHARMACEUTICAL AND PERSONAL CARE PRODUCTS (PPCPS), ALL OF THEM INCLUDED IN THE SO-CALLED EMERGING ORGANIC CONTAMINANTS. IT IS ALSO AN OBJECTIVE TO EVALUATE THEIR PRESENCE IN SURFACE WATERS, AS A CONSEQUENCE OF THE EMISSION OF THE TREATED WATERS FROM STPS. THE IMPACT OF THE STPS IN THE SURROUNDING AIR AND ALSO THE PRESENCE OF PERSONAL CARE PRODUCTS IN AIR FROM WORKING AREAS WILL BE ALSO EVALUATED. TO THESE AIMS, MULTI-RESIDUE ANALYTICAL METHODS WILL BE DEVELOPED TO DETERMINE THESE COMPOUNDS AT TRACE LEVELS BY USING HIGHLY POWERFUL TECHNIQUES SUCH AS GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) AND LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY (LC-MS-MS). AS PRETREATMENT TECHNIQUES, SOLID-PHASE EXTRACTION AND MEMBRANE-LIQUID EXTRACTION WILL BE USED FOR WATER SAMPLES WHEREAS PRESSURIZED LIQUID EXTRACTION (PLE) WILL BE FOR SLUDGE SAMPLES. TO ANALYSE AIR SAMPLES, A NEW DESIGN OF MICRO-GC, WHICH WILL ENABLE VOLATILE ORGANIC COMPOUNDS (VOCS) IN AIR FROM STPS TO BE DETERMINED IN SITU, WILL BE DEVELOPED, AND IT WILL ALSO BE COMPARED WITH COMMON METHODS. STPS EVALUATED MAINLY DIFFER IN THE TERTIARY	SALVADO MARTIN	VICTORIA		UNIVERSITAT DE GIRONA	DPTO. QUIMICA	FACULTAD DE CIENCIAS	01-01-09	31-03-12	MINECO	Spain
CTM2008-02453		RECOVERY OF AQUEOUS EFFLUENTS FROM PHARMACEUTICAL INDUSTRY BY MEANS OF INNOVATIVE COMBINED CATALYTIC TECHNOLOGIES: ADVANCED OXIDATION PROCESSES AND BIOLOGICAL TREATMENT	ADVANCED OXIDATION\INDUSTRIAL EFLUENTS\REACTOR\MEMBRANE\REFRACTORY COMPOUND	OVER THE PAST FEW YEARS NUMEROUS DRUGS AND THEIR METABOLITES HAVE BEEN IDENTIFIED IN WASTEWATERS, RIVERS AND SEDIMENTS. ONE WAY TO REDUCE THE PRESENCE OF THESE CONTAMINANTS IN THE ENVIRONMENT IS THROUGH THE "IN-SITU" TREATMENT OF THE WASTEWATER FROM THE PLANT. THE WIDE RANGE OF PRODUCTS THAT ARE PRODUCED IN PLANTS, THE COMPLEXITY OF THE MOLECULES AND THEIR RESISTANCE TO BIOLOGICAL DEGRADATION, REQUIRES THE USE OF ADVANCED OXIDATION METHODS. THE DEVELOPMENT OF NEW CATALYTIC OXIDATION TECHNOLOGIES FOR THE REMOVAL OF THESE COMPOUNDS AT THE POINT OF ORIGIN IS THUS HIGHLY INTERESTING THE MAIN OBJECTIVE OF THIS PROJECT IS TO STUDY THE IMPROVEMENT OF THE ADVANCED OXIDATION PROCESSES (AOPS) FENTON AND OZONATION FOR THE TREATMENT OF WASTEWATER FROM THE PHARMACEUTICAL INDUSTRY AND IMPROVING THE EFFECTIVENESS AND COST OF THE TREATMENT BY COMBINING THEM WITH A BIOLOGICAL TREATMENT . THE IMPROVEMENTS TO BE INTRODUCED IN THIS STUDY ARE BASED ON THE DESIGN OF NEW CATALYSTS TO BE IMPLEMENTED IN THESE PROCESSES TO ENHANCE ITS PERFORMANCE, EVEN ALLOWING FOR THE REUSE OF WATER IN THE SAME INDUSTRY. THE MAIN OBJECTIVES OF THIS PROJECT ARE AS FOLLOWS: A) IN THE PRE-TREATMENT CHEMICAL OXIDATION PROCESS: 1. STUDY THE FEASIBILITY OF THE CATALYTIC ¿IN-SITU¿ GENERATION OF HYDROGEN PEROXIDE FOR ITS APPLICATION IN AOPS FOR WASTEWATER TREATMENT. 2. DEVELOPMENT OF NEW CATALYTIC MATERIALS FOR	CONTRERAS IGLESIAS	SANDRA		UNIVERSIDAD ROVIRA I VIRGILI	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	01-01-09	30-06-12	MINECO	Spain
CTM2008-03455		ACID MINE DRAINAGE: STUDY OF THE SECONDARY PRODUCTS AND THEIR ADSORPTION AND STABILIZATION PROCESSES	POLLUTION\NANOMATERIALS\WATER\ TOXICITY\ANALISIS\TREATMENT	DEPENDING ON INITIAL AND ENVIROMENTAL CONDITIONS WHERE THE ACID MINE DRAINAGE ARE LOCATED, VERY DIFFERENT SECONDARY PRODUCTS, ARE GENERATED. AMONG THESE PRODUCTS SULPHATE COMPLEXES, HYDROXISULPHATE AND OXYHYDROXIDES MIXTURES CAN BE FOUND, IN WHICH SOME SPECIES TRANSFORM IN OTHERS DUE TO DIFFERENT GEOCHEMICAL REACTIONS SUCH AS DEHIDRATION PROCESSES UNTIL EVAPORITIC CONDITIONS ARE FINALLY REACHED. MANY OF THE LESS SOLUBLE COMPOUNDS, INITIALLY PRECIPITATED, PRESENT LOW ORDER DEGREE, HIGH SURFACE REACTIVITY AND, FREQUENTLY, A POSITIVE SURFACE CHARGE THAT CONFERES THEM HIGH ANION AND METAL RETENTION CAPACITY. THESE PROPERTIES CONTRIBUTE TO IMPROVE THE ENVIRONMENTAL CONDITIONS OF THE ECOSYSTEMS WHERE SUCH PROCESSES TAKE PLACE AND SOME OF THEM ARE DUE TO THE FORMATION OF LOW SOLUBILITY, VERY REACTIVE SECONDARY FE COMPOUNDS THAT SHOW A GREAT TENDENCY TO CRYSTALLIZATION AND LEAD, IN MOST OF THE CASES, TO THE FORMATION OF MINERALS SUCH AS JAROSITE, SCHWERTMANNITE, FERRIHYDRITE AND GOETHITE. THE CONDITIONS UNDER WHICH THESE MINERALS ARE FORMED ARE QUITE WELL DEFINED WHEREAS THE KNOWLEDGE OF THE BUFFERING SYSTEMS OPERATION AND THE FACTORS THAT CAUSE DELAY IN THE CRYSTALLIZATION PROCESS AND FAVOUR THE ADSORPTION OF HEAVY METALS AND ANIONS SUCH AS ARSENATE,	FIOL LOPEZ	SARAH		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. QUIMICA FISICA	FACULTAD DE QUIMICA	01-01-09	31-12-11	MINECO	Spain

CTM2008-04940		ADVANCED OXIDATION PROCESSES FOR ELIMINATION OF PESTICIDES IN NATURAL WATERS		THE PROTECTION AND CONSERVATION OF THE NATURAL RESOURCES CONSTITUTES NOWADAYS ONE OF THE PRINCIPAL SOCIAL WORRIES. AMONG THIS NATURAL RESOURCE, THE WATER EMPHASIZES AS A VALUED AND SCANTY PROPERTY, WHICH IT BECOMES NECESSARY A SUITABLE USE AND RECYCLING. THIS WAY, THE LEGAL REGULATIONS IMPOSE CRITERIA INCREASINGLY STRICT TO ACHIEVE A MAJOR AND BETTER PURIFICATION OF THE WATERS. THE OPERATIONS OF TREATMENT, ACTUALLY IMPLANTED IN THE PLANTS OF WATER TREATMENT, LIKE INVERSE OSMOSIS OR COAL ACTIVATED ADSORPTION ARE PROCESSES THAT OBTAIN A DILUTED FRACTION AND ANOTHER VERY CONCENTRATED IN THE POLLUTANT, THOUGH THEY DO NOT DEGRADE IT. THESE OPERATIONS SEEM NOT TO BE EFFECTIVE TO OBTAIN WATERS WITH A MINIMUM CONTAINED IN THE NOT BIODEGRADABLE POLLUTANTS LIKE PESTICIDES, PHENOLS, CHLORATE DISSOLVERS, ANTIBIOTIC, ETC. FOR IT, THERE TURN OUT TO BE NECESSARY OTHER STAGES OF TREATMENT THAT ACHIEVE THIS AIM. IN THIS RESPECT, THE ADVANCED OXIDATION PROCESSES (AOPS) CAN BECOME IN THE NEAR FUTURE IN ONE OF THE MOST USED TECHNOLOGICAL RESOURCES IN THE CONTAMINATED WATERS TREATMENT. ESPECIALLY FOR THE CASE OF WATERS CONTAMINATED WITH ORGANIC COMPOUNDS THAT ARE NOT TREATABLE BY MEANS OF CONVENTIONAL TECHNOLOGIES DUE TO HIS HIGH CHEMICAL STABILITY AND / OR LOW BIODEGRADABLE. A KEY PIECE IN THE INTEGRAL AND SUSTAINABLE MANAGEMENT OF THE WATER IS TO OBTAIN A SUITABLE QUALITY OF THE CONSUMPTION WATERS, AS REPORT OF	QUIROGA ALONSO	JOSE MARIA		UNIVERSIDAD DE CADIZ	OPTO. INGENIERIA QUIMICA, TEC.ALIMENTOS Y TEC.MEDIO AMBIENTE	OPTO. INGENIERIA QUIMICA, TEC.ALIMENTOS Y TEC.MEDIO AMBIENTE	01-01-09	31-12-11	MINECO	Spain
CTM2008-06676-C05-03		MICROBIAL COMMUNITIES IN CONSTRUCTED WETLANDS FOR WASTEWATER TREATMENT AND THEIR ROLE IN BACTERIA AND POLLUTANTS REMOVAL	CONSTRUCTED WETLAND\PRIORITY POLLUTANTS\EMERGING CONTAMINANTS\BIODEGRADATION\ADSORPTION\BIOFILM\RIZOSPHERE	KNOWLEDGE OF BIOLOGICAL COMMUNITIES AND THEIR PROCESSES IS ESSENTIAL FOR THE UNDERSTANDING OF WASTEWATER TREATMENT PLANTS AND THE DEVELOPMENT OF SANITARY ENGINEERING. THE OBJECTIVE OF THIS PROJECT IS TO IDENTIFY AND QUANTIFY THE BIOLOGICAL COMMUNITIES PRESENT IN CONSTRUCTED WETLANDS FOR WASTEWATER TREATMENT, SPECIALLY WITH REGARDS THEIR ROLE IN BACTERIA AND POLLUTANTS REMOVAL. SPECIFIC OBJECTIVES OF THE PROJECT ARE THE FOLLOWING: 1- TO IDENTIFY THE MICROBIAL COMMUNITIES (BACTERIA, PROTOZOA AND METAZOA) AND THEIR RELATIONSHIPS WITH PLANT CONFIGURATION AND DESIGN, 2- TO DETERMINE THE ROLE OF VEGETATION IN THESE PROCESES AND THEIR EFFECT ON THE MICROBIAL POPULATIONS OF THE RIZOSPHERE. 3- TO EVALUATE THE RELATIONSHIPS BETWEEN MICROBIAL COMMUNITIES AND THE REMOVAL OF BACTERIA AND CHEMICAL POLLUTANTS, 4- TO STUDY THE TEMPORAL VARIABILITY IN CONSTRUCTED WETLANDS MICROBIAL COMMUNITIES THROUGHTOUT THE STABILIZATION PROCESS AND THEIR POTENTIAL CLOGGING, AND THE INFLUENCE OF SEASONALITY ON THESE COMMUNITIES.	BECARES MANTECON	ELOY		UNIVERSIDAD DE LEON	FACULTAD DE CIENCIAS BIOLOGICAS Y AMBIENTALES	FACULTAD DE CIENCIAS BIOLOGICAS Y AMBIENTALES	01-01-09	31-12-11	MINECO	Spain
CTM2008-05986		ADVANCED BIOLOGICAL PROCESSES WITH SUSPENDED AND GRANULAR BIOMASS FOR THE TREATMENT OF ORGANIC MATTER AND NITROGEN PRESENT IN WASTEWATERS HIGHLY GENERATED IN SPAIN		THIS PROJECT IS FOCUSSED ON THE STUDY OF BIOLOGICAL PROCESSES CAPABLE TO MANAGE THE EXCESS OF ORGANIC MATTER AND NITROGEN PRESENT IN SEVERAL INDUSTRIAL WASTEWATERS HIGHLY GENERATED IN SPAIN IN A VERY SUSTAINABLE WAY. THE RESULTS OBTAINED IN THIS WORK WILL PROBABLY LEAD TO A REDUCTION OF ELECTRICAL AND CHEMICAL REQUIREMENTS, AND THE SLUDGE PRODUCED IN A VERY COMPACT DIGESTERS. WITH THIS IN MIND, THE BIOLOGICAL ORGANIC MATTER AND/OR NITROGEN REMOVAL FROM SEVERAL WASTEWATERS IN A SEQUENCING BATCH REACTOR (SBR) WITH BOTH SUSPENDED AND GRANULAR BIOMASS WILL BE STUDIED AND COMPARED. THE TREATMENT OF WINE PRODUCTION WASTEWATER IN A GRANULAR SBR WILL BE ANALYSED IN AN INITIAL PERIOD. THIS WASTEWATER IS CHARACTERISED BY A HIGH COD CONCENTRATION AND A STRONG SEASONAL DEPENDENCY. SINCE SPAIN IS THE SECOND MAJOR WINE PRODUCER IN THE WORLD (15% OF THE WORLD WINE PRODUCTION), THE ADVANTAGES RELATED TO THE STUDIED PROCESS WILL BE ESPECIALLY INTERESTING IN OUR COUNTRY. MOREOVER, THE BIOLOGICAL NITROGEN REMOVAL IN A SBR WITH SUSPENDED AND GRANULAR SLUDGE WILL BE STUDIED FOR THE TREATMENT OF SUPERNATANTS FROM ANAEROBIC DIGESTION OF SEWAGE SLUDGE AND PIG SLURRY. NAMELY, THE BIOLOGICAL NITROGEN REMOVAL VIA NITRITE AND THE	MATA ALVAREZ	JOAN		UNIVERSIDAD DE BARCELONA	VICERRECTORADO DE INVESTIGACION	VICERRECTORADO DE INVESTIGACION	01-01-09	31-12-11	MINECO	Spain

CTM2008-06847-C02-01		EVALUATION OF THE EFFICACY OF THE SEWAGE TREATMENT PLANTS IN THE ELIMINATION OF EMERGING ORGANIC COMPOUNDS FROM WATER IN ORDER TO REUSE IT	SEWAGE\EMERGING ORGANIC COMPOUNDS\SEWAGE TREATMENT PLANTS\ANALYSIS\RECLAIMED WATERS	THE MAIN OBJECTIVE OF THE PRESENT PROJECT IS TO EVALUATE THE EFFICACY OF SEWAGE TREATMENT PLANTS (STPS) WITH DIFFERENT DESIGNS TO ELIMINATE PHARMACEUTICAL AND PERSONAL CARE PRODUCTS (PPCPS), ALL OF THEM INCLUDED IN THE SO-CALLED EMERGING ORGANIC CONTAMINANTS. IT IS ALSO AN OBJECTIVE TO EVALUATE THEIR PRESENCE IN SURFACE WATERS, AS A CONSEQUENCE OF THE EMISSION OF THE TREATED WATERS FROM STPS. THE IMPACT OF THE STPS IN THE SURROUNDING AIR AND ALSO THE PRESENCE OF PERSONAL CARE PRODUCTS IN AIR FROM WORKING AREAS WILL BE ALSO EVALUATED. TO THESE AIMS, MULTI-RESIDUE ANALYTICAL METHODS WILL BE DEVELOPED TO DETERMINE THESE COMPOUNDS AT TRACE LEVELS BY USING HIGHLY POWERFUL TECHNIQUES SUCH AS GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS) AND LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY (LC-MS-MS). AS PRETREATMENT TECHNIQUES, SOLID-PHASE EXTRACTION AND MEMBRANE-LIQUID EXTRACTION WILL BE USED FOR WATER SAMPLES WHEREAS PRESSURIZED LIQUID EXTRACTION (PLE) WILL BE FOR SLUDGE SAMPLES. TO ANALYSE AIR SAMPLES, A NEW DESIGN OF MICRO-GC, WHICH WILL ENABLE VOLATILE ORGANIC COMPOUNDS IN AIR FROM STPS TO BE DETERMINED IN SITU, WILL BE DEVELOPED, AND IT WILL ALSO BE COMPARED WITH COMMON METHODS. STPS EVALUATED MAINLY DIFFER IN THE TERTIARY	MARCE RECASENS	ROSA MARIA		UNIVERSIDAD ROVIRA I VIRGILI	DPTO. QUÍMICA ANALITICA I QUÍMICA ORGÁNICA	FACULTAD DE QUIMICA	01-01-09	30-06-12	MINECO	Spain
CTM2008-06886-C02-01		REDUCTION OF THE WATER AND ENERGY CONSUMPTION FOR THE SUSTAINABLE PRODUCTION OF GRAPHIC PAPERS: REDUCTION OF WATER CONSUMPTION	ENERGY CONSUMPTION\DISINTEGRATION\REFINING\UPGRADING\RECYCLED FIBRES	THE SPANISH PAPER SECTOR HAS EXPERIENCED A CONTINUOUS GROWTH IN THE LAST YEARS, REACHING A PRODUCTION OF 6.353.300 TONS OF PAPERS IN 2006, WHAT IMPLIES AN INCREASE OF 11.5% WITH RESPECT TO THE PREVIOUS YEAR, WHEREAS IN NEIGHBOURING COUNTRIES THE PRODUCTION HAS REMAINED RELATIVELY CONSTANT. IN ADDITION, THE SPANISH PAPER SECTOR HOLDS A LEADING POSITION AT EUROPEAN LEVEL IN TERMS OF RECYCLED PAPER PRODUCTION. IN SPAIN, 84.5% OF THE RAW MATERIAL USED TO PRODUCE PAPER IS RECOVERED PAPER (84.5% UTILISATION RATE). DESPITE ALL THIS, THE PAPER SECTOR IS GOING THROUGH A SITUATION OF UNCERTAINTY RESULTING FROM THE LIMITING EFFECT OF TWO FACTORS: THE WATER STRESS AND THE ENERGY CRISIS. ON ONE HAND, THE FREQUENT DROUGHTS THAT THE COUNTRY SUFFERS AND THE INCREASE OF WATER PRICES HAVE VERY NEGATIVE REPERCUSSIONS ON THE PAPER INDUSTRY SINCE THIS SECTOR IS ESPECIALLY DEPENDENT ON WATER RESOURCES. ON THE OTHER SIDE, THE INCREASE OF ENERGY PRICES OF THE LAST YEARS AND THE INSTABILITY OF ENERGY MARKETS HAVE A VERY NEGATIVE IMPACT ON THE PROFITABILITY OF THE SECONDARY SECTOR AND BY EXTENSION, ON THE PAPER INDUSTRY. MOREOVER, THE NEW LEGISLATIVE FRAMEWORK THAT REGULATES THE PRODUCTION OF ALTERNATIVE ENERGIES AT NATIONAL LEVEL IS NOT ESPECIALLY FAVOURABLE TO THE PAPER SECTOR, SINCE RECOVERED PAPER, THE MAIN RAW MATERIAL OF THE SPANISH PAPER INDUSTRY, CAN ALSO BE	BLANCO SUAREZ	ANGELES		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS QUIMICAS	01-01-09	31-12-11	MINECO	Spain
CTM2008-04239		NANOPARTICLES AND WATER QUALITY	COASTAL SANITATIONS\URBAN DISCHARGES\WATER FRAMEWORK DIRECTIVE\OPERATIONOL CONTROL\PHYTOPLANCTON\MACROALGAE\INVERTEBRATES\BIOACCUMULATION\ENVIRONMENTAL RISK	THE CURRENT MARKET OF NANOMATERIALS IS RELATIVELY SMALL BUT RAPIDLY GROWING. IN THE UNITED STATES THE PREDICTED SALES SHOULD INCREASE FROM $ 1 BILLION IN 2005 TO $1 TRILLION IN 2015. THE PRODUCTION OF FULLERENES, FOR EXAMPLE, SHOWS FIGURES OF HUNDREDS OF TONS. THERE ARE AN INCREASING NUMBER OF THOSE WHO BELIEVE THAT THE SECOND INDUSTRIAL REVOLUTION IS EMERGING FROM OF NANOTECHNOLOGY AND THE DEVELOPMENT OF NANOMATERIALS. THE ENVIRONMENTAL AND HEALTH RISKS OF NANOTECHNOLOGY AND NANOMATERIALS ARE STILL NOT WELL KNOWN, AND EVEN LESS IN WATER THAN IN THE AIR. THE REASON IS THE LACK OF DATA ON THE EVALUATION, BEHAVIOUR AND TRANSFORMATION OF THESE MATERIALS. IT IS NECESSARY, NOW THAT IS STILL TIME, TO CARRY OUT EXTENSIVE RESEARCH WORK TO DETERMINE THE RISKS OF NANOMATERIALS AND THE USE OF NANOTECHNOLOGY. THE KNOWLEDGE OF THE ENVIRONMENTAL BEHAVIOUR OF THESE SUBSTANCES WILL ALLOW TO FIND WAYS TO REDUCE THESE RISKS. EVEN THOUGH THE LARGEST AMOUNT OF AVAILABLE INFORMATION REFERS TO AIR POLLUTION, THE CURRENT AND FUTURE USES OF NANOTECHNOLOGY ARE EXPECTED TO PRODUCE A GREATER IMPACT ON THE AQUATIC ENVIRONMENT. FOR EXAMPLE, AN INVENTORY PERFORMED IN THE UNITED STATES IN MARCH 2006, INDICATES THAT THE NANOPRODUCTS CURRENTLY USED AMOUNT TO 212, OF WHOM MORE THAN HALF ARE PHARMACEUTICAL AND PERSONAL CARE PRODUCTS, WHOSE RESIDUALS HAVE WATER AS THEIR FINAL DESTINATION. MOREOVER, FORTY-	GARCIA CALVO	ELOY		UNIVERSIDAD DE ALCALA	DPTO. QUIMICA ANALITICA E INGENIERIA QUIMICA	FACULTAD DE QUIMICA	01-01-09	31-12-13	MINECO	Spain

CTM2008-01876		APPLICATION OF ADVANCED OXIDATION PROCESSES IN WASTEWATER RECLAMATION	WASTEWATER\PHARMACEUTICALS\CARBON MATERIALS\ELECTROCHEMICAL TECHNIQUES\ADVANCED PURIFICATION	THE URBAN WASTEWATERS TREATED BY WASTEWATER TREATMENT PLANTS (WWTPS) HAVE TO BE SUBMITTED TO WASTEWATER RECLAMATION PROCESS IN ORDER TO BE ABLE TO BE REUSED. THE POLLUTION PRESENTS IN THE TREATED WASTEWATERS HAS TO BE REMOVED BY MEANS OF THE WASTEWATER RECLAMATION PROCESS, OBSERVING THE CURRENT SPANISH LAW (RD 1620/2007, RELATED TO REGULATION OF REUSED WASTEWATERS). IN GENERAL, ANY TREATMENT SHOULD BE CAPABLE TO REMOVE PATHOGENS, TURBIDITY, SUSPENSION SOLIDS AND HAZARDOUS COMPOUNDS BEFORE THE WATER REUSE AND FOR ANY PREDICTED USE IN ORDER TO OBSERVE THE CURRENT ENVIRONMENTAL QUALITY NORMS. SEVERAL ADVANCED OXIDATION PROCESSES HAVE BEEN APPLIED TO TREATMENT BOTH WASTEWATERS AND DRINKING WATER BECAUSE OF THE RESEARCH CARRIED OUT DURING THE LAST YEARS BY OUR RESEARCH GROUP. THIS INVESTIGATION IS INCLUDED IN THE FOLLOWING RESEARCH PROJECTS: PHYSICOCHEMICAL TREATMENTS FOR WINERY WASTEWATERS: REAL SCALE TREATMENT AND APPLICATION OF FENTON PROCESS (CICYT REN 2000-1410); DRINKING WATER PRODUCTION BY ADVANCED OXIDATION TECHNOLOGIES IN EBRO RIVER BASIN (CTM2005-04585/TECNO). THE RESULTS OBTAINED WERE EXCELLENT IN DISINFECTION, REMOVAL OF HAZARDOUS RECALCITRANT AND BIOACCUMULABLE COMPOUNDS AND ELIMINATION OF NON-DANGEROUS ORGANIC MATTER, ENHANCING THE BIODEGRADABILITY OF TREATED WASTEWATERS AND MINIMIZING ALWAYS THE PRODUCTION OF POTENTIALLY CARCINOGENIC SUB-PRODUCTS, SUCH AS TRIHALOMETANES.	ORMAD MELERO	Mª PEÑA		UNIVERSIDAD DE ZARAGOZA	CENTRO POLITECNICO SUPERIOR DE INGENIEROS	CENTRO POLITECNICO SUPERIOR DE INGENIEROS	01-01-09	30-06-12	MINECO	Spain
CTM2009-10520		EXCHANGE OF WATER MASSES AND POTENTIAL ENERGY BETWEEN THE ESTUARY OF THE GUADALQUIVIR AND THE INNER CONTINENTAL SHELF	CORK\LEONARDITE\BIOSORBENTS\ADSORPTION\WATER POLLUTION\PESTICIDES\PHYTOSANITARIES\ORGANIC COMPOUNDS\PHYTOSANITARY CONTAINERS\PLE	THE ANDALUSIEN ESTUARIES ARE ALMOST COLLAPSED, OVEREXPLOTED BY AGRICULTURE AND URBAN DEVELOPMENT. MOST OF THE TIDAL WATERS FLOW THROUGH THE MAIN CHANNEL AND THEY BELONG TO THE GROUP OF PARTIALLY MIXED ESTAURIES. SEVERAL SOCIAL CONFLICTS OCCUR DURING THE LAST YEARS IN THE ESTUARY OF THE RIVER GUADALQUIVIR, RELATED TO THE ENHANCEMENT OF TURBIDITY AND SALINITY PEAKS LASTING OVER TEN MONTHS. SO FAR THERE ARE NOT MODELS WHICH CAN HELP TO FORECAST WHEN,HOW AND FOR HOW LONG THE NEXT EPISODE WILL OCCUR. THIS PROJECT IS DEVOTED TO THE DEVELOPMENT OF THREE MODELS FOR EVALUATING THE RESIDUAL CIRCULATION (SUBTIDAL FREQUENCY) AND THE WATER MASS AND POTENTIAL ENERGY EXCHANGE BETWEEN THE ESTUARY AND THE INNER CONTINETAL SHELF, FORCED BY ASTRONOMICAL TIDE, RIVER DISCHARGE, ATMOSPHERIC ACTIONS AND DENSITY GRADIENTS. CURRENTS ALONG THE CONTINENTAL SLOPE AND GENERATED BY OCEANIC DENSITY GRADIENTS WILL BE NEGLECTED. THE MODELS WILL COVER THREE REGIONS: ESTUARY, MOUTH AND INNER CONTINENTAL SHELF WHERE THE BUOYANCY PLUME EVOLVES. THE FIRST MODEL IS A BOX MODEL FOR THE ANALYSIS OF THE TIDAL PROPAGATION INCLUDING THE REFLECTION (MODULE AND PHASE) OF EACH TIDAL COMPONENT. FURTHERMORE, THE SALT AND SEDIMENT SUSPENSION BUDGET EQUATIONS WILL BE SOLVED AT THE SUBTIDAL	LOSADA RODRIGUEZ	MIGUEL ANGEL		UNIVERSIDAD DE GRANADA	E.T.S. DE INGENIEROS DE CAMINOS, CANALES Y PUERTOS	E.T.S. DE INGENIEROS DE CAMINOS, CANALES Y PUERTOS	01-01-10	31-07-13	MINECO	Spain
CTM2009-11929-C02-02		MICROBIAL PROCESSES IN MEMBRANE BIORREACTOR WITH MOVING BED FOR MUNICIPAL WASTEWATER	MEMBRANE\ULTRAFILTRATION\CHARACTERIZATION\FOULING\CLEANING\OPTIMIZATION\MODELING\REUSE\TEXTIL\WASTEWATER	URBAN WASTEWATER IS USUALLY TREATED BY CONVENTIONAL ACTIVATED SLUDGE PROCESSES FOR ORGANIC MATTER REMOVAL, HOWEVER, TECHNICAL AND SOCIAL DEVELOPMENT NEED NEW TECHNOLOGIES MORE EFFICIENT RESPECT TO NUTRIENT REMOVAL AND OBTAINING EFFLUENTS WITH ENOUGH QUALITY FOR DIRECT RECLAMATION. IN THIS SENSE, ACTIVATED SLUDGE PROCESS COMBINED WITH MEMBRANE TECHNOLOGY (ULTRAFILTRATION), ACTUALLY USED FOR WASTEWATER RECLAMATION, IS BEING LIKE ON EMERGENT SYSTEM THAT CAN AVOID THE PROBLEMS OF THE CONVENTIONAL ACTIVATED SLUDGE PROCESS. SUBMERGED MEMBRANE BIORREACTOR IS A COMPACT SYSTEM WITH SMALLER NECESSITIES OF SPACE, IMPROVING THE YIELDS, MAINLY IN NITROGEN AND PATHOGEN REMOVAL, WILL BE A EVOLUTION INCLUDE A MOVING BED IN THE MEMBRANE BIOREACTOR. IN THE PRESENT PROJECT WILL BE PERFORMED A NEW TECHNOLOGY, BIOFILM MEMBRANE BIOREACTOR (BF-MBR) AND WILL BE STUDIED THE INFLUENCE OF THE BIOMASS CONCENTRATION AND TEMPERATURE IN THE TREATED WASTEWATER AND THE EFFECTS OF THE MOVING BED ON THE MEMBRANE FOULING. MOREOVER WILL BE STUDIED THE BIOFILM FORMATION ON DIFFERENT SUPPORT MATERIALS (MOVING BED) AND THE BIOFILM FORMATION (MEMBRANE BIOFOULING) ON THE ULTRAFILTRATION MEMBRANES	GONZALEZ LOPEZ	JESUS		UNIVERSIDAD DE GRANADA	INSTITUTO DEL AGUA	INSTITUTO DEL AGUA	01-01-10	31-07-13	MINECO	Spain

CTM2009-14742-C02-02		INTEGRATED CONTROL STRATEGIES FOR BMR OPERATION	SPECIATION\TOXICITY\AGNES\HEAVY METALS\MODELLING\NATURAL WATERS\ZNO NANOPARTICLES	DESIGN OF KNOWLEDGE-BASED METHODS FOR DATA TREATMENT IN ORDER TO TRANSFORM DATA INTO RELIABLE INFORMATION. DEVELOPMENT OF MODEL BASED CONTROL STRATEGIES FOR OPTIMICING NUTRIENT REMOVAL IN ADVANCED BIOLOGICAL SYSTEMS. DEVELOPMENT OF CONTROL STRATEGIES BASED IN EMPIRICAL RULES IMPLEMENTED FROM EXPERIMENTAL WORK FOR THE OPERATION OF MEMBRANES IN BMR. INTEGRATION OF EQUIPMENT ENERGY CONSUMPTION AS ADDITIONAL COST FUNCTION FOR DESIGNING OPTIMIZATION AND CONTROL RULES. DEVELOPMENT AND DESIGN OF INTEGRATED CONTROL PROCEDURES FOR MBR OPERATION AS COMPLETE TREATMENT INTEGRATING BIOLOGICAL PROCESS AND MEMBRANE OPERATION. EVALUATION OF ALTERNATIVE DISINFECTION PROCEDURES FOR WATER REUSE.	SANCHO SEUMA	LUIS		CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	01-01-10	31-12-12	MINECO	Spain
CTM2009-13048		FOULING CHARACTERIZATION IN ULTRAFILTRATION MEMBRANES AND CLEANING PROTOCOLS OPTIMIZATION TO REUSE INDUSTRIAL WASTEWATERS AND PROCESS EFFLUENTS IN TEXTILE INDUSTRY	PHYTOREMEDIATION\HEAVY METALS\POLYCYCLIC AROMATIC HYDROCARBONS\COMPOST\BIOSOLIDS	THE GROWING INCREASE IN WATER DEMAND HAS ENHANCED THE IMPLEMENTATION OF MEMBRANE PROCESSES AT AN INDUSTRIAL SCALE; ESPECIALLY IN THOSE CASES IN WHICH EFFLUENTS REUSE IS TAKEN INTO ACCOUNT. PARTICULARLY, IN THE TEXTILE INDUSTRY, CONSIDERED AS ONE OF THE MOST WATER CONSUMING ONE, A GREAT VARIETY OF PROCESSES DRIVING TO WATER POLLUTION ARE CARRIED OUT. THE DIFFERENT CHARACTERISTICS OF THE GENERATED EFFLUENTS ARE TO BE HIGHLIGHTED. IT DRIVES US TO THINK THAT WE ARE APPROACHING A COMPLEX PROBLEM. ITS SOLUTION (OPTIMIZATION OF THESE EFFLUENTS TREATMENT AND REUSE) IS OF PARAMOUNT IMPORTANCE. THE APPLYING RESEARCH GROUP WORKS ON MANAGEMENT OF INDUSTRIAL EFFLUENTS FROM 8 YEARS AGO: ¿TEXTILE WASTEWATER REUSE. STUDY OF THE EFFLUENTS DISCHARGE PROBLEM¿; (GV01-141,2001/03), ¿INTEGRATED MANAGEMENT OF THE TEXTILE INDUSTRY EFFLUENTS WITH HIGH SALT CONCENTRATION BY MEANS OF NANOFILTRATION AND REVERSE OSMOSIS PROCESS¿. (CTM 2004-03130/TECNO); OPTIMIZATION OF THE EFFLUENTS TREATMENT FROM DIFFERENT PROCESSES BY MEANS OF MEMBRANE TECHNOLOGIES FOR AUXILIARY MATTERS RECYCLING AND WATER REUSE (CTM 2007-64451, 2007/08). IN THESE PROJECTS GOOD RESULTS RELATED TO THE TECHNICAL FEASIBILITY OF THIS TREATMENT WERE ACHIEVED. A FINAL EFFLUENT WITH A COD LOWER THAN 100 MG/L AND A CONDUCTIVITY VALUE RANGING BETWEEN 0,4 AND 1 MS/CM WAS OBTAINED. HOWEVER, THE	ALCAINA MIRANDA	Mª ISABEL		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	01-01-10	31-12-13	MINECO	Spain
CTM2009-11206		ESTABLISHMENT OF AN EVALUATION CRITERIA TO ASSESS VULNERABILITY OF WATER MASSES AFFECTED BY URBAN AND INDUSTRIAL SPILLS	WASTEWATER\TERTIARY TREATMENT\MICROALGAE\BOTRYOCOCCUS BRAUNII\CARBON DIOXIDE REMOVAL\HYDROCARBONS\LIPIDS	BY YEAR 2005 THE SUBMARINE OUTFALLS & ENVIRONMENTAL HYDRAULICS RESEARCH GROUP BEGAN THE PROJECT ¿DEVELOPMENT OF AN ENVIRONMENTAL RISK ASSESSMENT MODEL RELATED TO SEWER SYSTEMS IN COASTAL AREAS IN COMBINED SEWER SYSTEM¿ (RIMA CMT2005-00659) UNDER THE NATIONAL I+D+I PLAN. THIS PROJECT HAS BEEN CENTRED ON THE DEVELOPMENT OF AN ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY, WHICH ALLOWS TO ANALYZE THE IMPORTANCE OF SPILLS ON WATER BODIES QUALITY. EVEN THOUGH THE OBTAINED RESULTS HAVE EXCEEDED THE INITIAL OBJECTIVES AND EXPECTATIONS, THROUGH ITS DEVELOPMENT, THERE HAVE BEEN DETECTED SOME NEEDS THAT WERE NOT CONTEMPLATED IN THE ABOVE PROJECT. THIS NEW RESEARCH LINES, THAT CONSTITUTE THE PRINCIPAL OBJECTIVES OF THE PROJECT REQUESTED NOW, ARE FOCUSED ON THE VALIDATION OF THE DEVELOPED METHODOLOGICAL TOOLS FOR RISK ASSESSMENT, AND BASICALLY, ON THE IN SITU VERIFICATION OF THE COHERENCE OF SUCH EVALUATION THROUGH THE DIRECT OBSERVATION OF THE EFFECTS OF URBAN AND INDUSTRIAL SPILLS ON THE MARINE ENVIRONMENT. WITH THIS AIM, LAST YEAR WE APPLIED FOR A RESEARCH PROJECT, (WHICH SHARES THE NAME WITH THE PRESENT ONE ¿ESTABLISHMENT OF AN EVALUATION CRITERIA TO ASSESS VULNERABILITY OF WATER MASSES AFFECTED BY URBAN AND INDUSTRIAL SPILLS¿ WITH REFERENCE CTM 2008-03800/TECNO), THAT WAS APPROBED AS A TRANSITIONAL	REVILLA CORTEZON	JOSE ANTONIO		UNIVERSIDAD DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	01-01-10	31-12-12	MINECO	Spain

CTM2009-14553		PRODUCTION OF BIOPOLYMS USING MIXED CULTURES TREATING BREWERY WASTEWATER	HEAVY METALS\TRACE ELEMENTS\HCHS\CONTAMINATED SOILS\BACTERIAL ENDOPHYTES AND EPIPHYTES\RHIZOBACTERIA\PHYTOSTABILIZATION\PHYTOEXTRACTION\RHIZOREMEDIATION	IN LAST YEARS, WASTEWATER TREATMENT PROCESSES HAVE BEEN FOCUSSED NOT ONLY IN WATER DEPURATION, BUT ALSO IN OBTAINING SOME BENEFIT. THUS, IT IS LOOKED FOR RELEASING CONTAMINATION FROM THE WATER AND PRODUCING SOME VALUABLE PRODUCT AS BIOPLASTICS AS EXAMPLE POLYHYDROXYALKANOATES (PHA). THE AIM OF THIS PROJECT IS THE OPTIMIZATION OF POLYHYDROXYALKANOATES PRODUCTION USING MIXED CULTURES AND BREWERY WASTEWATER AS SUBSTRATE. PHA PRODUCTION PROCESS REQUIRE TWO STEPS: WASTEWATER FERMENTATION TO OBTAIN VOLATILE FATTY ACIDS (VFA) WHICH WILL BE USED AS SUBSTRATE IN AEROBIC PHA PRODUCTION. OPTIMIZATION OF BOTH STAGES WILL BE NEEDED. INFLUENCE OF ORGANIC LOADING RATE (OLR), INFLUENT CONCENTRATION, TEMPERATURE AND REACTOR CONFIGURATION (CONTINUOUS REACTORS AND SEQUENCING BATCH REACTORS) ON VFA, OBTAINING HYDROGEN AS BY-PRODUCT (USEFUL AS COMBUSTIBLE), WILL BE STUDIED DURING ACIDOGENIC FERMENTATION. IN AEROBIC STAGE, EFFECT OF TEMPERATURE, OLR, SOLIDS RETENTION TIME (SRT) AND OPERATION STRATEGY WILL BE STUDIED IN ORDER TO IMPROVE PHA STORAGE YIELD AND PRODUCTIVITY. AS AGV PROPORTIONS OBTAINED IN THE FIRST AFFECTS TO FINAL COPOLYMER COMPOSITION AND ITS PHYSICAL AND MECHANICAL PROPERTIES, CHARACTHERIZATION OF PHA OBTAINED WITH DIFFERENT	VEIGA BARBAZAN	Mª DEL CARMEN		UNIVERSIDADE DA CORUÑA	DPTO. DE QUIMICA FISICA E INGENIERIA QUIMICA I	FACULTAD DE CIENCIAS	01-01-10	31-12-12	MINECO	Spain
CTM2009-08649		APLICATION OF PHOTOCATALYTIC AND ADSORPTION PROCESSES FOR THE TREATMENT OF WASTE WATERS CONTAINING METALLIC SPECIES	SUSCEPTIBILITY\WATER BODIES\WATER QUALITY\URBAN DISCHARGES\INDUSTRIAL DISCHARGE	THE HIGH TOXICITY, EVEN AT VERY LOW CONCENTRATIONS OF MERCURY, CADMIUM, LEAD AND NICKEL HAS LEAD BOTH NATIONAL AND INTERNATIONAL LEGISLATIONS TO ESTABLISH VERY RESTRICTIVE LIMITS FOR CONCENTRATIONS ALLOWED FOR THOSE HEAVY METALS IN WATERS. THOSE METALS AND THEIR COMPOUNDS ARE DEFINED AS PRIORITY SUBSTANCES IN THE 2000/60/CE AND 2008/105/CE DIRECTIVES THROUGH DECISION NO 2455/2001/CE. IN MOST CASES, THE METHODS GENERALLY USED IN INDUSTRY FOR REMOVING HEAVY METALS IN WASTEWATER SHOW LOW EFFICIENCY TO ACHIEVE THE LOW LEVELS NOWDAYS REQUIRED. FOR THAT REASON, MANY STUDIES ARE DEVOTED TO DEVELOP NEW ALTERNATIVE TECHNIQUES ABLE TO SATISFACTORY ACCOMPLISH THE DECONTAMINATION OF WATER POLLUTED BY HEAVY METALS. IN THIS CONTEXT, THE MAIN OBJECTIVE OF THE PRESENT PROJECT IS TO INVESTIGATE THE FEASIBILITY OF APPLYING BOTH ADSORPTION PROCESSES USING SOLID WITH HIGH RETENTION ABILITY, AS MESOSTRUCTURED SILICA MATERIALS FUNCTIONALIZED WITH QUELATING GROUPS, AND HETEROGENEOUS PHOTOCATALYSIS TO EFFECTIVELY REMOVE MERCURY, CADMIUM, LEAD AND NICKEL AND THEIR COMPOUNDS IN WATER. ON THE BASIS OF THE GOOD ABILITY SHOWN BY SILICA MATERIALS FUNCTIONALIZED WITH PROPYLTHIOL GROUPS AS ADSORBENTS FOR REMOVING INORGANIC MERCURY, THE PRESENT PROPOSAL	LOPEZ MUÑOZ	MARIA JOSE		UNIVERSIDAD REY JUAN CARLOS	DPTO. TECNOLOGIA QUIMICA Y AMBIENTAL	ESCUELA SUPERIOR DE CIENCIAS EXPERIMENTALES Y TECNOLOGIA	01-01-10	31-12-12	MINECO	Spain
CTM2009-14576-C02-02		IMPLEMENTATION OF PLANT-BACTERIAL ASSOCIATIONS IN DIFFERENT PHYTOREMEDIATION STRATEGIES	WASTEWATER TREATMENT\MEMBRANE BIOREACTOR\INTEGRATED CONTROL\DECISION SUPPORT SYSTEM\REUSE\FOULING\DISINFECTION	AN INCREASINGLY INDUSTRIALISED SOCIETY HAS LED TO THE WIDESPREAD INTRODUCTION OF TRACE METALS AND ORGANIC POLLUTANTS INTO OUR ENVIRONMENT, CAUSING ACUTE AND DIFFUSE CONTAMINATION OF SOIL. THE LAST TWO DECADES HAVE SEEN THE EMERGENCE OF ECO-FRIENDLY, GENTLE SOIL REMEDIATION TECHNIQUES KNOWN AS PHYTOREMEDIATION. THIS PROJECT FOCUSES ON THREE PHYTOREMEDIATION TECHNOLOGIES: PHYTOEXTRACTION AND PHYTOSTABILISATION OF SOILS CONTAMINATED BY METALS, AND RHIZOREMEDIATION OF SOILS CONTAMINATED WITH XENOBIOTICS (HYDROPHOBIC ORGANOCHLORINES). IN ALL THREE PROCESSES THE MOBILITY AND BIOAVAILABILITY OF CONTAMINANTS IN THE SOIL, PARTICULARLY AT THE ROOT-SOIL INTERFACE (OR RHIZOSPHERE) WHERE UPTAKE, EXCLUSION OR CONTAMINANT DEGRADATION TAKES PLACE, IS A CRITICAL FACTOR AFFECTING THEIR OUTCOME AND SUCCESS. THE LAST FEW YEARS HAS BEEN WITNESS TO A SURGE IN STUDIES FOCUSING ON THE USE OF PLANT-MICROBIAL ASSOCIATIONS TO INCREASE OR DECREASE METAL ACCUMULATION BY PLANTS, OR ENHANCE BIODEGRADATION OF ORGANIC COMPOUNDS. ON ONE HAND, PLANT-ASSOCIATED MICROORGANISMS CAN ENHANCE PLANT ESTABLISHMENT AND GROWTH UNDER STRESS CONDITIONS (PLANT GROWTH PROMOTING BACTERIA, PGPB). ADDITIONALLY, SUCH MICROORGANISMS CAN MODIFY CONTAMINANT BIOAVAILABILITY. DEVELOPING NEW METHODS TO EITHER ENHANCE (FOR	MONTERROSO MARTIN	M CARMEN		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. EDAFOLOGIA Y QUIMICA AGRICOLA	FACULTAD DE BIOLOGIA	01-01-10	31-12-12	MINECO	Spain

CTM2009-14576-C02-01		IMPLEMENTATION OF PLANT-BACTERIAL ASSOCIATIONS IN DIFFERENT PHYTOREMEDIATION STRATEGIES	HEAVY METALS\TRACE ELEMENTS\HCHS\CONTAMINATED SOILS\BACTERIAL ENDOPHYTES AND EPIPHYTES\RHIZOBACTERIA\PHYTOSTABILIZATION\PHYTOEXTRACTION\RHIZOREMEDIATION	AN INCREASINGLY INDUSTRIALISED SOCIETY HAS LED TO THE WIDESPREAD INTRODUCTION OF TRACE METALS AND ORGANIC POLLUTANTS INTO OUR ENVIRONMENT, CAUSING ACUTE AND DIFFUSE CONTAMINATION OF SOIL. THE LAST TWO DECADES HAVE SEEN THE EMERGENCE OF ECO-FRIENDLY, GENTLE SOIL REMEDIATION TECHNIQUES KNOWN AS PHYTOREMEDIATION. THIS PROJECT FOCUSES ON THREE PHYTOREMEDIATION TECHNOLOGIES: PHYTOEXTRACTION AND PHYTOSTABILISATION OF SOILS CONTAMINATED BY METALS, AND RHIZOREMEDIATION OF SOILS CONTAMINATED WITH XENOBIOTICS (HYDROPHOBIC ORGANOCHLORINES). IN ALL THREE PROCESSES THE MOBILITY AND BIOAVAILABILITY OF CONTAMINANTS IN THE SOIL, PARTICULARLY AT THE ROOT-SOIL INTERFACE (OR RHIZOSPHERE) WHERE UPTAKE, EXCLUSION OR CONTAMINANT DEGRADATION TAKES PLACE, IS A CRITICAL FACTOR AFFECTING THEIR OUTCOME AND SUCCESS. THE LAST FEW YEARS HAS BEEN WITNESS TO A SURGE IN STUDIES FOCUSING ON THE USE OF PLANT-MICROBIAL ASSOCIATIONS TO INCREASE OR DECREASE METAL ACCUMULATION BY PLANTS, OR ENHANCE BIODEGRADATION OF ORGANIC COMPOUNDS. ON ONE HAND, PLANT-ASSOCIATED MICROORGANISMS CAN ENHANCE PLANT ESTABLISHMENT AND GROWTH UNDER STRESS CONDITIONS (PLANT GROWTH PROMOTING BACTERIA, PGPB). ADDITIONALLY, SUCH MICROORGANISMS CAN MODIFY CONTAMINANT BIOAVAILABILITY. DEVELOPING NEW METHODS TO EITHER ENHANCE (FOR	PRIETO FERNANDEZ	MARIA ANGELES		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE INVESTIGACIONES AGROBIOLOGICAS DE GALICIA (IIAG)	INSTITUTO DE INVESTIGACIONES AGROBIOLOGICAS DE GALICIA (IIAG)	01-01-10	31-12-12	MINECO	Spain
CTM2009-11929-C02-01		MEMBRANE BIORREACTOR WITH MOVING BED FOR MUNICIPAL WASTEWATER	BIODIVERSITY\BF-MBR\FILAMENTOUS BACTERIA\NITRIFYING BACTERIA\ARCHAEA\MEMBRANE FOULING	URBAN WASTEWATER IS USUALLY TREATED BY CONVENTIONAL ACTIVATED SLUDGE PROCESSES FOR ORGANIC MATTER REMOVAL, HOWEVER, TECHNICAL AND SOCIAL DEVELOPMENT NEED NEW TECHNOLOGIES MORE EFFICIENT RESPECT TO NUTRIENT REMOVAL AND OBTAINING EFFLUENTS WITH ENOUGH QUALITY FOR DIRECT RECLAMATION. IN THIS SENSE, ACTIVATED SLUDGE PROCESS COMBINED WITH MEMBRANE TECHNOLOGY (ULTRAFILTRATION), ACTUALLY USED FOR WASTEWATER RECLAMATION, IS BEING LIKE ON EMERGENT SYSTEM THAT CAN AVOID THE PROBLEMS OF THE CONVENTIONAL ACTIVATED SLUDGE PROCESS. SUBMERGED MEMBRANE BIORREACTOR IS A COMPACT SYSTEM WITH SMALLER NECESSITIES OF SPACE, IMPROVING THE YIELDS, MAINLY IN NITROGEN AND PATHOGEN REMOVAL, WILL BE A EVOLUTION INCLUDE A MOVING BED IN THE MEMBRANE BIOREACTOR. IN THE PRESENT PROJECT WILL BE PERFORMED A NEW TECHNOLOGY, BIOFILM MEMBRANE BIOREACTOR (BF-MBR) AND WILL BE STUDIED THE INFLUENCE OF THE BIOMASS CONCENTRATION AND TEMPERATURE IN THE TREATED WASTEWATER AND THE EFFECTS OF THE MOVING BED ON THE MEMBRANE FOULING. MOREOVER WILL BE STUDIED THE BIOFILM FORMATION ON DIFFERENT SUPPORT MATERIALS (MOVING BED) AND THE BIOFILM FORMATION (MEMBRANE BIOFOULING) ON THE ULTRAFILTRATION MEMBRANES	HONTORIA GARCIA	ERNESTO		UNIVERSIDAD DE GRANADA	DPTO. INGENIERIA CIVIL	E.T.S. DE INGENIEROS DE CAMINOS, CANALES Y PUERTOS	01-01-10	31-07-13	MINECO	Spain
CTM2009-13140-C02-01		CONTAMINATED SOIL REMEDIATION WITH AUTOCHTONOUS PLANT GROWN ON ECO-COMPATIBLE SUBSTRATES: EFFECT OF THESE MATERIEALS ON THE BIOAVAILABILITY AND BIODEGRADATION OF CONTAMINANTS	PHYTOREMEDIATION\COMPOST\BIOSOLIDS\HEAVY METALS\POLYCYCLIC AROMATIC HYDROCARBONS	IN SPITE OF THE FACT THAT SPAIN DOES NOT HAVE A VALIDATED INVENTORY OF CONTAMINATED SOILS, THE PROBLEM OF SOIL CONTAMINATION BY HEAVY METALS AND POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) IS EVIDENT. THE EUROPEAN ENVIRONMENTAL AGENCY (EEA) ESTIMATED BETWEEN 300.00 1.500.000 CONTAMINATED AREAS IN WESTERN EUROPE. THE NATIONAL PLAN FOR CONTAMINATED SOILS RECUPERATION POINTED TO 4.532 SITES AS POTENTIALLY CONTAMINATED. THE INTEREST FOR SOLVING A PROBLEM GENERATED BY ANTHROPOGENIC ACTIVITY IS OBVIOUS BASED ON THE INCREASING NUMBER OF SCIENTIFIC PUBLICATIONS AND TECHNIQUES DEALING WITH EACH OF THE CONTAMINANTS: HEAVY METALS, PARTICULARLY THE MOST TOXIC ONES (CD, PB, HG) AND ON THE OTHER HAND POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) AS A FAMILY OF CARCINOGENIC SUBSTANCES THAT CAN BE INCREASINGLY FOUND IN SOILS, AIR, WATER AND FOOD. IN A PREVIOUS PROJECT, THIS RESEARCH GROUP RECOMMENDED THE USE OF ECO-COMPATIBLE SUBSTRATES AS GROWTH MEDIA AND AS SOIL AMENDMENTS FOR CONTAMINATED SOILS. HOWEVER DEMAND FOR THIS TYPE OF SUBSTRATES IS LOW BECAUSE PROPER MANAGEMENT IS NOT COMPLETELY KNOWN (AMOUNT AND FREQUENCY OF IRRIGATION AND FERTILIZATION), AND DOSAGE EN THE CASE OF AMENDMENTS. FROM THE MATERIALS STUDIED AS ORGANIC AMENDMENTS FOR CONTAMINATED SOILS, SPENT MUSHROOM COMPOST, WHICH IS PRODUCED IN SPAIN IN LARGE VOLUMES SHOWED CHEMICAL AND BIOLOGICAL PROPERTIES ADEQUATE FOR	MASAGUER RODRIGUEZ	ALBERTO		UNIVERSIDAD POLITECNICA DE MADRID	DPTO. EDAFOLOGIA	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS	01-01-10	31-12-13	MINECO	Spain

CTM2009-11613		TERTIARY TREATMENT OF WASTEWATER, CARBON DIOXIDE REMOVAL AND PRODUCTION OF BIOFUELS USING MICROALGAE GENUS BOTRYOCOCCUS	WASTEWATER\MEMBRANE BIOREACTOR\BF-MBR\MEMBRANE FOULING\BIODIVERSITY	THE USE OF MICROALGAE IS AN ALTERNATIVE TOWARDS THE ELIMINATION OF CARBON DIOXIDE FROM INDUSTRIAL GAS EFFLUENTS. DETERMINED MICROALGAE HAVE THE CAPACITY TO ACCUMULATE HYDROCARBONS AND LIPIDS WHICH COULD BE USED FOR THE PRODUCTION OF BIOFUELS. URBAN WASTEWATERS, FROM CONVENTIONAL SECONDARY TREATMENT, ARE RICH IN NITROGEN, PHOSPHOROUS AND OTHER NUTRIENTS. THE ELIMINATION OF THESE COMPOSITE, IF IT TAKES PLACE (IN THE FEW CASES WHEN IT HAPPENS), IS CARRIED OUT BY MEANS OF TERTIARY TREATMENT. THIS PROJECT IS INTENDED TO DEVELOP AN ALTERNATIVE TERTIARY TREATMENT SYSTEM USING MICROALGAE BOTRYOCOCCUS BRAUNII (RACE A), IN WHICH WATER DEPURATION AND CARBON DIOXIDE IS SIMULTANEOUSLY REMOVED, AND HYDROCARBONS AND LIPIDS ARE PRODUCED FROM THE FORMED BIOMASS. SUBSEQUENTLY, THREE STAGES CAN BE DISTINGUISHED IN THE PROJECT: I.STUDY, AS FAR AS LABORATORY LEVEL, USING URBAN WASTEWATER FROM SECONDARY TREATMENT USING AN INSTALLATION WITH BATCH PHOTOBIOREACTORS. ANALYSIS OF THE EFFECT OF CARBON DIOXIDE CONCENTRATION IN THE ELIMINATION OF NITRATES AND PHOSPHATES IN WASTEWATER, AND PRODUCTIVITY OF BIOMASS, HYDROCARBONS AND LIPIDS IN DIFFERENT STAGES OF GROWTH. II.USING, AS SOURCE OF CARBON DIOXIDE, GASES FROM OLIVE POMACE DRYERS TO THE SELECTED CONCENTRATION IN THE PREVIOUS STAGE. INITIALLY, THIS STAGE WILL BE CARRIED OUT, AS FAR AS LABORATORY LEVEL, IN BATCH PHOTOBIOREACTORS WORKING WITH ARTIFICIAL	SANCHEZ VILLASCLARAS	SEBASTIAN		UNIVERSIDAD DE JAEN	OPTO. INGENIERIA QUIMICA, METALURGICA Y DE LOS MATERIALES	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-10	30-11-13	MINECO	Spain
CTM2009-14111-C02-01		MULTI-STRESSORS IN FLUVIAL ECOSYSTEMS	BIOPLASTICS\POLYHYDROXYALKANOATES\VOLATILE FATTY ACIDS\INDUSTRIAL WASTEWATER\ACIDOGENIC FERMENTATION\DYNAMIC AEROBIC CONDITIONS\SEQUENCING BATCH REACTORS\CONTINUOUS STIRRED TANK REACTORS\MICROBIOLOGY	HUMAN ACTIVITY IS RESPONSIBLE FOR THE ENTRANCE OF TOXIC SUBSTANCES TO AQUATIC ECOSYSTEMS. THESE SUBSTANCES ENTAIL A RISK FOR THE COMPONENTS OF THE ECOSYSTEM (TOXICOLOGICAL STRESS). AT PRESENT, THE ENVIRONMENTAL RISK ASSESSMENT OF THESE TOXIC COMPOUNDS IS BASED MOSTLY ON RESULTS OBTAINED UPON STANDARDIZED TOXICITY TESTS, HAVING LOW ECOLOGICAL RELEVANCE. NOW, IN ADDITION, AS A RESULT OF THE GLOBAL CHANGE, AQUATIC ECOSYSTEMS ARE UNDER STRONG ENVIRONMENTAL STRESS DUE TO CHANGES IN WATER FLOW, LIGHT REGIME, TEMPERATURE OR NUTRIENT CONCENTRATION. THUS, THIS PROJECT AIMS AT IMPROVING THE PREDICTION OF THE IMPACT OF TOXICANTS IN THE AQUATIC ECOSYSTEMS, CONSIDERING THE ROLE OF ENVIRONMENTAL STRESS ON THE EFFECTS OF TOXICANTS. THESE STUDIES WILL FOCUS ON BENTHIC ALGAL COMMUNITIES USING A MULTI-BIOMARKER APPROACH INCLUDING FUNCTIONAL AND STRUCTURAL ENDPOINTS: PHOTOSYNTHETIC PARAMETERS; ENZYMES OF OXIDATIVE STRESS; INDUCTION OF TOLERANCE TO CERTAIN TOXICS; PIGMENT COMPOSITION; BIOACCUMULATION AND TAXONOMY. WE WILL EVALUATE WHICH ONES ARE SPECIFIC OF THE EFFECTS CAUSED BY TOXICANTS (METALS AND HERBICIDES), AND HOW THE TOXIC EFFECTS ARE MODULATED BY ENVIRONMENTAL STRESS (WATER FLOW AND LIGHT REGIME). THE GENERAL MISSION IS TO PROVIDE A CONCEPTUAL BASE ALLOWING FOR THE EXTRAPOLATION OF RESULTS OBTAINED IN LABORATORY TESTS, TO THE NATURAL SYSTEMS. THE SPECIFIC OBJECTIVES OF THIS PROJECT ARE:	GUASCH PADRO	HELENA		UNIVERSITAT DE GIRONA	INSTITUTO DE ECOLOGIA ACUATICA	INSTITUTO DE ECOLOGIA ACUATICA	01-01-10	31-12-13	MINECO	Spain
CTM2009-14742-C02-01		COLMATAR+: FURTHER DEVELOPMENTS, IMPLEMENTATION AND VALIDATION AT DIFFERENT SCALES OF A DSS FOR MBR OPERATION AND CONTROL. FROM BASIC RESEARCH TO OPTIMAL OPERATION.	MBR\CONTROL STRATEGIES\NUTRIENT REMOVAL\FOULING\DATA ACQUISITION\WATER DISINFECTION	MEMBRANE TECHNOLOGY (MBR) IS CHALLENGING TRADITIONAL WASTEWATER TREATMENT SYSTEMS AND GAINING GROUND, BECAUSE IT PROVIDES AN EFFLUENT OF VERY HIGH QUALITY FOR WATER REUSE AND ALLOWS FOR IMPROVEMENT OF NEW OR EXISTING WASTEWATER TREATMENT SYSTEMS. ADAPTATION OR UPGRADING OF WASTEWATER TREATMENT PLANTS FOR IMPLEMENTATION OF NUTRIENT REMOVAL, MICROPOLLUTANTS REMOVAL OR WATER DISINFECTION ARE A MAJOR ISSUE IN THE PRIORITIES OF WASTEWATER MANAGEMENT. HOWEVER SOME DRAWBACKS STILL REMAIN AN ISSUE: FOULING, COSTS AND INTEGRATED OPERATION WITH BIOLOGICAL PROCESSES. THE AIM OF THE PROJECT IS TO CARRY OUT FURTHER RESEARCH RELATED TO THE OPEN QUESTIONS OF MBR AT LAB-SCALE, SEMI-INDUSTRIAL SCALE AND FULL-SCALE PLANTS TO EXTEND THE STATE OF THE ART IN TWO MAIN ASPECTS: I) FURTHER DEVELOPMENT OF KNOWLEDGE AND TECHNIQUES FOR A BETTER UNDERSTANDING OF THE MBR PROCESS OPERATION AND II) THEIR PRACTICAL APPLICATION, SPECIFICALLY OPTIMIZATION AND VALIDATION OF A DSS FOR THE INTEGRATED OPERATION AND REMOTE CONTROL OF MBRS FOR WASTEWATER TREATMENT AND REUSE. THE ULTIMATE GOAL IS THE DEVELOPMENT, IMPLEMENTATION AND VALIDATION AT DIFFERENT SCALES OF THE DATA ACQUISITION AND SYSTEM IDENTIFICATION MODULE, THE INTEGRATED CONTROL MODULE AND THE REASONING MODULE FOR THE	COMAS MATAS	JOAQUIM		UNIVERSITAT DE GIRONA	INSTITUTO DE MEDIO AMBIENTE	INSTITUTO DE MEDIO AMBIENTE	01-01-10	31-12-12	MINECO	Spain

CTM2009-13140-C02-02		CONTAMINATED SOIL REMEDIATION WITH AUTOCHTONOUS PLANT GROWN ON ECO-COMPATIBLE SUBSTRATES: EFFECT OF THESE MATERIALS ON THE BIOAVAILABILITY AND BIODEGRADATION OF CONTAMINANTS		IN SPITE OF THE FACT THAT SPAIN DOES NOT HAVE A VALIDATED INVENTORY OF CONTAMINATED SOILS, THE PROBLEM OF SOIL CONTAMINATION BY HEAVY METALS AND POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) IS EVIDENT. THE EUROPEAN ENVIRONMENTAL AGENCY (EEA) ESTIMATED BETWEEN 300.00 1.500.000 CONTAMINATED AREAS IN WESTERN EUROPE. THE NATIONAL PLAN FOR CONTAMINATED SOILS RECUPERATION POINTED TO 4.532 SITES AS POTENTIALLY CONTAMINATED. THE INTEREST FOR SOLVING A PROBLEM GENERATED BY ANTHROPOGENIC ACTIVITY IS OBVIOUS BASED ON THE INCREASING NUMBER OF SCIENTIFIC PUBLICATIONS AND TECHNIQUES DEALING WITH EACH OF THE CONTAMINANTS: HEAVY METALS, PARTICULARLY THE MOST TOXIC ONES (CD, PB, HG) AND ON THE OTHER HAND POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) AS A FAMILY OF CARCINOGENIC SUBSTANCES THAT CAN BE INCREASINGLY FOUND IN SOILS, AIR, WATER AND FOOD. IN A PREVIOUS PROJECT, THIS RESEARCH GROUP RECOMMENDED THE USE OF ECO-COMPATIBLE SUBSTRATES AS GROWTH MEDIA AND AS SOIL AMENDMENTS FOR CONTAMINATED SOILS. HOWEVER DEMAND FOR THIS TYPE OF SUBSTRATES IS LOW BECAUSE PROPER MANAGEMENT IS NOT COMPLETELY KNOWN (AMOUNT AND FREQUENCY OF IRRIGATION AND FERTILIZATION), AND DOSAGE EN THE CASE OF AMENDMENTS. FROM THE MATERIALS STUDIED AS ORGANIC AMENDMENTS FOR CONTAMINATED SOILS, SPENT MUSHROOM COMPOST, WHICH IS PRODUCED IN SPAIN IN LARGE VOLUMES SHOWED CHEMICAL AND BIOLOGICAL PROPERTIES ADEQUATE FOR	EYMAR ALONSO	ENRIQUE		UNIVERSIDAD AUTONOMA DE MADRID	OPTO. QUIMICA AGRICOLA, GEOLOGIA Y GEOQUIMICA	FACULTAD DE CIENCIAS	01-01-10	31-12-13	MINECO	Spain
CTM2010-15618		MEMBRANE-BASED CHEMICAL SEPARATION SYSTEMS FOR THE QUANTIFICATION OF BIOAVAILABLE METAL SPECIES, AND THEIR MICRO- AND NANO-FRACTIONS IN NATURAL WATERS		OUR RESEARCH GROUP IS ACTUALLY FINISHING A RESEARCH PROJECT (CTM2007-64678/TECNO) TO DEVELOPE DIFFERENT LIQUID MEMBRANE-BASED SYSTEMS FOR THE CHEMICAL SEPARATION OF METAL SPECIES IN NATURAL AND SEAWATER, WHICH HAS BEEN APPLIED TO THE DETERMINATION OF BOTH LABILE AND NON-LABILE METAL FRACTIONS IN REAL SAMPLES. IN THIS NEW PROJECT, WE PROPOSE DEVELOPING NEW SYSTEMS BASED ON MICROEXTRACTION THECNIQUES, MAINLY ON HOLLOW FIBER LIQUID MICROEXTRACTION, TO ESTABLISH THE CONCENTRATION LEVELS OF THE DIFFERENT METAL SPECIES IN NATURAL AND SEA WATERS. IN THIS CONTEXT, AND BY USING THE RESULTS OBTAINED IN THE PROJECT PREVIOUSLY DEVELOPED IN THE SAME FIELD, WE PROPOSE A NEW PROJECT WITH TWO MAIN OBJECTIVES. ON THE ONE HAND, HOLLOW FIBER LIQUID MICROEXTRACTION-BASED NEW SYSTEMS WILL BE DESIGNED AND OPTIMIZED. THEY WILL BE USED TO QUANTIFY LABILE AND NON-LABILE METAL SPECIES IN NATURAL AND SEAWATER, AND REACHING LOWER LIMITS OF DETECTION, IN THE RANGE OF NG L-1. ON THE OTHER HAND, WE PROPOSE USING MICROEXTRACTION AS A NEW AND INNOVATIVE TOOL TO ELUCIDATE THE METALLIC NANOPARTICLES CONTENTS IN THE TARGET WATERS. THUS, BY COMBINING BOTH PHYSICAL AND CHEMICAL FRACTIONATION, WE INTEND TO ADVANCE IN THE KNOWLEDGE OF THE DISSOLVED METAL SPECIES IN WATERS, ALLOWING INCREASING THE UNDERSTANDING OF	MORENO AGUILAR	CARLOS		UNIVERSIDAD DE CADIZ	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	01-01-11	31-12-13	MINECO	Spain
CTM2010-16611		IMPACT ASSESSMENT OF ANTROPOGENIC DISCHARGES FROM SEWAGE PLANTS, THROUGH RIVERS, INTO THE MEDITERRANEAN SEA IN A CLIMATE CHANGE CONTEXT		THE AIM OF THE DEPURAMAR PROJECT IS TO ESTABLISH THE RELATIONSHIP BETWEEN ANTHROPOGENIC DISCHARGES THROUGH RIVERS AND SEWAGE PLANTS, WITH ALTERATIONS AT SEVERAL BIOLOGICAL ORGANIZATION LEVELS (BIOCHEMICAL, HISTOLOGICAL AND PHYSIOLOGICAL) IN MARINE SPECIES INHABITING THE VICINITY OF SELECTED RIVER MOUTHS. TO THIS END, WE CHOSE A BROADLY DISTRIBUTED BENTHIC FISH SPECIES, PRESENT IN THE COAST BUT ALSO IN ESTUARIES, EASY TO HANDLE UNDER LABORATORY CONDITIONS, WHOSE BIOLOGY, PHYSIOLOGY AND REPRODUCTION IS WELL KNOWN AND, IN ADDITION, IT HAS AN INTEREST IN AQUACULTURE, SUCH IT IS THE SENEGAL SOLE, SOLEA SENEGALENSIS. THE PROJECT COMPRISES THREE PARTS OR APPROACHES: (A) A FIELD STUDY ON THE MEDITERRANEAN COAST UNDER THE ACTION OF ANTHROPOGENIC DISCHARGES AT A DIFFERENT DEGREE. IN THIS APPROACH, BIOLOGICAL RESPONSES WILL BE CONTRASTED WITH THE ORGANIC AND INORGANIC POLLUTANT LEVELS IN THE SEDIMENT. THE BIOLOGICAL RESPONSES CONSIDERED EMBRACE SEVERAL ASPECTS OF THE BIOCHEMISTRY AND PHYSIOLOGY OF THE SELECTED SENTINEL SPECIES AND THEY PROVIDE COMPLEMENTARY INFORMATION. THESE ARE: (1) BIOMARKERS OF EXPOSURE: ANTIOXIDANT ENZYME ACTIVITIES, MIXED FUNCTION OXIDASE ACTIVITIES (CYP1A1, CYP3A4), CARBOXYLESTERASES (CBES), CONJUGATING ENZYMES (GST, UDPGT), A NEUROTOXIC MARKER (ACHE) Y METALLOTHIONEINS (MT); (2) EFFECT BIOMARKERS: LIPID PEROXIDATION LEVELS (LP), HISTOLOGICAL DAMAGE; (3) ENDOCRINE DISRUPTION: STEROID HORMONE LEVELS AND VITELLOGENIN IN PLASMA AND (4) GENERAL STRESS	SOLE ROVIRA	MONTSERRAT		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	RECURSOS MARINOS RENOVABLES	INSTITUTO DE CIENCIAS DEL MAR (ICM)	01-01-11	31-12-13	MINECO	Spain

CTM2010-19197		CONSTRUCTED WETLANDS FOR THE TRATMENT OF LIVESTOCK AND AGROFFOD FACILITIES WASTEWATER	PERSISTENT ORGANIC POLLUTANTS\PHARMACEUTICALS\PERSONAL CARE PRODUCTS\HEAVY METALS\MSW\SEWAGE SLUDGE\SOIL\WATER\ECOTOXICITY TESTS\TRANSFER	THE RECENT RESEARCH ON WASTEWATER TREATMENT DEVELOPED DURING THE LAST DECADES HAS BEEN DIRECTED INTO SEVERAL LINES, AMONG THEM BEING THE R+D+I APPLIED TO TECHNOLOGIES ADAPTED TO THE USE IN SMALL COMMUNITIES AND SMALL INDUSTRIAL, LEISURE, CATTLE AND AGRICULTURE FACILITIES. AMONG THE BASIC RESEARCH LINES THE IMPLEMENTATION OF NATURAL WASTEWATER SYSTEMS HAS BEEN PARAMOUNT AND HAS BEEN DESCRIBED AS TO PRESENT SEVERAL ADVANTAGES, AMONG THEM THE ADAPTATION TO CHANGING FLOWS AND QUALITY, ITS LANDSCAPING VALUES AND THE CAPACITY TO INCLUDE FAUNA AND FLORA OF THE NEIGHBORING AREAS. UNTIL THE PRESENT DAY, I+D+I ON NATURAL WASTEWATER TREATMENT SYSTEMS HAS BEEN CENTERED ON THE APPLICATION TO DOMESTIC WASTEWATER, WITH MINOR EXCEPTIONS. FOR THIS REASON, TREATMENT METHODS BASED ON SAND FILTRATION (INFILTRATION-PERCOLATION), CONSTRUCTED WETLANDS OR LAGOONING HAVE BEEN APPLIED QUITE EXCLUSIVELY TO WASTEWATER FROM DOMESTIC ORIGIN OR WITH SIMILAR CHARACTERISTICS WITH A FEW EXCEPTIONS DEALING ON TREATMENT OF INDUSTRIAL OR AGROFOOD INDUSTRY, OR RUNOFF WATER. THE PRESENT PROJECT WILL DEAL MAINLY ON THE APPLICATION OF THE CONSTRUCTED WETLAND TECHNOLOGY TO THE TREATMENT OF CATTLE FARM GROUNDWATER, THUS INCREASING THE APPLICATION FIELD OF THE TECHNOLOGY. THE DEVELOPMENT WILL BE PERFORMED WITH THE COLLABORATION OF A PRIVATE FIRM WORKING ON SMALL CONSTRUCTED WETLANDS, WHICH	SALGOT	MIQUEL		UNIVERSIDAD DE BARCELONA	OPTO. PRODUCTOS NATURALES, BIOL VEGETAL SANIT. Y EDAFOLOGIA	FACULTAD DE FARMACIA	01-01-11	31-12-13	MINECO	Spain
CTM2010-17750		APPLICATION OF MICROBIAL FUEL CELLS TO CONSTRUCTED WETLANDS FOR THE OPTIMIZATION OF TREATMENT EFFICIENCY, ELECTRICITY GENERATION AND REDUCTION OF CLOGGING AND METHANE EMISSIONS		ACCORDING TO THE EXPERIENCE OBTAINED ABROAD AND IN SPAIN, CONSTRUCTED WETLANDS CONSTITUTES AN EXCELLENT ALTERNATIVE FOR THE WASTEWATER TREATMENT OF SMALL COMMUNITIES. FURTHERMORE, MICROBIAL FUEL CELLS, THOUGH TO BE A NOVEL RESEARCH FIELD, REPRESENTS A GOOD TECHNOLOGY IN ORDER TO MINIMIZE SOME OF THE MAJOR DRAWBACKS OF CONSTRUCTED WETLANDS. MAINLY, THE CLOGGING AND THE GREEHOUSE GASES EMITTED DURING TREATMENT (SUCH AS METHANE). FURTHERMORE, MICROBIAL FUEL CELS OFFER AS WELL THE POSSIBILITY OF ENERGY EXCEDENT PRODUCTION WHILE WASTEWATER IS TREATED. THIS ENERGY EXCEDENT COULD BE OF SPECIAL INTEREST WITHIN THE CONSTRUCTED WETLANDS SCENARIO, SINCE ONE OF THE MAJOR ADVANTAGES OF THIS TECHNOLOGY IS THE LOW ENERGY IMPUT NECESSARY FOR THE WASTEWATER TREATMENT. ALL THE BENEFITIAL ASPECTS ENCOMPASING THE APPLICATION OF MICROBIAL FUEL CELLS TO WETLANDS MIGHT BE OF CAPITAL INTEREST FOR THE OPTIMIZATION OF SUCH TECHNOLOGY AS WELL AS FOR GENERAL ENVIRONMENTAL TOPICS (SUCH AS THE GREENHOUSE EFFECT). MAIN OBJECTIVE OF THE PRESENT PROJECT IS TO EVALUATE THE BENEFITS OF THE APPLICATION OF MICROBIAL CELL FUELLS TO CONSTRUCTED WETLANDS. SPECIFIC OBJECTIVES OF THIS PROJECT ARE (1) DETERMINE	PUIGAGUT	JAUME		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA HIDRAULICA, MARITIMA Y AMBIENTAL	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain
CTM2010-21182		STUDY OF CHANGES IN THE INTERACTION WATER-MATERIAL RELATED TO ADVANCED WATER TREATMENT PROCESSES		IN ORDER TO MEET NEW REGULATIONS AND TO COPE WITH CHANGES IN CLIMATE AND WATER USE, BOTH WATER SUPPLY SOURCES AND WATER TREATMENT PLANTS WILL NECESSARILY EVOLVE IN THE NEXT FEW YEARS, IN SEVERAL CITIES IN THE WORLD. THESE CHANGES IN TREATMENT PRACTICES COULD INCLUDE THE USE OF ALTERNATIVE WATER SOURCES, NEW CHEMICAL PRODUCTS, AND/OR ADVANCED TREATMENT TECHNOLOGIES. THE CONSEQUENCES OF THESE NEW TECHNOLOGIES, PRODUCTS OR PRACTICES ARE NUMEROUS AND NOT WELL UNDERSTOOD, IN PARTICULAR IN RELATION WITH THE INTERACTIONS BETWEEN WATER QUALITY AND PIPE MATERIALS UNDER VARIABLE CONDITIONS. CHANGES IN WATER COMPOUNDS INFLUENCE THE INTERACTION BETWEEN WATER AND PIPE MATERIAL, PRODUCING SHORT-TERM EFFECTS ON WATER QUALITY AND LONG-TERM EFFECTS ON THE PIPE, SUCH AS CORROSION. CONSEQUENTLY, THE OBJECTIVE OF THIS PROJECT IS TO UNDERSTAND AND CHARACTERIZE IN DETAIL THE INTERACTION BETWEEN WATER AND PIPE MATERIAL TO ANTICIPATE THE EFFECTS OF WATER MINERALIZATION CHANGES RELATED TO ADVANCED WATER TREATMENT PROCESSES, IN ORDER TO DEFINE INTERACTION MODELS RELATING WATER QUALITY PARAMETERS WITH BOTH, CORROSION PARAMETERS FOR DIFFERENT PIPE MATERIALS AND WATER QUALITY CHANGES. FURTHERMORE, IT WILL BE FOCUSED ON STUDYING THE CHANGES IN WATER QUALITY BASED IN THE PRESENCE OF METALS AND WATER TOXICITY DEPENDING ON THE PIPE MATERIAL.	GONZALEZ BLANCO	SUSANA		CETAQUA, CENTRO TECNOLOGICO DEL AGUA, FUNDACION PRIVADA	CETAQUA, CENTRO TECNOLOGICO DEL AGUA, FUNDACION PRIVADA	CETAQUA, CENTRO TECNOLOGICO DEL AGUA, FUNDACION PRIVADA	01-01-11	31-12-13	MINECO	Spain

CTM2010-15348		TREATMENT OF SUPERFICIAL WATER AND WASTEWATER BY MEMBRANE TECHNOLOGIES TO OBTAIN HIGH QUALITY EFFLUENTS		THE REQUESTED PROJECT CONTINUES THE RESEARCH LINE FROM THE APPLICANT GROUP, WITH THE AIM TO OBTAINING HIGH QUALITY EFFLUENTS GUARANTYING THE USE OF NATURAL WATER, OR DURING THE DISCHARGE OR WASTEWATER REUSE, WITHOUT RISKS FOR THE HUMAN HEALTH OR ENVIRONMENT, BY MEANS OF MEMBRANE TREATMENT. THE FIRST GENERIC OBJECTIVE DEALS WITH THE REDUCTION OF DISINFECTION BY-PRODUCTS FORMATION (DBP), IN SURFACE WATER USED FOR HUMAN SUPPLY, USING MEMBRANE TREATMENT FOR THE REMOVAL OF NATURAL ORGANIC MATTER (NOM). CURRENTLY, OUR RESEARCH GROUP ALREADY STUDIES THE APPLICATION OF MICROFILTRATION (MF), ULTRAFILTRATION (UF) AND NANOFILTRATION (NF) TECHNIQUES. AS A NEW GOAL IN ORDER TO IMPROVE THE OBJECTIVE OF DBP REMOVAL, IT IS RAISED FOR THE CURRENT PROJECT, THE COMBINATION OF MEMBRANE TECHNIQUES WITH PRIOR COAGULATION OR ONLINE COAGULATION, STUDYING AS WELL, THE APPLICATION OF ULTRASOUNDS FOR NOM REDUCTION. A SECOND GENERIC OBJECTIVE RAISES THE OPTIMIZATION OF SUBMERGED MEMBRANE BIOREACTORS (SMBR) FOR WASTEWATER TREATMENT. CURRENTLY, OUR GROUP ALREADY STUDIES, AT BENCH-SCALE AND PILOT SCALE, THE CHARACTERISTICS AND COMPOSITION OF EXTRACELLULAR POLYMERIC SUBSTANCES (EPS) FORMED IN THE SMBR, WHICH CAUSE MEMBRANE FOULING. MOREOVER, THE EFFLUENT QUALITY AND SOME OPERATIONAL PARAMETERS ARE BEING STUDIED. IN THE PROPOSED PROJECT, THE STUDIES TO OPTIMIZE MBR OPERATION AND TO REDUCE	PRATS RICO	DANIEL		UNIVERSIDAD DE ALICANTE	INSTITUTO UNIVERSITARIO DEL AGUA Y DE LAS CC. AMBIENTALES	INSTITUTO UNIVERSITARIO DEL AGUA Y DE LAS CC. AMBIENTALES	01-01-11	31-12-13	MINECO	Spain
CTM2010-17365		ENVIRONMENTAL ANALYSIS OF THE USE OF URBAN RAINWATER		CITIES, WHICH CONCENTRATE MORE THAN 70% OF THE SPANISH POPULATION -MOSTLY ON COASTAL AREAS- HAVE SUBSTANTIALLY INCREASED THEIR WATER DEMAND IN THE LAST DECADES. AT THE SAME TIME, EPISODES OF DROUGHT AND POSSIBLE CHANGES IN HYDROLOGICAL CYCLES DUE TO CLIMATE CHANGE, EVIDENCE THE NEED OF INCREASING THE SUPPLY CAPACITY OF WATER RESOURCES IN URBAN AREAS. AT SCIENTIFIC LEVEL, MOST EFFORTS HAVE BEEN ADDRESSED TOWARDS DESALINATION AND RECLAIMED WATERS -REUSE OF WASTEWATER-. THESE STRATEGIES REDUCE THE WATER DEPENDENCY BUT INCREASE THE ENERGY DEMAND, CONTRIBUTING TO CLIMATE CHANGE. HOWEVER, THE RESEARCH ON THE POTENTIAL OF RAINWATER UTILIZATION HAS NOT BEEN ANALYZED IN DEPTH BY OUR SCIENTIFIC COMMUNITY. THIS PROJECT AIMS TO CONTRIBUTE TO THE ENVIRONMENTAL AND TECHNICAL ANALYSIS OF RAINWATER HARVESTING AND USE IN ORDER TO MOVE TOWARDS THE SUSTAINABLE MANAGEMENT OF WATER RESOURCES IN URBAN AREAS IN THE FRAME OF CLIMATE CHANGE. THIS USE MAY BE A KEY POINT IN ORDER TO REDUCE THE RESOURCES (MATERIALS, ENERGY) DEMAND OF CITIES AND THEIR EMISSIONS. THE FEASIBILITY OF THIS STRATEGY WILL BE EVALUATED AND PROVED THROUGH AND ENVIRONMENTAL AND ECONOMICAL ANALYSIS OF SEVERAL SCENARIOS (INFRASTRUCTURES CONSTRUCTION AND OPERATION). OBJECTIVES OF THE PROJECT: TO QUANTIFY THE POTENTIAL OF RAINWATER HARVESTING ACCORDING TO THE SEVERAL POTENTIAL CATCHMENT AREAS IN URBAN AREAS AND TO DEPICT RUNOFF QUALITY	GABARRELL DURANY	XAVIER		UNIVERSIDAD AUTONOMA DE BARCELONA	INSTITUT DE CIENCIA I TECNOLOGIA AMBIENTALS - ICTA	INSTITUT DE CIENCIA I TECNOLOGIA AMBIENTALS - ICTA	01-01-11	31-12-13	MINECO	Spain
CTM2010-17609		STRUCTURE AND FUNCTION OF PROKARYOTIC COMMUNITIES IN ADVANCED WASTEWATER TREATMENT SYSTEMS OPERATED UNDER REAL CONDITIONS.		TECHNICAL AND SOCIAL DEVELOPMENT REQUIRES THE INTRODUCTION OF NEW TECHNOLOGIES ALTERNATIVE TO CONVENTIONAL ACTIVATED SLUDGE (CASP) FOR THE TREATMENT OF URBAN AND INDUSTRIAL WASTEWATER, AIMED TO IMPROVE THE EFFICIENCY FOR NUTRIENT REMOVAL, WHICH IN ADDITION GENERATE TREATED WATER EFFLUENTS OF GOOD QUALITY, SUITABLE FOR THEIR DIRECT REUTILIZATION. IN THIS SENSE, THE COMBINATION OF ACTIVATED SLUDGE PROCESSES AND MEMBRANE TECHNOLOGIES RAISED IN RECENT YEARS AS AN ALTERNATIVE FOR THE DESIGN OF COMPACT TREATMENT INSTALLATIONS, WITH LOW SPACE REQUIREMENTS AND IMPROVED PERFORMANCE IN THE ELIMINATION OF ABIOTIC CONTAMINATS AND PATHOGENIC MICROORGANISMS. THIS PROJECT IS BASED ON THE PREVIOUS EXPERIENCE OF THE MEMBERS OF THE APPLYING RESEARCH TEAM IN OTHER FUNDED PROJECTS, AND MOSTLY ON THE RESULTS GENERATED BY RESEARCH CONDUCTED IN A PREVIOUS PROJECT GRANTED BY MICINN (REFERENCE CTM2007-65052/TECNO). WE PROPOSE TO EXTEND OUR EARLIER RESEARCH, IN ORDER TO COMPLEMENT THE KNOWLEDGE ALREADY GAINED WITH OUR PREVIOUS RESULTS, WHICH HAVE BEEN REFLECTED IN SEVERAL RECENT PUBLICATIONS BY OUR RESEARCH TEAM (SEE SECTIONS 3 AND 5). WE WILL CONTINUE OUR WORK ON A PILOT-SCALE BIORREACTOR	RODELAS GONZALEZ	MARIA BELEN		UNIVERSIDAD DE GRANADA	DPTO. DE MICROBIOLOGÍA	FACULTAD DE FARMACIA	01-01-11	31-12-13	MINECO	Spain

CTM2010-14883		WASTEWATER TREATMENT BY SOLAR PHOTOCATALYSIS		WATER IS ONE OF THE MOST IMPORTANT NATURAL RESOURCES IN LIFE, AS WELL AS BEING THE BASE OF THE DEVELOPMENT OF OUR CIVILIZATION, AS MUCH FOR OUR STANDARD OF LIVING AS FROM AN INDUSTRIAL POINT OF VIEW. ALTHOUGH THERE IS APPARENTLY PLENTY OF WATER AROUND THE WORLD, ONLY A LITTLE IS AVAILABLE FOR HUMAN USE, THEREFORE CONSTITUTING A LIMITED RESOURCE. BOTH, NECESSITY AND SHORTAGE, HAVE MOTIVATED THE EU TO ANNOUNCE IN ITS EUROPEAN DIRECTIVE 2000/60/CE THAT ¿WATER IS NOT A COMMERCIAL PRODUCT LIKE ANY OTHER BUT, RATHER, A HERITAGE WHICH MUST BE PROTECTED, DEFENDED AND TREATED AS SUCH. IN THIS SENSE, THE IDEA TO REGENERATE AND REUSE POLLUTED WATER, IS A NECESSITY THAT IS GIVING WAY TO MORE STRINGENT WASTEWATER REGULATION WITH RESPECT TO WASTE LIMITS. THIS PROJECT IS DEVOTED TO THE DEVELOPMENT OF PHOTOCATALYTIC SYSTEMS BASED ON TITANIUM DIOXIDE MODIFIED BY ACTIVATED CARBONS FOR THE SOLAR PHOTOCATALYTIC DEGRADATION OF ORGANIC MATTER. THE TECHNOLOGIES BASED ON SOLAR RADIATION AND UV IS POINTING OUT TO BE ONE OF THE BEST SOLUTIONS TO WASTEWATER TREATMENTS. THE EXPLOITATION OF COMBINING HETEROGENEOUS PHOTOCATALYSIS AND SOLAR TECHNOLOGY CONSTITUTE A POWERFULLY TOOL TO REMOVE ORGANIC MATTER POLLUTION IN WASTEWATER,	BAHAMONDE SANTOS	ANA MARIA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	OPTO. DE INGENIERIA DE PROCESOS CATALITICOS	INSTITUTO DE CATALISIS Y PETROLEOQUIMICA (ICP)	01-01-11	31-12-13	MINECO	Spain
CTM2010-17846		BIOALGAS: BIOGAS PRODUCTION FROM ALGAE BIOMASS GROWN IN HIGH RATE PONDS FOR WASTEWATER TREATMENT		THE BIOALGAS PROJECT AIMS AT INTEGRATING ENERGY PRODUCTION AND WASTEWATER TREATMENT, BY COMBINING HIGH RATE PONDS AND ANAEROBIC DIGESTERS TO GENERATE BIOGAS FROM ALGAE BIOMASS. THE MAIN OBJECTIVE IS TO STUDY PROCESS PERFORMANCE AND VIABILITY FROM A TECHNICAL POINT OF VIEW (QUALITY OF EFFLUENT WATER, QUANTITY OF BIOGAS PRODUCED, OVERALL ENERGY BALANCE) AND ALSO FROM AN ENVIRONMENTAL POINT OF VIEW. SPECIFIC OBJECTIVES ARE: (1) TO CHARACTERISE ALGAE BIOMASS PRODUCTION IN HIGH RATE PONDS, COMPARING A CONVENTIONAL DESIGN (RACEWAY POND) WITH A NEW PHOTOBIOREACTOR PROTOTYPE; (2) TO DETERMINE THE METHANE PRODUCTION POTENTIAL AND OPTIMISE ANAEROBIC DIGESTION OPERATING CONDITIONS (PROCESS TEMPERATURE, RETENTION TIME AND ORGANIC LOADING RATE); (3) TO EVALUATE THE EFFECT OF ALGAE BIOMASS PRETREATMENT ON ITS COMPOSITION, ANAEROBIC BIODEGRADABILITY AND METHANE PRODUCTION; AND (4) TO ASSESS PROCESS PERFORMANCE FROM AN ENERGETIC AND ENVIRONMENTAL PERSPECTIVE, USING THE LIFE CYCLE ASSESSMENT METHODOLOGY. THE CONSECUTION OF THIS PROJECT WOULD HELP CREATE KNOWLEDGE ON A NOVEL PROCESS INTEGRATING WATER AND ENERGY. THE RESULTING DATA ON PROCESS OPERATION AND EFFICIENCY	FERRER MARTI	IVET		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA HIDRAULICA, MARITIMA Y AMBIENTAL	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain
CTM2010-20248		SIMULATION AND OPTIMIZATION BY MEANS OF GENETIC ALGORITHMS OF MEMBRANE PROCESSES FOR TREATMENT AND CLAIMING OF BRACKISH WATER		IN THIS PROJECT, NEW SIMULATION AND OPTIMIZATION TECHNIQUES FOR NANOFILTRATION AND REVERSE OSMOSIS PROCESSES FOR BRACKISHWATER POTABILIZATION AND INDUSTRIAL WATER CLAIMING ARE GOING TO BE DEVELOPED. THE NEED OF THESE TECHNIQUES APPEARS BECAUSE MANY DESIGNS OBTAINED BY MEANS OF COMMERCIAL SOFTWARE ARE NOT EFFICIENT ENOUGH. THESE UNSUITABLE DESIGNS REQUIRE AFTERWARDS AN IMPORTANT COST FOR THE CORRECTION OF THE INSTALLATION. THIS IS A CONSEQUENCE OF THE FACT THAT COMMERCIAL SOFTWARE IS NOT ACCURATE ENOUGH, NOT PRACTICABLE FOR PERFORMING COMPLEX CONFIGURATIONS AND THAT THE DESIGN IS BASED ONLY ON THE ENGINEER¿S SKILLS. THE TECHNIQUES THAT WILL BE DEVELOPED IN THIS PROJECT WILL OBTAIN HIGHER ACCURACY IN THE PERFORMANCE PREDICTION. THEY WILL ALLOW THE MULTIOBJETIVE OPTIMIZATION OF THE CONFIGURATION AND OPERATION PARAMETERS SIMULTANEOUSLY, CONSIDERING COST, PRODUCT QUALITY AND ENVIRONMENTAL IMPACT OF THE BRINES PRODUCED. TO THIS AIM, WE WILL DEVELOP PHYSICAL MODELS BASED ON THE MASS TRANSPORT AND METHODOLOGIES FOR THE USE OF EMPIRICAL INFORMATION, ESPECIALLY TO MODEL MEMBRANE FOULING. A HYBRID ALGORITHM BASED ON GENETIC ALGORITHMS AND NEURAL NETWORKS WILL BE BUILT. IN THE CASE OF PROCESSES INTENDED FOR WATER-CLAIMING, THE ALGORITHM WILL BE ABLE TO INTERACT WITH A MODEL OF THE INDUSTRIAL PROCESS THAT RELATES THE EFFLUENT CHARACTERISTICS AND THOSE OF THE	GOZALVEZ ZAFRILLA	JOSE MARCIAL		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	01-01-11	31-12-14	MINECO	Spain

CTM2010-18899		IMPROVEMENT OF DRINKING WATER TREATMENT PROCESS THROUGH ULTRAFILTRATION MEMBRANES BY ADVANCED PRETREATMENTS		ULTRAFILTRATION MEMBRANES ARE A GOOD ALTERNATIVE FOR TREATMENT OF WATER INTENDED FOR HUMAN CONSUMPTION, PRESENTING AS MAIN LIMITATIONS, THE IRREVERSIBLE FOULING OF THE MEMBRANES AND THE LOW RETENTION CAPACITY OF DISSOLVED COMPOUNDS SUCH AS, NATURAL ORGANIC MATTER AND PESTICIDES. THE APPLICATION OF ADVANCED PRETREATMENTS ALLOWS US TO IMPROVE NOT ONLY THE QUALITY OF EFFLUENT OBTAINED BUT ALSO THE FUNCTIONALITY OF THE MEMBRANES, WHICH WILL RESULT IN OPTIMIZING THE GLOBAL PROCESS WHAT WILL MAKE IT MORE COMPETITIVE. SOME PRETREATMENTS SUCH AS, COAGULATION-FLOCCULATION, HAVE ALREADY SHOWN THEIR SUITABILITY FOR WHAT IS INTENDED TO DESIGN A NEW COAGULATION SYSTEM ASSOCIATED TO A SPECIFIC HYDRAULIC MICRO-FLOCCULATION FOR THIS APPLICATION. THE OPTIMIZATION OF THE PROCESS IS NOT ONLY PROVIDED THROUGH THIS NEW SYSTEM, BUT ALSO BY THE APPLICATION OF OTHERS SUCH AS, OZONIZATION AND MULTILAYER FILTRATION. DIFFERENT PRETREATMENTS WILL BE STUDIED TOGETHER WITH THE ULTRAFILTRATION SYSTEM BASED ON THE EFFLUENT QUALITY REMOVAL CAPACITY AND / OR TRANSFORMATION OF NATURAL ORGANIC MATTER AND PESTICIDES, STATE OF THE MEMBRANE AFTER A PERIOD OF TIME OF OPERATION AND GENERATION OF BIOFILMS AS WELL AS CHLORINATION BY-PRODUCTS IN THE DISTRIBUTION NETWORK. THIS WILL LEAD US TO DEVELOP A COMMON OBJECTIVE AS	GOMEZ NIETO	MIGUEL ANGEL		UNIVERSIDAD DE GRANADA	DPTO. INGENIERIA CIVIL	E.T.S. DE INGENIEROS DE CAMINOS, CANALES Y PUERTOS	01-01-11	31-12-13	MINECO	Spain
CTM2010-19779-C02-02		EMERGING POLLUTANTS: ENVIRONMENTAL CONSEQUENCES OF THE USE OF WASTES AS AGRICULTURAL SOIL AMENDMENTS. ECOTOXICOLOGICAL ASSESSMENT AND TRANSFER TO THE ENVIRONMENT.		SOCIO-ECONOMIC CHANGES DURING RECENT DECADES TOGETHER WITH THE DEVELOPMENT OF THE INDUSTRY IN DIFFERENT SECTORS AND THE EXORBITANT INCREASE IN HUMAN POPULATION AND ITS HIGHLY CONSUMING PRACTICES, HAVE RESULTED IN A SIGNIFICANT INCREASE IN ORGANIC WASTE PRODUCTION THAT IN CERTAIN SITUATIONS CAN GENERATE ENVIRONMENTAL PROBLEMS. MUCH OF THIS ORGANIC POLLUTION ENDS UP IN WASTEWATER AND IN THE MSW; HOWEVER, ITS LOW CONCENTRATION OR AVAILABILITY TO BE METABOLIZED BY MICROORGANISMS DOES NOT NECESSARILY CAUSE A THREAT TO THE ENVIRONMENT. HOWEVER, THERE ARE SOME ORGANIC COMPOUNDS THAT DO NOT BREAK DOWN EASILY DURING WASTEWATER TREATMENT AND/OR COMPOSTING, TENDING TO ACCUMULATE IN SLUDGE AND COMPOST WHICH IF USED FOR AGRICULTURAL PURPOSES, CAN ORIGINATE PROBLEMS DUE TO TOXICITY AND BIOACCUMULATION OF THESE ORGANIC COMPOUNDS ALONG THE FOOD CHAIN. THE AIM OF THIS SUBPROJECT IS TO DEVELOP AND OPTIMIZE THE EXTRACTION, PURIFICATION AND ANALYSIS BY GAS AND/OR LIQUID CHROMATOGRAPHY COUPLED WITH MASS SPECTROMETRY FOR THE DETERMINATION OF EMERGING PERSISTENT ORGANIC POLLUTANTS (POLYBROMINATED DIPHENYL ETHERS, PBDES, DECABROMODIPHENYL ETHANE, DBDPE, DECLORANE PLUS, DP, PERFLUOROOCTANE SULFONATE, PFOS) IN MATRIXES WITH DIFFERENT NATURE, COMING FROM THE APPLICATION OF SEWAGE SLUDGE AND MSW COMPOST ON CONTROL SOIL. THIS INVESTIGATION WILL BE PERFORMING BY USING THE KNOWLEDGE GAINED OVER TIME WITH DIFFERENT MASS SPECTROMETRY SYSTEMS AVAILABLE IN THE	MARTINEZ CALVO	MARIA DE LOS ANGELES		CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	DPTO. DE MEDIO AMBIENTE	DPTO. DE MEDIO AMBIENTE	01-01-11	31-12-13	MINECO	Spain

CTM2010-15682		INDUSTRIAL WASTEWATER TREATMENT BY OXIDATION PROCESSES AND ADVANCED BIOLOGICAL SYSTEMS		THIS PROJECT AIMS TO INVESTIGATE THE DEGRADATION OF TOXIC AND/OR XENOBIOTIC COMPUNDS BY COMBINING CHEMICAL OXIDATION PROCESSES, USING CATALYTIC WET PEROXIDE OXIDATION (CWPO) AND ADVANCED BIOLOGICAL SYSTEMS, AS MEMBRANE BIOLOGICAL REACTORS (MBR) AND ANAEROBIC MEMBRANE BIOLOGICA REACTORS (AMBR). SOME OF THESE XENOBIOTIC COMPOUNDS ARE INCLUDED IN THE PRIORITY SUBSTANCES LIST (PSL) IN THE FIELD OF WATER POLICY INCORPORATED BY THE DIRECTIVE 2008/105/CE. THE ENHANCEMENT OF THE TREATMENT OF DIFFERENT INDUSTRIAL WASTEWATERS IS ALSO AND OBJECTIVE OF THE PRESENT PROJECT. THIS INCLUDES WATER FROM PASSIVATION OF METALLIC PIPELINES IN THERMAL AND NUCLEAR POWER PLANTS, USED OIL RECYCLING AND CLEANING OF PESTICIDE CONTAINERS. MORFOLINE, NAPHTHALENE, PENTACHLOROPHENOL AND ALACHLOR WERE SELECTED AS TARGET COMPOUNDS, WITH SPECIAL ATTENTION ON THE LAST THREE ONES, WHICH ARE REGISTERED IN THE PSL. OWING TO THEIR PHYSICOCHEMICAL PROPERTIES, ESPECIALLY THEIR POLARITY, SOLUBILITY AND HIGH RECALCITRANCE TO CONVENTIONAL TREATMENTS, IT IS NECESSARY TO DEVELOP HIGH EFFICIENT METHODS TO REMOVE THEM AND AVOID SUPERFICIAL AND UNDERGROUND WATER POLLUTION. FIRSTLY, BIODEGRADABILITY TESTS WILL BE CARRIED OUT, BY USING DIFFERENT INITIAL CONCENTRATIONS ACCORDING TO THE DIFFERENT TECHNOLOGIES USED (AEROBIC/ANAEROBIC), IN ORDER TO DETERMINE THE MOST APPROPIATED RANGE OF CONCENTRATIONS TREATABLE BY THE SYSTEMS AFOREMENTIONED. IN ADDITION, TOXICITY TEST WILL BE CARRIED OUT TO ESTABLISH THE INHIBITION EFFECT CAUSED BY THESE XENOBIOTICS ON THE MICROBIAL	FERNANDEZ MOHEDAN	ANGEL		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. QUIMICA FISICA APLICADA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain
CTM2011-29143-C03-02		CRYPTOSPORIDIUM AS A MODEL OF EMERGING WATERBORNE ENTEROPATHOGEN IN THE EVALUATION OF PHOTOCATALYTIC PROCESSES FOR WATER REGENERATION	ENERGIA SOLAR\FOTOCATALISIS\ESCHERICHIA COLI\LEGIONELLA SPP.\DISINFECTION\WATER REGENERATION	IN TODAY'S SOCIETY, DIFFERENT SOCIAL AND ENVIRONMENTAL CIRCUMSTANCES REQUIRE THE REUSE OF URBAN WASTEWATER AS AN ALTERNATIVE TO CONVENTIONAL WATER RESOURCES. WHEN CONSIDERING THE REUSE OF TREATED WASTEWATER, IT MUST BE TAKEN INTO ACCOUNT THAT THESE WATERS ARE USUALLY CONTAMINATED WITH PATHOGENS OF DIFFERENT NATURE AND, DEPENDING ON THE SPECIES AND CONCENTRATIONS IN WHICH THEY ARE, REPRESENT A RISK FOR HUMAN AND ANIMAL HEALTH, SO THEY MUST BE REDUCED TO A GREATER OR LESSER EXTENT DURING THE APLICATION OF STANDARD DESINFECTION TECHNOLOGIES TREATMENT OF WASTEWATERS. ROYAL DECREE 1620/2007 (REGULATION PUBLISHED BY EXECUTIVE ORDER) OF DECEMBER 7TH ESTABLISHES THE LEGAL FRAMEWORK FOR THE REUSE OF TREATED WATER INCLUDING THE QUALITY CRITERIA BOTH IN BIOLOGICAL AND PHYSICAL-CHEMICAL CONTROL THAT ARE REQUIRED FOR SUBSEQUENT REUSE OF SUCH WATERS ACCORDING TO DIFFERENT USES. IN THIS RESPECT AND REGARDLESS OF THE PURPOSE FOR WHICH WATER IS INTENDED, IT IS REQUIRED THE CONTROL OF THE ESCHERICHIA COLI AND INTESTINAL NEMATODES OF THE GENERA ANCYLOSTOMA, ASCARIS, CAPILLARIA, ENTEROBIUS, TOXOCARA, TRICHOSTRONGYLUS, TRICHURIS AND STRONGYLOIDES [BOE (OFFICIAL STATE GAZETTE) NO. 100 APRIL 26TH , 2002; BOE NO. 294, DECEMBER 8TH , 2007]. ALSO, IT IS INCLUDED AS PATHOGENS TO CONTROL SPECIES OF LEGIONELLA WHERE THERE IS A RISK OF AEROSOLIZATION, AND THE CESTODES TAENIA SAGINATA	ARES MAZAS	ELVIRA		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. MICROBIOLOGIA Y PARASITOLOGIA	FACULTAD DE FARMACIA	01-01-12	31-12-14	MINECO	Spain

CTM2011-28595-C02-02		EXPERIMENTAL STUDY OF ENERGY RECOVERY IN THE FORM OF BIOGAS FROM THE ORGANIC MATTER AND NUTRIENTS PRESENT IN WASTEWATER BY COUPLING AN ANMBR AND A MICROALGAE CULTIVATION	EMERGING ORGANIC CONTAMINANTS\RADIONUCLIDES\ADVANCED WATER TREATMENT\MEMBRANE-BASED TREATMENTS\WATER REUSE\SLUDGE TREATMENT\SLUDGE REUSE	THE MAIN AIM OF THIS RESEARCH PROJECT IS TO STUDY THE BIOGAS PRODUCTION INCREASE OBTAINED IN AN ANAEROBIC MEMBRANE BIOLOGICAL REACTOR (ANMBR) FOR WASTEWATER TREATMENT DUE TO THE EFFLUENT TREATMENT BY MEANS OF MICROALGAE CULTIVATION INCLUDING THE RECIRCULATION OF THE BIOMASS PRODUCED TO THE ANAEROBIC REACTOR WHERE IT WILL BE DIGESTED AND CONVERTED INTO BIOGAS. THE ANMBR TECHNOLOGY FOR URBAN WASTEWATER ALLOWS THE ORGANIC MATTER TO BE CONVERTED IN BIOGAS MINIMISING SLUDGE PRODUCTION, BUT NUTRIENT REMOVAL CANNOT BE ACHIEVED IN THE ANAEROBIC REACTOR. THEREFORE, THE EFFLUENT FROM THE ANAEROBIC MEMBRANE BIOLOGICAL REACTOR MUST BE APPROPRIATELY TREATED TO ACHIEVE NUTRIENT REMOVAL. THE APPLICATION OF AN ANAEROBIC MEMBRANE BIOREACTOR FOR URBAN WASTEWATER TREATMENT TOGETHER WITH NUTRIENT REMOVAL FROM THE EFFLUENT BY MEANS OF CONVENTIONAL PROCESSES (NITRIFICATION-DENITRIFICATION FOR NITROGEN REMOVAL, AND CHEMICAL PRECIPITATION FOR PHOSPHORUS REMOVAL) ARE BEING STUDIED BY CALAGUA RESEARCH GROUP. IN THIS PROJECT, AN ALTERNATIVE TO CONVENTIONAL TREATMENT FOR NUTRIENT REMOVAL FROM THE ANMBR EFFLUENT BASED ON MICROALGAE CULTIVATION AND ITS FURTHER SEPARATION BY MEMBRANE PROCESSES WILL BE STUDIED. A HIGH QUALITY EFFLUENT WHICH COULD BE REUSED WILL BE OBTAINED DUE TO THE APPLICATION OF MEMBRANE SEPARATION PROCESSES. ON THE OTHER HAND, MICROALGAL CULTURES ARE ABLE TO UPTAKE NUTRIENTS FROM WASTEWATER AS WELL AS CARBON	SECO TORRECILLAS	AURORA		UNIVERSIDAD DE VALENCIA	OPTO. DE INGENERÍA QUÍMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-12	31-12-14	MINECO	Spain
CTM2011-29143-C03-01		ADVANCED BIOXIDATION AND PHOTOCATALYTIC PROCESSES FOR REMOVAL OF EMERGING CHEMICAL POLLUTANTS	CRYPTOSPORIDIUM; VIABILITY/INFECTIVITY;	THE WORLD HEALTH ORGANIZATION DEFINES HEALTHY WATER AS THE WATER CONSUMED THROUGHOUT THE LIFE WITHOUT THAT MIGHT IMPLY A SIGNIFICANT RISK TO HEALTH. IN SPITE OF THE PROGRESS OF MANKIND, THE AIM IS INCREASINGLY DIFFICULT ESPECIALLY CONSIDERING FACTORS SUCH AS POPULATION INCREASES, THE CONSUMPTION GROWTH AND THE GLOBALIZATION, WHICH LEADS TO THE EMERGENCE OF NEW CONTAMINANTS AND PATHOGENS AND, ULTIMATELY, NEW WATER-BORNE DISEASES. EMERGING POLLUTANTS (EP) ARE, IN MANY CASES, NON-REGULATED POLLUTANTS THAT MAY BE CANDIDATES TO BECOME IN THE FUTURE, DEPENDING ON THEIR POTENTIAL EFFECTS ON HEALTH AND THE AVAILABLE DATA THAT CAN DEMONSTRATE ITS EXISTENCE. EXAMPLES OF COMPOUNDS THAT HAVE BEEN CONSIDERED EMERGING LATELY AND WITH RELEVANCE, ARE SOME SURFACTANTS, PHARMACEUTICALS AND PERSONAL CARE PRODUCTS AND GASOLINE ADDITIVES. THE MAIN FEATURE OF THIS GROUP OF CONTAMINANTS IS THAT THEY DO NOT NEED TO PERSIST IN THE ENVIRONMENT TO CAUSE ADVERSE EFFECTS SINCE REMOVAL CAN BE COMPENSATED BY THE CONTINUOUS INTRODUCTION THEREIN. ONE OF THE MAIN SOURCES OF EP ARE NOT-TREATED URBAN WASTEWATER AND SEWAGE EFFLUENT, ATTENDING THAT MANY OF THEM ARE NOT DESIGNED TO DEAL WITH THIS TYPE OF COMPOUNDS AND, THEREFORE, A HIGH PROPORTION OF EP AND THEIR METABOLITES PASSES TO THE ENVIRONMENT. THE GOAL IS, OF COURSE, AVOID ARRIVING SUCH COMPOUNDS TO THE ENVIRONMENT AND EVEN MORE REACHING THE RESOURCES OF WATER FOR CONSUMPTION. IN THIS CONTEXT THE PRESENT PROJECT PROVIDES VARIOUS INNOVATIVE STRATEGIES FOR THE REMOVAL OF A SET OF EP	MARUGAN AGUADO	A. JAVIER		UNIVERSIDAD REY JUAN CARLOS	OPTO. TECNOLOGIA QUIMICA Y AMBIENTAL	ESCUELA SUPERIOR DE CIENCIAS EXPERIMENTALES Y TECNOLOGIA	01-01-12	31-12-14	MINECO	Spain

CTM2011-27163		UNDERSTANDING FUGITIVE GREENHOUSE GAS EMISSIONS FROM WASTEWATER TRANSPORT AND TREATMENT SYSTEMS	REUSE\RECLAIMED WATER\MEMBRANE BIOREACTOR\ULTRAFILTRATION\NANO FILTRATION\REVERSE OSMOSIS\ANAEROBIC\BIOGAS\MEMBRANE FOULING	URBAN WASTEWATER SYSTEMS (UWS) CONTRIBUTE TO GREENHOUSE GAS (GHG) EMISSIONS NOT ONLY THROUGH THEIR SIGNIFICANT ENERGY CONSUMPTION BUT ALSO THROUGH THEIR DIRECT EMISSIONS OF METHANE (CH4) AND NITROUS OXIDE (N2O), TWO OF THE MOST POTENT GHG. DUE TO AN INSUFFICIENT AMOUNT OF SCIENTIFIC KNOWLEDGE AND FIELD DATA, THE CURRENT INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) GUIDELINES SUBSTANTIALLY UNDERESTIMATE THE DIRECT GHG EMISSIONS FROM URBAN WATER SYSTEMS. DETERMINING THE REAL EMISSIONS IS THE FIRST STEP IN THE DESIGN OF EFFECTIVE MITIGATION STRATEGIES THAT WILL ALLOW OPERATING CARBON NEUTRAL SYSTEMS IN THE FUTURE. THIS PROJECT WILL ADDRESS CRITICAL KNOWLEDGE AND TECHNOLOGY GAPS RELATED TO GHG EMISSIONS IN TWO SECTIONS OF THE URBAN WASTEWATER SYSTEMS: SEWER NETWORKS AND WASTEWATER TREATMENT PLANTS. THE MAIN OBJECTIVE OF THIS PROJECT IS TO PROVIDE KNOWLEDGE AND DATA FOR AN ACCURATE ACCOUNTING OF FUGITIVE GHG EMISSIONS IN SEWER NETWORKS AND WASTEWATER TREATMENT SYSTEMS. THIS KNOWLEDGE WILL BE INTEGRATED TO DELIVER PRACTICAL STRATEGIES FOR EFFECTIVE MITIGATION OF BOTH METHANE AND NITROUS OXIDE FROM WASTEWATER TRANSPORT AND TREATMENT SYSTEMS. TO SUCCESSFULLY ACHIEVE THIS GOAL, THE PROJECT IS STRUCTURED IN 3 WORK PACKAGES. WP1 WILL INVESTIGATE FOR THE FIRST TIME CH4 AND N2O PRODUCTION IN A FULL-SCALE MEDITERRANEAN SEWER NETWORK. THE MONITORING WILL LAST FOR 1 YEAR TO CAPTURE THE	PIJUAN VILALTA	MARIA TERESA		INSTITUT CATALA DE RECERCA DE L AIGUA FUNDACIO PRIVADA	INSTITUT CATALA DE RECERCA DE L'AIGUA-FUNDACIO PRIVADA ICRA	INSTITUT CATALA DE RECERCA DE L'AIGUA-FUNDACIO PRIVADA ICRA	01-01-12	31-12-14	MINECO	Spain
CTM2011-24303		PERSISTENT ORGANIC POLLUTANTS MAPPING AND MODELING	HYDROTALCITE\LAYERED DOUBLE HYDROXIDES\HUMIC ACID\PESTICIDES\HEAVY METALS	THE ASSESSMENT OF THE IMPACT OF CHEMICALS ON HUMAN HEALTH AND ECOSYSTEMS REQUIRES THE DETERMINATION OF THEIR PERSISTENCE IN THE ENVIRONMENT. CURRENT QSAR MODELS FOR BIODEGRADATION IN WATER LACK THE NECESSARY RELIABILITY THAT IS REQUIRED IN REGISTRATION AND EVALUATION PROCESSES SUCH AS REACH. POPMAP WILL EXPLORE A NOVEL APPROACH FOR MAPPING AND CLASSIFYING THE CHEMICAL SPACE AND TO MODEL BIODEGRADATION IN WATER. CHEMICALS WILL BE CONSISTENTLY CLASSIFIED UNDER STRICT CHEMICAL AND THERMODYNAMIC RESTRICTIONS, INDEPENDENTLY OF THE DIMENSION OF THE BIODEGRADATION SPACE, BY UNDERTAKING THE FOLLOWING TASKS: (I) DEFINITION OF UNAMBIGUOUS REPRESENTATION/ENCODING OF CHEMICALS APPROPRIATE TO CHARACTERIZE STRUCTURAL FEATURES; (II) DEVELOPMENT OF MOLECULAR SIMILARITY MEASURES SUITABLE FOR (SUB)STRUCTURE MATCH AND TO ACCOUNT FOR CHEMICAL STABILITY AND THERMODYNAMIC COST OF TRANSFORMATIONS BETWEEN COMPARED CHEMICALS. THIS WILL ALSO ESTABLISH UNAMBIGUOUSLY THE DOMAIN OF APPLICATION FOR THE INFERENCE OF THE BIODEGRADATION OF NEW CHEMICALS; (III) SELECTION AND APPLICATION OF ENRICHMENT TECHNIQUES TO POPULATE UNDER-REPRESENTED REGIONS OF THE BIODEGRADATION	GIRALT PRAT	FRANCESC		UNIVERSIDAD ROVIRA I VIRGILI	DPTO. INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	01-01-12	31-12-14	MINECO	Spain
CTM2011-23583		DEVELOPMENT OF NEW ELECTRODE MATERIALS BASED ON ICP AND PT COATINGS, WITH APPLICATION IN THE ELECTROCHEMICAL TREATMENT OF TEXTILE WASTE WATERS	QSAR\BIODEGRADATION\STRUCTURE-BIODEGRADABILITY RELATIONSHIPS\CHEMICAL SPACE\MOLECULAR DESCRIPTORS\SMILES	THE PRESENT INVESTIGATION PROJECT IS CENTERED IN THE INVESTIGATION AND THE DEVELOPMENT OF NEW ELECTRODE MATERIALS THAT APPLIED IN ELECTROCHEMICAL TECHNIQUES THEY CONTRIBUTE TO THE ELIMINATION OF POLLUTANTS (TOGETHER WITH THE ELIMINATION OF THE COLOR) COMING FROM BREAKUPS OF MIXTURES OF REACTIVE COLORINGS. THIS WOULD BE A PREVIOUS STEP TO A STUDY CENTERED IN THE REAL CONDITIONS IN THE INDUSTRIAL DYE PROCESSES. FOR THESE APPLICATIONS THE USE OF TI/SNO2-PT DSA ANODES DOPED WITH SB HAVE DEMONSTRATED THEIR EFFECTIVENESS AND STABILITY FOR THESE PROCESSES, WHILE SOME FOUND LIMITATIONS INDUCE SEARCHING FOR ALTERNATIVE ELECTRODIC MATERIALS. IN THIS SENSE, THE SYNTHESIS OF INTRINSIC CONDUCTIVE POLYMERS (ICP) FILMS ON SEVERAL SUBSTRATES, PERMIT TO GET MATERIALS WITH HIGH SURFACE AREA THAT ARE CONDUCTIVE WITHIN NORMAL RANGES OF POTENTIAL WHERE ORGANIC MOLECULES ARE OXIDIZED, ALTHOUGH IT IS NECESSARY TO MODIFY THE OBTAINED POLYMER SURFACES TO INCREASE ITS CATALYTIC ACTIVITY. THE ABILITY TO DISPERSE METAL PARTICLES WITHIN THE MATRIX OF THE ICP CAN HELP TO GET HIGH ELECTROACTIVITY ELECTRODES. THE PROJECT THAT IS REQUESTED HAS THIS WAY AS PURPOSE TO IMPROVE THE ELECTROCATALYTIC PROPERTIES	CASES IBORRA	FRANCISCO		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	DPTO. INGENIERIA TEXTIL Y PAPELERA	ESCUELA POLITECNICA SUPERIOR. ALCOY	01-01-12	31-12-14	MINECO	Spain

CTM2011-23069		DEVELOPMENT OF NOVEL COMPACT ANAEROBIC/AEROBIC REACTORS FOR THE REMOVAL OF EMERGENT AND REFRACTORY POLLUTANTS		THE PRINCIPAL PURPOSE OF THE REQUESTED PROJECT IS TO DEVELOP A NEW TECHNOLOGY FOR TREATING INDUSTRIAL/URBAN WASTE WATER CONTAINING LOW CONCENTRATION OF BIOREFRACTORY POLLUTANTS, EMERGENT AND AZO DYES, RECALCITRANT TOWARDS THE TYPICAL SEWAGE SLUDGE TREATMENT IN THE WWTPS, THUS OCCURRING IN THEIR EFFLUENTS. THE TECHNOLOGIES TO BE DEVELOPED ARE BASED ON THE COUPLING, THROUGH SELECTIVE MEMBRANES, OF THE ANAEROBIC BIOLOGICAL ACTIVATED CARBON (BAC) TREATMENTS AND SUBSEQUENT FINISHING BIOLOGICAL OR OXIDATION TREATMENTS. BOTH TREATMENTS PERMIT HIGH REACTION RATES AT NOT DEMANDING CONDITIONS. IN ADDITION TO OTHER NOVEL CONFIGURATIONS, THE MORE INNOVATIVE OBJECTIVE IS THE DEVELOPMENT OF AN ALTERNATIVE METHOD TO CARRY OUT THE REDUCTIVE TREATMENT OF POLLUTANTS THROUGH BAC, WITHOUT ANY NEED TO CONTACT THE CONTAMINANT WITH THE BAC, THUS OVERCOMING THE PROBLEMS ASSOCIATED TO CLOGGING BY MICROORGANISMS GROWN AND BIOFILM DEACTIVATION. IN THIS WAY, AN INNOVATIVE REACTOR CONCEPT, CONSISTING OF TWO COMPARTMENTS SEPARATED BY A CARBON-BASE MEMBRANE, WILL ALLOW ISOLATING TWO ANAEROBIC ZONES. IN ONE OF THE SIDES, THE SOLUTION CONTAINING THE CONTAMINANT WILL BE PLACED, AND THE CONTAMINANT WILL BE DEGRADED BY REDUCTION. IN THE OTHER SIDE OF THE REACTOR, A BIOFILM SUPPORTED OVER THE MEMBRANE SURFACE AND AN EXTERNAL SOURCE OF CARBON WILL BE BIOLOGICALLY	FONT CAPAFONS	JOSE		UNIVERSIDAD ROVIRA I VIRGILI	OPTO. INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	01-01-12	31-12-14	MINECO	Spain
CTM2011-27657		AN INTEGRATED ASSESSMENT OF ANTHROPOGENIC POLLUTANT LEVELS AND THEIR ECOLOGICAL IMPACT ON RIVER BASINS. A STUDY OF THE HENARES RIVER BASIN.	CONSTRUCTED WETLAND\HYBRID SYSTEMS\DESIGN PARAMETERS\ANAEROBIC BIOASSAYS\RESPIROMETRY\INDUSTRIAL WASTEWATER	A CONSIDERABLE PROGRESS HAS BEEN MADE FOLLOWING THE IMPLEMENTATION OF THE DIRECTIVE 91/271 (UWWD). THE SEWAGE TREATMENT PLANT (STP) INFRASTRUCTURE IN SPAIN HAS INCREASED BY A FACTOR OF 100 OVER THE LAST 20 YEARS. PROGRESS IN ADDRESSING WASTEWATER-RELATED CHALLENGES RESULTING FROM THIS REGULATION, HAS ENSURED NOTABLE IMPROVEMENTS, IN QUANTITY AND QUALITY OF WATER. RECENT DATA SHOWS THAT, THERE ARE IN THE ORDER OF 1850 STPS WITH A TREATMENT CAPACITY FLOW OF APROX. 6,5 HM3/DAY. SECONDARY OR FURTHER STRINGENT TREATMENT IS IN PLACE FOR A SIGNIFICANT PERCENTAGE WITH THE AIM OF REACHING THE QUALITY STANDARDS OF THE DIRECTIVE 2000/60 (WFD). THE MAIN SOURCES OF THESE WATERS ARE URBAN AND IN A LOWER PERCENTAGE AGRICULTURAL AND INDUSTRIAL ORIGIN. THIS FACT MAKES THAT THE WATER CONTAMINANT PROFILE HAS A HIGH ANTHROPOGENIC COMPONENT. AS A RESULT OF THE APPLICANT GROUP'S PARTICIPATION IN THE TRAGUA PROJECT, A PART OF THE CONSOLIDER INGENIO PROGRAM, IT HAS FOUND THAT THE REMOVAL OF POLLUTANTS FROM STPS IN SPAIN IS VERY EFFECTIVE OVERALL BUT THAT EFFECTIVENESS OF THESE STPS IS LIMITED BECAUSE OF THE LARGE NUMBER OF POLLUTANTS SUCH AS PHARMACEUTICALS, PERSONAL CARE PRODUCTS, ADDITIVES, ETC. DESPITE THE SECONDARY TREATMENTS APPLIED, EFFLUENTS FROM THE STPS CAN STILL CONTAIN A LARGE NUMBER OF POLLUTANTS CONTINUOUSLY BEING DISCHARGED INTO BODIES OF WATER. THE CONCENTRATION LEVELS OF INDIVIDUAL POLLUTANTS	GOMEZ RAMOS	MARIA JOSE		FUNDACION IMDEA AGUA	FUNDACION IMDEA AGUA	FUNDACION IMDEA AGUA	01-01-12	31-12-14	MINECO	Spain
CTM2011-23378		NEW PERSPECTIVES IN PHOTOCATALYTIC WASTEWATER REMEDIATION: AN INSIGHT IN THE SELF PHOTO-ACTIVITY OF CARBONACEOUS MATERIALS	ELECTROCHEMISTRY\ICP\PLATINUM\TEXTILE WASTE WATER TREATMENT\REACTIVE DYES	REFLECTING A NEW ENVIRONMENTAL CONSCIENCE, THE EUROPEAN DIRECTIVE 2000/60/CE STRESSES THE NEED TO ADOPT MEASURES AGAINST WATER POLLUTION IN ORDER TO ACHIEVE A PROGRESSIVE REDUCTION OF POLLUTANTS AND TO PROTECT THE POPULATION FROM SANITARY AND ENVIRONMENTAL RISKS. PARTICULARLY, THE POTENTIAL PUBLIC HEALTH IMPACT OF EMERGENT POLLUTANTS ORIGINATED FROM INDUSTRIAL, AGRICULTURAL, AND HUMAN ACTIVITIES IS BECOMING AN IMPORTANT ENVIRONMENTAL ISSUE; SINCE MOST OF THESE CHEMICALS ARE HARDLY BIODEGRADABLE, AND VERY DIFFICULT TO REMOVE FROM THE ENVIRONMENT BY CONVENTIONAL PROCESSES. DRIVEN BY THE DRAWBACKS OF CONVENTIONAL TECHNOLOGIES, A GREAT INTEREST HAS ARISEN ON THE DEVELOPMENT OF ADVANCED PROCESSES FOR WASTEWATER REMEDIATION. IN THIS VIEW, PHOTOCATALYSIS IS A PROMISING TECHNOLOGY, BEING TITANIA (TIO2) THE MOST WIDELY USED PHOTOCATALYST BECAUSE IT IS NON-TOXIC, PHOTO-STABLE AND CHEAP. HOWEVER, NANOSIZED TITANIA POWDERS SUFFERS FROM OPERATIONAL PROBLEMS (LOW RECOVERY, REUSE AND EFFICIENCY; NARROW BAND WIDTH RESPONSE), FOR WHICH ITS IMMOBILIZATION ON DIFFERENT SUPPORTS IS CURRENTLY BEING WIDELY INVESTIGATED. IN THIS LINE, IMMOBILIZING TIO2 ON POROUS SUPPORTS IS BEING INCREASINGLY INVESTIGATED AS A MEANS TO INCREASE PHOTOCATALYTIC ACTIVITY. THIS IS THE CASE,	OVIN ANIA	MARIA CONCEPCION		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO NACIONAL DEL CARBON (INCAR)	INSTITUTO NACIONAL DEL CARBON (INCAR)	01-01-12	31-12-14	MINECO	Spain

CTM2011-27307		ANIMBR: DEVELOPMENT OF A SUSTAINABLE PROCESS FOR WASTEWATER REUSE USING ANAEROBIC INMERSED MEMBRANE BIOREACTOR TECHNOLOGY	POLLUTANT ANALYSIS\ECO-IMPACT\MACROINVERTEBRATE COMMUNITIES\STPS\RIVER BASIN\MONITORING\EVAPOTRANSPIRATION STUDIES\CLIMATE CHANGE\TERTIARY TREATMENTS	IT IS GENERALLY ACKNOWLEDGED THAT THE TECHNOLOGY OF MEMBRANE BIOREACTORS (MBRS) REPRESENTS AN IMPORTANT TECHNICAL OPTION FOR WASTEWATER REUSE, BEING VERY COMPACT AND EFFICIENT SYSTEMS FOR SEPARATION OF SUSPENDED AND COLLOIDAL MATTER AND ENABLING TO ACHIEVE HIGH QUALITY EFFLUENTS, VIRTUALLY DISINFECTED. HOWEVER, THE MAIN LIMITATION FOR ITS WIDESPREAD APPLICATION IS THE PROCESS HIGH ENERGY DEMAND AND THERE IS LITTLE PROSPECT OF A FURTHER DECREASE GIVEN THAT THERE WILL ALWAYS BE A REQUIREMENT FOR MEMBRANE AND BIOLOGICAL AERATION, AND PERMEATE EXTRACTION. RECENTLY, IT HAS ALSO BEEN RECOGNISED THAT ANAEROBIC OPERATION OF MBRS (ANMBR) OFFERS THE ADVANTAGES OF AEROBIC MBR WHILST REQUIRING NO AERATION (WHICH ACCOUNTS FOR UP TO 75% OF THE ENERGY DEMAND OF AN AEROBIC MBR) AND ALSO PROVIDES ENERGY BENEFIT BY GENERATING METHANE. THE GENERAL OBJECTIVE OF THIS PROJECT IS TO ASSESSMENT THE POTENTIAL FEASIBILITY OF A NOVEL SEWAGE TREATMENT PROCESS BASED ON ANAEROBIC IMMERSED MEMBRANE BIOREACTOR (ANIMBR) AND ITS COMBINATION WITH OTHER ADVANCED MEMBRANE SYSTEMS. THIS PROJECT IS FOCUSED TO ACHIEVE, IN ACCORDANCE WITH NATIONAL LEGISLATION (RD1620/2007), A RECLAIMED WASTEWATER SUITABLE FOR REUSE IN AGRICULTURE, RECREATIONAL PURPOSES OR DIRECT AQUIFER RECHARGE.	DELGADO DIAZ	SEBASTIAN		UNIVERSIDAD DE LA LAGUNA	DPTO. INGENIERIA QUIMICA Y TECNOLOGIA FARMACEUTICA	DPTO. INGENIERIA QUIMICA Y TECNOLOGIA FARMACEUTICA	01-01-12	31-12-14	MINECO	Spain
CTM2011-25325		HUMIC ACID-MODIFIED HYDROTALCITES AS FILTERS FOR REMOVAL OF PESTICIDES AND HEAVY METALS FOR DRINKING WATER	GROUNDWATER\HEAVY METALS\ORGANIC COMPOUND\PERMEABLE REACTIVE BARRIER\PERMEABLE REACTIVE BIOBARRIER	THE INCREASING AND EXTENDED USE OF TOXIC INORGANIC AND ORGANIC CHEMICALS, SUCH AS HEAVY METALS, PESTICIDES AND FERTILIZERS, CONTINUOUSLY INCREASES CONTAMINATION OF GROUND AND SURFACE WATER. ONE OF THE MOST EFFICIENT TYPES OF TECHNOLOGY TO REMOVE TOXIC COMPOUNDS FROM CONTAMINATED WATER IS THE USE OF DIFFERENT ADSORPTION METHODS; THEREFORE, DEVELOPMENT OF NEW RECYCLABLE MATERIALS WITH HIGH ADSORPTION ABILITY AND SELECTIVITY IS ONE OF THE CURRENT CHALLENGES IN THIS FIELD. HYDROTALCITE-TYPE (HT) COMPOUNDS HAVE ALREADY SHOWN THEIR CAPACITY AS EFFICIENT ADSORBENTS, BOTH FOR ANIONIC OR CATIONIC SUBSTANCES, AFTER ADEQUATE FUNCTIONALIZATION. THE AIM OF THE CURRENT PROJECT IS TO MODIFY THE ADSORPTION PROPERTIES OF HYDROTALCITE BY INCORPORATION OF HUMIC ACID (HA), FORMING HT-HA COMPLEXES, AND SO MAKING THEM BIFUNCTIONAL ADSORBENTS FOR POLAR AND NON-POLAR PESTICIDES "THROUGH THE ALIPHATIC CHAINS AND RINGS OF THE HUMIC ACID" AND FOR TOXIC METAL CATIONS, THROUGH THE CARBOXYLIC AND PHENOLIC GROUPS). IN TURN, THESE MODIFIED COMPOUNDS BEHAVE AS EFFICIENT FILTERS TO IMMOBILIZE VERY DIFFERENT WATER CONTAMINANTS, AND ENABLES TESTING THE USE OF NATURAL HUMIC	ULIBARRI CORMENZANA	Mª ANGELES		UNIVERSIDAD DE CORDOBA	DPTO. INGENIERIA QUIMICA Y QUIMICA INORGANICA	FACULTAD DE CIENCIAS	01-01-12	31-12-14	MINECO	Spain
CTM2011-25389		PERMEABLE REACTIVE BIOBARRIER FOR THE TREATMENT OF GROUNDWATER	MATHEMATICL MODELLING\WASTEWATER\WWTP\TRANSPORT\CFD	ONE OF THE MOST SERIOUS CONSEQUENCES OF SOIL POLLUTION IS THE EFFECT ON SURFACE AND GROUNDWATER RESOURCES. THAT IS WHY INNOVATIVE TECHNOLOGIES TO MITIGATE THE EFFECTS OF CONTAMINATION IN THESE AQUATIC ENVIRONMENTS ARE NEEDED. CURRENTLY, DIFFERENT IN SITU TECHNIQUES ARE BEING DEVELOPED; INCLUDING ONE OF THE MOST PROMISING IS THE REMEDIATION USING PERMEABLE REACTIVE BARRIERS (BPR). IN THIS TECHNOLOGY, CONTAMINATED GROUNDWATER FLOWS THROUGH THE BPR WHICH FILLER MATERIAL CAN ADSORB, PRECIPITATE OR DEGRADE POLLUTANTS THROUGH PHYSICAL, CHEMICAL OR BIOLOGICAL PROCESSES. OFTEN MIXTURES OF POLLUTANTS, ORGANIC AND INORGANIC, ARE PRESENT IN GROUNDWATER AND IN THESE CASES THE BPR WITH A SINGLE REACTION MEDIUM ARE UNABLE TO ELIMINATE ALL POLLUTION. THAT IS WHY THERE IS A NEED FOR DEVELOPING NEW BPR FOR THE CLEANING OF CONTAMINATED AQUIFERS. IN THIS PROJECT AIMS TO DEVELOP NEW BPR FOR THE TREATMENT OF GROUNDWATER CONTAMINATED WITH COMPOUNDS OF DIVERSE NATURE, FOR WHICH IT INTENDS TO EVALUATE THE MIXING OF DIFFERENT REACTIVE MATERIALS FOR THE FORMATION OF BPR AND BPR COATING WITH MICROBIAL BIOFILM (BIO-BPR). IT WILL INVESTIGATE THE DEGRADATION/ELIMINATION OF REPRESENTATIVE COMPOUNDS OF CONTAMINATION IN AQUIFERS: INORGANIC CONTAMINANTS AS ANIONS AND CATIONS, AND ORGANIC CONTAMINANTS OF LOW SOLUBILITY SUCH AS POLYCYCLIC AROMATIC HYDROCARBONS (PAHS), HIGH SOLUBILITY, SUCH AS DYES. ANOTHER AIM IS TO DEVELOP A MONITORING SYSTEM	PAZOS CURRAS	MARTA Mª		UNIVERSIDAD DE VIGO	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS	01-01-12	31-12-14	MINECO	Spain

CTM2011-28595-C02-01		MODELING AND CONTROL OF ENERGY RECOVERY IN THE FORM OF BIOGAS FROM THE ORGANIC MATTER AND NUTRIENTS PRESENT IN WASTEWATER BY COUPLING AN ANMBR AND A MICROALGAE CULTIVATION	URBAN WASTEWATER\BIOGAS\MICROALGAE\ NUTRIENTS\MEMBRANES\ANAEROBIC\ SLUDGE\VALORIZATION\REUSE\MINIMI ZATION	THE MAIN AIM OF THIS RESEARCH PROJECT IS TO STUDY THE BIOGAS PRODUCTION INCREASE OBTAINED IN AN ANAEROBIC MEMBRANE BIOLOGICAL REACTOR (ANMBR) FOR WASTEWATER TREATMENT DUE TO THE EFFLUENT TREATMENT BY MEANS OF MICROALGAE CULTIVATION INCLUDING THE RECIRCULATION OF THE BIOMASS PRODUCED TO THE ANAEROBIC REACTOR WHERE IT WILL BE DIGESTED AND CONVERTED INTO BIOGAS. THE ANMBR TECHNOLOGY FOR URBAN WASTEWATER ALLOWS THE ORGANIC MATTER TO BE CONVERTED IN BIOGAS MINIMISING SLUDGE PRODUCTION, BUT NUTRIENT REMOVAL CANNOT BE ACHIEVED IN THE ANAEROBIC REACTOR. THEREFORE, THE EFFLUENT FROM THE ANAEROBIC MEMBRANE BIOLOGICAL REACTOR MUST BE APPROPRIATELY TREATED TO ACHIEVE NUTRIENT REMOVAL. THE APPLICATION OF AN ANAEROBIC MEMBRANE BIOREACTOR FOR URBAN WASTEWATER TREATMENT TOGETHER WITH NUTRIENT REMOVAL FROM THE EFFLUENT BY MEANS OF CONVENTIONAL PROCESSES (NITRIFICATION-DENITRIFICATION FOR NITROGEN REMOVAL, AND CHEMICAL PRECIPITATION FOR PHOSPHORUS REMOVAL) ARE BEING STUDIED BY CALAGUA RESEARCH GROUP. IN THIS PROJECT, AN ALTERNATIVE TO CONVENTIONAL TREATMENT FOR NUTRIENT REMOVAL FROM THE ANMBR EFFLUENT BASED ON MICROALGAE CULTIVATION AND ITS FURTHER SEPARATION BY MEMBRANE PROCESSES WILL BE STUDIED. A HIGH QUALITY EFFLUENT WHICH COULD BE REUSED WILL BE OBTAINED DUE TO THE APPLICATION OF MEMBRANE SEPARATION PROCESSES. ON THE OTHER HAND, MICROALGAL CULTURES ARE ABLE TO UPTAKE NUTRIENTS FROM WASTEWATER AS WELL AS CARBON	FERRER POLO	JOSE		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE INGENIERIA DEL AGUA Y MEDIO AMBIENTE - IIAMA	INSTITUTO DE INGENIERIA DEL AGUA Y MEDIO AMBIENTE - IIAMA	01-01-12	31-12-14	MINECO	Spain
CTM2011-28384		ANAEROBIC ASSAYS AND RESPIROMETRIC METHODS TO ASSIST THE DESIGN AND MONITORING OF CONSTRUCTED WETLANDS	URBAN WASTEWATER\BIOGAS\MICROALGAE\ NUTRIENTS\MEMBRANES\ANAEROBIC\ SLUDGE\VALORIZATION\REUSE\MINIMI ZATION	VERTICAL FLOW (VF) AND HORIZONTAL FLOW (FH) SUBSURFACE CONSTRUCTED WETLANDS ARE BEING OF INCREASING USE IN THE TWO LAST DECADES. ADVANCES IN THE DESIGN AND INCREASING EXPERIENCE WITH THE USE OF THESE TECHNOLOGIES ALLOWED A BIG REDUCTION OF THE REQUIRED AREA (UNTIL 1-2 M2/HAB.EQ) AND A HIGH EFFICIENCY, SO THAT CONSTRUCTED WETLANDS CAN BE APPLIED TO THE GLOBAL TREATMENT (SECONDARY AND TERTIARY) OF DOMESTIC WASTEWATER AND ALL TYPES OF INDUSTRIAL EFFLUENTS. WITH THESE AIMS, THE HYBRID SYSTEMS FORMED BY THE COMBINATION OF VF AND HF UNITS SHOW A SPECIAL INTEREST AND NOVELTY. HOWEVER, THE DESIGN METHODS ARE BASED IN EMPIRICAL DATA OBTAINED FROM SINGULAR EXPERIENCES AND DATABASES, WITH PARAMETERS LIKE MAXIMUM SURFACE ORGANIC LOADING RATE OR REQUIRED AREAS PER EQUIVALENT INHABITANT (RULES OF THUMB). SIMPLE NUMERICAL MODELS TODAY APPLIED TREAT THE CONSTRUCTED WETLANDS LIKE BLACK BOXES, OR IN THE BEST OF THE CASES APPLY SIMPLE FIRST ORDER KINETIC MODELS. ATTEMPTS FOR ADVANCED MODELS IN THE LAST YEARS INCLUDE FLOW AND HYDRAULIC TRANSPORT MODELS AND INCORPORATE CRITERIA RELATED TO THE MECHANISMS OF THE PHYSICAL AND BIOLOGICAL REMOVAL AND DEGRADATION PROCESSES. THIS POINT OUT THE EXISTING LACK OF INFORMATION ON THE PARAMETERS DESCRIBING THE BASIC BIOLOGICAL DEGRADATION PROCESS WHICH TAKE PLACE IN CONSTRUCTED WETLANDS.	SOTO CASTIÑEIRA	MANUEL		UNIVERSIDADE DA CORUÑA	DPTO. DE QUIMICA FISICA E INGENIERIA QUIMICA I	FACULTAD DE CIENCIAS	01-01-12	31-12-14	MINECO	Spain
CTM2012-31051		MATHEMATICAL MODELLING AND DYNAMIC SIMULATION OF MASS TRANSPORT AND ENERGY PHENOMENA IN WASTEWATER TREATMENT TECHNOLOGIES	ELECTROCHEMICAL\TEXTILE EFFLUENTS\DYES\RECOVERY\REUSE	ACCORDING TO THIS, THE MAIN GOAL OF THIS PROJECT IS TO DEVELOP AND TEST MATHEMATICAL METHODS AND TECHNIQUES THAT ALLOW THE USER TO CONSTRUCT MATHEMATICAL MODELS ABLE TO DESCRIBE IN A RIGOROUS WAY RELEVANT BIOCHEMICAL, CHEMICAL AND PHYSICO-CHEMICAL PHENOMENA AS WELL AS THE MASS TRANSPORT CONSIDERING HYDRODYNAMIC ASPECTS IN THE STUDIED SYSTEM. TO ACCOMPLISH WITH THIS AIM, THREE MAIN TASKS WILL BE CARRIED OUT: (1) TO UPGRADE WWTP MODELS WITH A MORE RIGOROUS DESCRIPTION OF PHYSICO-CHEMICAL PROCESSES DESCRIBING MASS AND ENERGY TRANSFERS BETWEEN LIQUID, GASEOUS AND SOLID PHASES. (2) TO CONSTRUCT INTEGRATED MODELS THAT COMBINE RELEVANT BIOCHEMICAL, CHEMICAL AND PHYSICO-CHEMICAL PROCESSES IN A WWTP WITH A RIGOROUS MASS TRANSPORT DESCRIPTION BASED ON CFD TECHNIQUES, AND (3) FROM THIS GENERAL MODEL STRUCTURE, TO DEVELOP SYSTEMATIC METHODS OR PROCEDURES FOR IDENTIFYING AND CONSTRUCTING IN EACH CASE STUDY THE OPTIMUM MATHEMATICAL MODEL DEPENDING ON THE DECISIONS TO BE MADE (OPTIMUM DESIGN, OPERATION, DESIGN OF CONTROL STRATEGIES, ETC.).	GRAU GUMBAU	PALOMA		CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	CENTRO DE ESTUDIOS E INVESTIGACIONES TECNICAS	01-01-13	31-12-15	MINECO	Spain

CTM2012-37215-C02-01		DEVELOPMENT OF PILOT PLANT TECHNOLOGY FOR METAL IONS CONTAMINATED WATER TREATMENT BY USING AGRO-FOOD WASTES	PILOT PLANT\AGRO-FOOD WASTE\ELECTROPLATING INDUSTRY\HEXAVALENT CHROMIUM\HEAVY METALS\ENCAPSULATION\REMOVAL\ MONITORING\POTENTIOMETRY\ELECTRONIC TONGUE	THE SURFACE TREATMENT INDUSTRIES USE GREAT AMOUNTS OF WATER IN THEIR PROCESSES. A PART FROM THIS WATER, CONTAMINATED MAINLY BY HEAVY METALS, REPRESENTS 9.4% OF TOTAL GENERATED WASTES BY THESE TYPES OF INDUSTRIES. THE RISING OF RAW MATERIALS PRICE AND THE TIGHTENING OF ENVIRONMENTAL LEGISLATION IS THE 10% OF BUSINESS COSTS. THE TECHNOLOGY PROPOSED IN THIS PROJECT AIMS TO REDUCE THE LARGE AMOUNT OF REAGENTS FOR A LOW COST AGRO-FOOD BIOSORBENTS WITH PROVEN CAPABILITIES TO BE USED IN THE TREATMENT AND DISPOSAL OF METALS IN EFFLUENTS FROM SURFACE TREATMENT INDUSTRIES. THESE BIOSORBENTS ARE BYPRODUCTS OF LOCAL AGRO-FOOD ACTIVITY AND, WITH THIS APPLICATION, WOULD BE VALUED AND WOULD REPLACE EXPENSIVE COMMERCIAL REAGENTS COMMONLY USED IN THE TREATMENT OF SUCH EFFLUENTS. THE SORBENTS WILL BE USED BOTH IN ITS ORIGINAL STATE OR ENCAPSULATED IN CALCIUM ALGINATE BEADS. THE EFFICIENCY IN THE ADSORPTION PROCESS AS WELL AS HANDLING AND MECHANICAL STRENGTH FEATURES WILL BE COMPARED. IN THIS STUDY THE REAL CONTAMINATED WATER SAMPLES WILL COME FROM DIFFERENT SURFACE TREATMENT INDUSTRIES, THEREFORE THEIR COMPOSITION OF METALLIC ELEMENTS WILL BE DIFFERENT. THE PILOT PLANT WILL BE PLANNED TAKING INTO ACCOUNT THE DIFFERENT STAGES OF TREATMENT TO ENSURE THAT, AT THE END OF THE	VILLAESCUSA GIL	Mª ISABEL		UNIVERSITAT DE GIRONA	OPTO INGENIERIA QUIMICA AGRARIA Y TECN. AGROALIMENTARIA	ESCUELA POLITECNICA SUPERIOR	01-01-13	31-12-15	MINECO	Spain
CTM2012-38314-C02-01		THE FATE OF MICROPOLLUTANTS AND DISINFECTION BY-PRODUCTS IN MEMBRANE BIOREACTORS AND REVERSE OSMOSIS OR NANOFILTRATION MEMBRANES FOLLOWED BY DISINFECTION	PHENOL\PHENOLIC COMPOUNDS\IONIC LIQUIDS\LIQUID-LIQUID EXTRACCTION	AS A RESULT OF POPULATION GROWTH, URBANIZATION, AND CLIMATE CHANGE, PUBLIC WATER SUPPLIES ARE BECOMING STRESSED, AND THE CHANCES OF TAPPING NEW WATER SUPPLIES FOR METROPOLITAN AREAS ARE GETTING MORE DIFFICULT. AS A CONSEQUENCE, IN RECENT YEARS EXISTING WATER SUPPLIES WENT FURTHER AND INDIRECT POTABLE REUSE IS NOW A REALITY. NEVERTHELESS, THE PRESENCE OF MICROPOLLUTANTS SHOULD BE THOROUGHLY ANALYSED, AS POTENTIALLY THREATENING FOR PUBLIC HEALTH. MEMBRANE BIOREACTOR TECHNOLOGY (MBR) FOLLOWED BY NANOFILTRATION (NF) OR REVERSE OSMOSIS (RO) IS NOW A CONSOLIDATED INTEGRATED TECHNOLOGY IN WASTEWATER TREATMENT AND REUSE. THE QUALITY OF THE EFFLUENT IS VERY HIGH AND MAY BE THE STARTING POINT FOR THE SO CALLED DIRECT POTABLE REUSE (DPR). HOWEVER, TO DATE NOT MANY STUDIES HAVE DEALT WITH THE REMOVAL OF METALS, PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPS) AS WELL AS DISINFECTION BY-PRODUCTS (DBPS) GENERATED DURING THE TREATMENT; ADDITIONALLY, THERE IS STILL LACK OF KNOWLEDGE ON HOW TO ELIMINATE SUCH PRODUCTS FROM THE CONCENTRATE AND PERMEATE OF THE RO OR NF PROCESSES. ON THE OTHER HAND, MEMBRANE PHOTOCATALYTIC REACTOR (MPR) IS AN EMERGING TECHNOLOGY FOR WATER TREATMENT: HYBRID SYSTEMS COMPRISING TIO2/UV PHOTOCATALYSIS FOLLOWED BY ULTRAFILTRATION (UF). TWO MPR CONFIGURATIONS WITH TIO2 IN SUSPENSION (S-MPR) OR IMMOBILISED IN A COATED MEMBRANE (C-MPR) HAVE BEEN USED IN SURFACE AND DRINKING WATER	RODRIGUEZ-RODA	IGNASI		INSTITUT CATALA DE RECERCA DE L AIGUA FUNDACIO PRIVADA	INSTITUT CATALA DE RECERCA DE L'AIGUA-FUNDACIO PRIVADA ICRA	INSTITUT CATALA DE RECERCA DE L'AIGUA-FUNDACIO PRIVADA ICRA	01-01-13	31-12-15	MINECO	Spain
CTM2012-38720-C03-01		APPLICATION OF METALLOMICS, METABOLOMICS AND INNOVATIVE ANALYTICAL TECHNIQUES IN EXPOSURE EXPERIMENTS OF LIVING ORGANISMS TO CONTAMINANTS. VALIDATION IN ESTUARINE ECOSYSTEMS.		DIAGNOSIS OF ENVIRONMENTAL STRESS REQUIRES THE COMBINATION OF CHEMICAL TESTS OF CONTAMINANTS WITH BIOLOGICAL RESPONSES. THIS RESPONSE CAN BE ESTIMATED BY BIOLOGICAL EXPOSURE EXPERIMENTS, WHICH INTEGRATE SYNERGISM/ANTAGONISM PROCESS AMONG CONTAMINANTS AND INTERACTIONS WITH OTHER COMPOUNDS IN THE ECOSYSTEMS. MODEL ORGANISMS INHABITING THE AREA UNDER STUDY (GUADALQUIVIR RIVER ESTUARY): ALGERIAN MOUSE (MUS SPRETUS), RED CRAB (PROCAMBARUS CLARKII) AND MUD CLAM (SCROBICULARIA PLANA), AND CONTAMINANTS OCCURED IN THE AREA: CD, AS, PESTICIDES (DDE), AND EMERGENT CONTAMINANTS (CES): DRUGS AND ENDOCRINE DISRUPTORS. IN ADDITION, SE DUE TO ITS ANTAGONISM ACTION WITH POLLUTANTS AND SALICORNIA, A PLANT WITH ANTIOXIDANT PROPERTIES, USED BY RODENT IN THE DIET. FINALLY, THE RESPONSE TO NANOPARTICLES WILL BE CHECKED. THESE EFFECTS WILL BE EVALUATED BY METALLOMIC TECHNIQUES, TOPIC IN WHICH THE APPLYING GROUP AS A GREAT EXPERIENCE. CHANGES IN EXPRESSION OF BIOMOLECULES WILL BE TRACED BY ANALYTICAL EXCLUSION CHROMATOGRAPHY WITH ICP-MS DETECTION (SEC-ICP-MS), USING DIFFERENT MASS RANGE, AND COMPLEMENTARY A SECOND CHROMATOGRAPHY SEPARATION (RP, IEC- O HILIC-ICP-MS) OF FRACTION ISOLATED BY PREPARATIVE SEC. THE MOLECULES	GOMEZ ARIZA	JOSE LUIS		UNIVERSIDAD DE HUELVA	FACULTAD DE CIENCIAS EXPERIMENTALES	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-13	31-12-15	MINECO	Spain

CTM2012-36227		INNOVATIVE INTEGRATED BIOLOGICAL PROCESSES FOR NUTRIENT REMOVAL	PILOT PLANT\AGRO-FOOD WASTE\ELECTROPLATING INDUSTRY\HEXAVALENT CHROMIUM\HEAVY METALS\ENCAPSULATION\REMOVAL\ MONITORING\POTENTIOMETRY\ELECTRONIC TONGUE	WASTEWATER TREATMENT INDUSTRY MOVES TOWARDS INNOVATION BASICALLY DRIVEN BY THE LEGISLATION REQUIREMENTS. NEVERTHELESS, THE GROWING CONCERNS FOR ENERGY CONSUMPTION, EMISSIONS AND SPACE OCCUPATION AS "OTHER" ENVIRONMENTAL IMPACTS OF THE WWTPS MAY MORE EFFECTIVELY LEAD TO INNOVATION, PROVEN ITS CAPABILITY TO PROVIDE ECONOMICALLY ATTRACTIVE SOLUTIONS. ON A SHORT-MEDIUM TERM, THE NEED TO UP-GRADE TO NUTRIENT REMOVAL IS ONE OF THE MAJOR CHALLENGES FOR MANY WASTEWATER TREATMENT PLANTS (WWTPS) DISCHARGING IN SENSITIVE AREAS. THEREFORE, IT IS ESSENTIAL TO FIND OUT SOLUTIONS TO TARGET THIS NEED, BOTH FOR THE DESIGN OF NEW WWTPS AND FOR RETROFITTING EXISTING INSTALLATIONS BY PROFITING THE AVAILABLE SPACE. MOREOVER THAN CONVENTIONAL BIOLOGICAL TREATMENT PROCESSES, INTEGRATED BIOLOGICAL TREATMENTS (IBT) ARE THOSE THAT COMBINE IN A SINGLE REACTOR OR IN SEPARATE IN SERIES REACTORS, THE TWO TYPES OF BIOMASSES: SUSPENDED (ACTIVATED SLUDGE) AND ATTACHED-GROWTH (BIOFILM). IBT ACHIEVE THE ADVANTAGES AND OVERCOMES THE DRAWBACKS OF THE SINGLE BIOMASS SYSTEMS. THE MAIN USE OF SUCH TYPE OF PROCESS, SO FAR, HAS BEEN ORGANIC MATTER REMOVAL INCLUDING IN FEW CASES NITROGEN REMOVAL. THE OVERALL OBJECTIVE OF THIS PROJECT IS TO PROPOSE AN INNOVATIVE INTEGRATED BIOLOGICAL PROCESS CONCEIVED TO ACHIEVE ORGANIC MATTER AND NUTRIENTS (N AND P) REMOVAL AT THE SAME TIME. SUCH PROCESS IS MADE OF A SLUDGE BED REACTOR INCLUDING AN ANAEROBIC AND AN ANOXIC ZONE, FOLLOWED BY A BIOFILM REACTOR IN SLIGHTLY HYBRID CONFIGURATION.	TEJERO MONZON	JUAN IGNACIO		UNIVERSIDAD DE CANTABRIA	OPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-13	31-12-15	MINECO	Spain
CTM2012-38720-C03-03		ASSESSMENT OF THE EFFECTS OF EXISTING AND NEW CONTAMINANTS IN AQUATIC ORGANISMS. CONTROLLED EXPOSURE BIOASSAYS AND IN SITU VALIDATION IN ESTUARINE ECOSYSTEMS		ESTUARINE ECOSYSTEMS ARE GENERALLY SUBJECTED TO IMPACT FROM HUMAN ACTIVITY, AND CONSEQUENTLY MANY POLLUTANTS ARE PRESENT IN THEIR WATERS. THIS MAY HAVE ADVERSE EFFECTS ON BIOTA AND ALTER THE STRUCTURE AND FUNCTIONING OF ECOSYSTEMS. KNOWLEDGE OF THE MECHANISMS OF TOXICITY AND ECOTOXICOLOGICAL EFFECTS OF CONVENTIONAL AND EMERGING CONTAMINANTS ON INDIVIDUAL ORGANISMS IS LIMITED, AS WELL AS THEIR POSSIBLE SYNERGISTIC OR ANTAGONISTIC EFFECTS IN A MIXTURE. THEREFORE, OUR PROPOSAL WILL ANALYZE THE MECHANISMS OF TOXICITY OF DIFFERENT KINDS OF CONTAMINANTS AT ENVIRONMENTALLY RELEVANT CONCENTRATIONS IN ORGANISMS, REPRESENTATIVE OF THIS TYPE OF ECOSYSTEM AND BELONGING TO DIFFERENT TROPHIC LEVELS (THE CRAYFISH, PROCAMBARUS CLARKII, THE BIVALVE MOLLUSK, SCROBICULARIA PLANA AND THE MARINE MICROALGAE, PHAEODACTYLUM TRICONUTUM AND RHODOMONAS SALINA). IN ORDER TO COVER A WIDE RANGE OF POLLUTANTS AND SCENARIOS, WE WILL STUDY THE MOLECULAR EFFECTS CAUSED BY CONVENTIONAL POLLUTANTS (AS, CD) AS WELL AS POSSIBLE EFFECTS OF ANTAGONISTS SUCH AS SE, BY EMERGING CONTAMINANTS (MIXTURES OF PHARMACEUTICAL COMPOUNDS: FLUOROQUINOLONE, TETRACYCLINE AND A NONSTEROIDAL	BLASCO MORENO	JULIAN		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE CIENCIAS MARINAS DE ANDALUCIA (ICMAN)	INSTITUTO DE CIENCIAS MARINAS DE ANDALUCIA (ICMAN)	01-01-13	31-12-15	MINECO	Spain
CTM2012-37591		DESIGN AND DEVELOPMENT OF A MOBILE STRUCTURE FOR THE ENVIRONMENTAL RISK ASSESSMENT OF RESIDUAL WATER TREATMENT PLANT EFFLUENTS DISCHARGED IN MARINE ECOSYSTEMS	WASTEWATER\ALGAE BIOMASS\BIOGAS\PRODUCTION\HIGH RATE ALGAL POND\PHOTOBIOREACTOR	MUNICIPAL EFFLUENTS ARE RECOGNIZED AS A MAJOR SOURCE OF MANY ENVIRONMENTAL CONTAMINANTS, INCLUDING POLYAROMATIC HYDROCARBONS, PESTICIDES, SURFACTANTS, STEROIDS, AND METALS. RECENTLY, PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPS) WERE IDENTIFIED AS AN EMERGING CLASS OF POTENTIAL POLLUTANTS FOR THE AQUATIC ENVIRONMENT. MOST DOMESTIC AND SOME INDUSTRIAL WASTEWATERS ARE PROCESSED BY MUNICIPAL WASTEWATER TREATMENT PLANTS (OECD 2004). OVER THE LAST 20 YEARS, THE RELEASE OF CONTAMINANTS HARMFUL TO THE MARINE ECOSYSTEMS HAS SUBSTANTIALLY DECREASED. DESPITE THESE IMPROVEMENTS IN WASTEWATER TREATMENT, EFFLUENTS ARE STILL CONSIDERED IMPORTANT SOURCES OF POLLUTION FOR BOTH MARINE AND FRESHWATER ECOSYSTEMS. IT HAS BEEN DEMOSTRATED BY DIFFERENT AUTHORS THAT THESE EFFLUENTS, CONTAINING METALS, POLYAROMATIC HYDROCARBONS, ENDOCRINE DISRUPTORS AND PHARMACEUTICALS ARE POTENTIALLY TOXIC TO AQUATIC ORGANISMS (GENOTOXICITY, NEUROTOXICITY, INMUNOTOXICITY AND REPRODUCTION ALTERATION) (BOUCHARD ET AL., 2009). THE PURPOSE OF THIS PROJECT, IS THEREFORE TO TEST THE HYPOTHESIS WHETHER MUNICIPAL EFFLUENTS COULD ALTER THE HEALTH STATUS OF THE MARINE ECOSYSTEMS WHERE ARE DISCHARGED.	MARTIN DIAZ	MARIA LAURA		UNIVERSIDAD DE CADIZ	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	FACULTAD DE CIENCIAS DEL MAR Y AMBIENTALES	01-01-13	31-12-15	MINECO	Spain

CTM2012-31461		ELECTROCHEMICAL TREATMENT OF DYES AND REUSE OF INDUSTRIAL EFFLUENTS	BIOSURFACTANT\LACTOBACILLUS\PAHS\SOIL\SEWAGE SLUDGE	THE TEXTILE DYES COULD BE CONSIDERED POLLUTANTS. THEREFORE, THEIR REMOVAL FROM WASTEWATERS IS VERY IMPORTANT. OUR STUDIES WERE FOCUSSED ON THE DEGRADATION OF REACTIVE DYES. THIS KIND OF DYES HAS LOW DEGREES OF EXHAUSTION BECAUSE THEY REACT WITH THE FIBRE BUT ALSO A SECONDARY IRREVERSIBLE REACTION BETWEEN DYES AND WATER TAKES PLACE (DYES HYDROLYSIS). THE BIOLOGICAL PLANTS ARE INEFFICIENT FOR THE TREATMENT OF THESE HYDROLYSED DYES, AND THE ELECTROCHEMICAL TECHNIQUES DEMONSTRATED TO BE A VIABLE ALTERNATIVE. IN THE LAST PROJECTS, OUR RESEARCH GROUP FOUND THAT THE BEST OPTION WAS THE TREATMENT OF DYEING EFFLUENTS ALONE (COLOURED AND WITH HIGH SALINITY), AND AFTER THEIR DECOLOURATION THEY CAN BE DISCHARGED TO THE BIOLOGICAL PLANT (IN ORDER TO FINISH THEIR DEGRADATION) OR THEY CAN BE REUSED IN A NEW DYEING PROCESS. THIS LAST OPTION, HAVE BOTH ENVIRONMENTAL AND ECONOMIC ADVANTAGES BECAUSE THE WATER AND SALT CONSUMPTION IS REDUCED, THAT ALSO DECREASES THE EFFLUENTS SALINITY. THE FINAL RESULTS WERE EXCELLENT FOR DYEINGS WITH ONLY ONE DYE (MONOCHROMIES). BUT THE EFFLUENTS REUSED WITH DICHROMIES AND TRICHROMIES HAS NOT YET ACHIEVED ACCEPTABLE RESULTS. MOREOVER, THE CARBONATES HAVE TO BEEN REMOVED BEFORE THE DYEING WILL BE INITIATED, BECAUSE THEY INCREASE THE HYDROLYSIS REACTION AND DECREASES THE EFFICIENCY.	GUTIERREZ BOUZAN	MARIA CARMEN		UNIVERSITAT POLITECNICA DE CATALUNYA	INSTITUTO DE INVESTIGACION TEXTIL Y COOPERACION INDUSTRIAL DE TERRASSA (INTEXTER)	INSTITUTO DE INVESTIGACION TEXTIL Y COOPERACION INDUSTRIAL DE TERRASSA (INTEXTER)	01-01-13	31-12-15	MINECO	Spain
CTM2012-32538		ANALYSIS OF KEY ASPECTS OF THE DISPERSION OF INDUSTRIAL WASTEWATERS TO DELIMIT ENVIRONMENTAL MIXING ZONES	MATHEMATICL MODELLING\WASTEWATER\WWTP\TRANSPORT\CFD	IN THE VERTITOX RESEARCH PROJECT (018/RN08/02.1), WHERE THE PRINCIPAL RESEARCHER (IP) OF THIS APPLICATION TOOK PART, A METHODOLOGY FOR DELIMITATION OF ENVIRONMENTAL MIXING ZONES OF URBAN AND INDUSTRIAL DISCHARGES WAS DEVELOPED. THAT WORK ALLOWED VERIFICATION OF THE EXISTENCE OF CRITICAL ISSUES IN ESTABLISHING THE EXTENT OF THESE AREAS. SUCH ISSUES LIE IN THE STATISTICAL TREATMENT OF THE ENVIRONMENTAL VARIABLES (CURRENTS, SALINITY, SUSPENDED SOLIDS AND PH), CHARACTERIZATION OF THE INITIAL MIXING OF THE DISCHARGE, AND KNOWLEDGE OF THE INTERACTIONS BETWEEN POLLUTANT AND SEDIMENT. THE NEED FOR A DEEPER UNDERSTANDING OF THESE ASPECTS AND THEIR IMPACT ON THE WATER QUALITY MANAGEMENT POSE TO THE IP THE OPPORTUNITY TO OPEN A NEW RESEARCH LINE THAT WILL GIVE CONTINUITY TO THE VERTITOX PROJECT PROGRESS. THEREFORE, THIS PROJECT AIMS AT DETAILED CHARACTERIZATION OF THE MOST SIGNIFICANT PROCESSES THAT DETERMINE THE DISPERSION OF INDUSTRIAL DISCHARGES ON ESTUARIES AND THEIR INTEGRATION TO ESTABLISH ENVIRONMENTAL MIXING ZONES INTO PROBABILISTIC TERMS. SPECIFICALLY, WE PROPOSE: 1) DELVING INTO THE STATISTICAL ANALYSIS OF ENVIRONMENTAL VARIABLES USING TECHNIQUES BASED ON SELF-ORGANIZING MAPS, 2) RESEARCHING THE INFLUENCE OF ESTUARINE HYDRODYNAMICS IN THE INITIAL MIXING OF SINGLE PORT DISCHARGES OF EFFLUENTS WITH POSITIVE BUOYANCY, 3) UNDERSTANDING THE INFLUENCE OF	GARCIA GOMEZ	ANDRES		UNIVERSIDAD DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	INSTITUTO DE HIDRAULICA AMBIENTAL DE CANTABRIA	01-01-13	31-12-15	MINECO	Spain
CTM2012-37860		PRODUCTION AND DIGESTION OF ALGAL BIOMASS PRODUCED FROM WASTEWATERS	MEMBRANES\MICROPOLLUTANTS\WATER REUSE\WASTEWATER\REVERSE OSMOSIS\NANOFILTRATION\DISINFECTION\DISINFECTION BY PRODUCTS\ADVANCED OXIDATION PROCESSES	THIS PROJECT AIMS AT IMPROVING ALGAL BIOMASS PRODUCTION IN WASTEWATER TREATMENT SYSTEMS AND STUDY BIOGAS PRODUCTION FROM ALGAL BIOMASS DIGESTION. THE HYPOTHESIS IS THAT IN WASTEWATER TREATMENT SYSTEMS AN INCREASE ALGAL BIOMASS PRODUCTION IN JUSTIFIED IN ORDER TO EXPLOIT BIOMASS POTENTIAL ENERGY THROUGH ANAEROBIC DIGESTION, BECAUSE THIS IS A VERY WELL KNOWN PROCESS AND FULL SCALE INFRAESTRUCTURE EXIST. SPECIFIC OBJECTIVES ARE: IMPROVE ALGAL BIOMASS PRODUCTION BY CO2 INJECTION, IMPROVE PRODUCTION THROUGH EFFICIENT SEPARATION OF BIOMASS, DETERMINE THE POTENTIAL FOR BIOGAS PRODUCTION FROM ALGAL BIOMASS, DEVELOP A NUMERICAL SIMULATION MODEL FOR BIOMASS PRODUCING SYSTEMS AND ANALYZE THE TECHNICAL, ECONOMIC AND ENVIRONMENTAL ISSUES OF THE SYSTEM. THE PROJECT IS DEVELOPED BY GRUPO DE INGENIERIA Y MICROBIOLOGIA DEL MEDIO AMBIENTE DE LA UNIVERSIDAD POLITECNICA DE CATALUNYA (GEMMA-UPC). FOR THE PROJECT THERE WILL BE TWO EXPERIMENTAL FACILITIES: HIGH RATE ALGAL PONDS AND A PHOTOBIOREACTOR.	GARCIA SERRANO	JOAN		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA HIDRAULICA, MARITIMA Y AMBIENTAL	ESCUELA TECNICA SUPERIOR DE ING. CAMINOS, CANALES Y PUERTOS	01-01-13	31-12-15	MINECO	Spain

CTM2012-34449		SYNTHESIS OF ZEOLITE FROM NON CONVENTIONAL RAW MATERIAL AND ITS USE FOR THE TREATMENT OF AQUEOUS EFFLUENT CONTAMINATED WITH ENDOCRINE DISRUPTORS	PHOTOCATALYSIS\ADSORPTION\ARSENIC\CHROMIUM\WATER TREATMENT	THE PROJECT PROPOSED IN THIS DOCUMENT, AIMS TO VALORIZE A HAZARDOUS WASTE COMING FROM ALUMINIUM INDUSTRY, BY ITS TRANSFORMATION INTO ZEOLITES, AND THE USE OF THESE ZEOLITES TO REMOVE METALS SUCH AS CD, PB Y HG, CONSIDERED AS ENDOCRINE DISRUPTORS. THE ELIMINATION OF ENDOCRINE DISRUPTORS FROM WATER RESOURCES IS ONE OF THE PRIORITIES OF THE UNITED NATIONS. IT IS ALSO INTENDED TO USE DIFFERENT TECHNOLOGIES (SYNTHESIS IN A REACTOR PRESSURE, MICROWAVE OVEN AND FLUIDIZED BED SOLAR-POWERED OVEN) TO DEFINE THE BEST AVAILABLE TECHNOLOGY FOR TRANSFORMING WASTE INTO ZEOLITE AND ALSO TO DEMONSTRATE THE TECHNOLOGICAL FEASIBILITY OF SOLAR ENERGY AS AN ALTERNATIVE TO CONVENTIONAL ENERGY. BESIDES, IT IS PLANNED TO RUN TESTS TO LARGER SCALE WITH AN AUTOCLAVE REACTOR, OWNED BY ONE EPO, AND THAT WILL BE AVAILABLE FOR THE PROJECT. THIS WAY IS ACHIEVED THE EXPLOITATION OF A WASTE AS BY-PRODUCT, THE DISPOSAL OF ENVIRONMENTAL HAZARD ASSOCIATED TO LANDFILL DEPOSITION, THE REVALORIZATION OF A WASTE BY TRANSFORMATION INTO A VALUABLE MATERIAL AND THE USE OF THE REVALORIZED PRODUCT IN THE TREATMENT OF CONTAMINATED EFFLUENTS, CONTRIBUTING TO PRESERVE	LOPEZ DELGADO	AURORA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	METALURGIA PRIMARIA Y RECICLADO DE MATERIALES	CENTRO NACIONAL DE INVESTIGACIONES METALURGICAS (CENIM)	01-01-13	31-12-15	MINECO	Spain
CTM2012-32279		FUNDAMENTALS OF THE "BIOGAS EXPLOSION" PROCESS. APPLICATION TO PRE-TREATMENT OF SLUDGE IN WASTEWATER TREATMENT PLANTS.		THE ENERGY CONTENT OF ORGANIC MATTER IN WASTEWATER IS HIGHER THAN THE ENERGY REQUIRED FOR REMOVAL. THROUGH ITS TRANSFORMATION INTO BIOGAS SLUDGE IS THE ONLY STREAM THAT CAN PRODUCE ENERGY IN A WASTEWATER TREATMENT PLANT. IMPLEMENTING SLUDGE TREATMENT PROCESSES, PRIOR TO ANAEROBIC DIGESTION, IT IS POSSIBLE TO ACHIEVE NEUTRAL OR EVEN POSITIVE ENERGY BALANCES. IN THIS SENSE, THERMAL HYDROLYSIS "STEAM EXPLOSION" IS WIDELY USED TO INCREASE METHANE PRODUCTION. IN PARALLEL THE "AMMONIA EXPLOSION" PROCESS IS USED IN THE FIELD OF STRAW HYDROLYSIS. ANALYZING THE MECHANISMS OF BOTH PROCESSES IS POSSIBLE TO CONCLUDE THAT A PROCESS OF "BIOGAS EXPLOSION" CAN LEAD TO RESULTS SIMILAR TO THOSE OF THE "STEAM EXPLOSION". IN THE ABSENCE OF BIBLIOGRAPHICAL REFERENCES WE SUGGEST A BASIC STUDY TO ESTABLISH THE FUNDAMENTALS AND EFFICIENCY OF THE NEW PROCESS. BASED ON PRIOR EXPERIENCE WE WILL DESIGN AND BUILD A BENCH TO EXPERIMENTALLY STUDY THE PROCESS OF "BIOGAS EXPLOSION". FIRST APPLYING THE TRADITIONAL METHODOLOGY (VARYING ONE PARAMETER AND MAINTAINING THE REST CONSTANT) AND THEN USING DESIGN OF EXPERIMENT TOOLS, WE SHALL ESTABLISH THE INFLUENCE OF: TYPE OF GAS (CO_2, CH_4, BIOGAS), CONCENTRATION AND TYPE OF SLUDGE (PRIMARY AND SECONDARY), RATIO SLUDGE/GAS, PRESSURE IN THE HYDROLYSIS AND FLASH CHAMBERS, TIME OF OPERATION AND TEMPERATURE.	FERNANDEZ-POLANCO	MARIA		UNIVERSIDAD DE VALLADOLID	ESCUELA DE INGENIERIAS INDUSTRIALES	ESCUELA DE INGENIERIAS INDUSTRIALES	01-01-13	31-12-15	MINECO	Spain
CTQ2007-67792-C02-01		WATER TREATMENTS TO ELIMINATE POLLUTANTS SUCH AS PHARMACEUTICAL DERIVATIVES BY ADVANCED OXIDATION PROCESSES AND ADSORPTION/BIOADSORPTION ON CARBON MATERIALS.	AGRICULTURAL POLLUTANTS\ACTIVATED CARBON\ADSORPTION\BIOADSORPTION\REGENERATION	THE OVERALL AIM OF THE PROPOSED PROJECT IS TO STUDY DIFFERENT PROCESSES FOR THE REMOVAL OF DIFFERENT CONTAMINANTS FROM WATER SUCH AS: HERBICIDES, FREQUENTLY USED IN THE OLIVE GROVES (DIURON, AMITROLE, TERBUTILAZINE Y FLUROXYPYR) PRESENT IN WATERS OF AGRICULTURAL USE, AND DERIVATIVES FROM PHARMACEUTICAL PRODUCTS (NITROIMIDAZOLES AND ENDOCRIN DISRUPTORS) THAT ARE, FREQUENTLY, IN URBAN WASTEWATERS. THESE TREATMENTS WILL BE CARRIED OUT USING ADSORPTION/BIOADSORPTION ON ADVANCED CARBON MATERIALS, CATALYZED OZONATION, CATALYZED PHOTOOXIDATION AND GAMMA RADIOLYSIS. IN THE ADSORPTION PROCESSES NOVEL CARBON MATERIALS SUCH AS ACTIVATED CARBON FIBERS, CLOTHS AND FELTS WILL BE USED. BESIDES, SOME OF THE ADSORBENT MATERIALS TO BE USED WILL BE PREPARED IN OUR LABORATORIES FROM PETROLEUM COKE, ORGANIC POLYMERS AND SEWAGE SLUDGE. IN ORDER TO IMPROVE THE YIELD OF THE CONTAMINANT REMOVAL PROCESSES, IN SOME CASES, ADSORPTION PROCESSES WILL BE CARRIED OUT IN PRESENCE OF BACTERIA, WHICH WILL ENHANCE THESE PROCESSES THROUGH BIODEGRADATION OF THE CONTAMINANTS AND/OR PARTICIPATION OF THE BACTERIA IN THEIR ADSORPTION (BIOADSORPTION). MOREOVER, A STUDY OF DIFFERENT METHODS TO REGENERATE THE CARBON MATERIALS AFTER THEIR ADSORPTION CAPACITY IS	RIVERA UTRILLA	JOSE		UNIVERSIDAD DE GRANADA	FACULTAD DE CIENCIAS	FACULTAD DE CIENCIAS	01-10-07	31-12-10	MINECO	Spain

CTQ2007-66178		OLIVE MILL WASTEWATER TREATMENT FOR REUSE BY MEANS FENTON PROCESS AND LATER PURIFICATION FOR BIOSORPTION	SEWAGE\PHARMACEUTICALS\COSMETICS\SEQUENTIAL AND HYBRID MBR\OZONATION\ACTIVE CARBON\MODELLING\ENVIRONMENTAL RISK ASSESSMENT	THE PRODUCTIVE PROCESS OF OBTAINING OF OLIVE OIL, AT THE MOMENT BEARS THE PRODUCTION OF TWO TYPES OF WASTEWATERS WHOSE SEGREGATION IS FORCED USING RAFTS OF ACCUMULATION: A) THOSE COMING FROM THE LAUNDRY MACHINES OF THE OLIVE BEFORE THEIR ENTRANCE TO THE PROCESS AND B) THOSE THAT TAKE PLACE WHEN THE OLIVE OIL IS WASHING IN VERTICAL CENTRIFUGE THESE WASTEWATERS HAVE BEEN USED UNTIL FEW YEARS AGO FOR WATERING IN THE OWN OLIVE GROVE; HOWEVER THE CONFEDERATION HIDROGRAFICA OF THE GUADALQUIVIR AND THE ENVIRONMENT MINISTRY, BASED ON THE LAW OF WATERS OF 1/2001 , OVER REUSE OF WASTEWATERS, ARE PROHIBITED THEIR INDISCRIMINATE USE FROM 2002, DEMANDING SOME CONCENTRATIONS EVERY TIME LOWER AND LOWER IN CERTAIN PARAMETERS THAT HAVE LEFT REDUCING YEAR AFTER YEAR. THIS PARAMETERS AT THE MOMENT DON?T OVERCOME 1000 PPM OF DQO, 1000 PPM OF DBO, 600 PPM OF SUSPENDED SOLIDS AND PH 6-9, PARAMETERS THAT THESE WATERS DON?T COMPLETE, AND FOR THAT THEIR TREATMENT IS FORCED.. ON THE OTHER HAND, ALSO, THEY WILL CAN CONTAIN POLLUTING SUBSTANCES THAT FIGURE IN THE EEC DIRECTIVE 76/464 AND 80/68/EEC, COMING FROM PESTICIDES PRODUCTS. THAT IS A SERIOUS PROBLEM FOR OVER OF 800 ANDALUSIAN OLIVE MILLS THAT HAVE TO	MARTINEZ NIETO	LEOPOLDO		UNIVERSIDAD DE GRANADA	OPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS	01-10-07	31-12-10	MINECO	Spain
CTQ2007-64324		STUDY AT MICROBIOLOGICAL AND PROCESS LEVELS OF THE INTERACTIONS BETWEEN NITRIFICATION-DENITRIFICATION AND BIOLOGICAL PHOSPHOROUS REMOVAL IN WASTEWATER TREATMENT	DEPURATION\OLIVE MILL WASTEWATER\OLIVE OIL PROCESS\WASTEWATER REUSE\FENTON\BIOSORPTION	LEGISLATION EVOLUTION AND THE INCREASE IN THE KNOWLEDGE OF THE BASIS OF THE PROCESS INVOLVED IN WASTEWATER TREATMENT HAVE MODIFIED THE OBJECTIVES TO BE REACHED IN WASTEWATER TREATMENT PLANTS. ACTUALLY, AN IMPORTANT PART OF THESE PLANTS INCLUDE NITROGEN (NITRIFICATION AND DENITRIFICATION) AND BIOLOGICAL PHOSPHOROUS REMOVAL. THE COMBINATION OF THESE PROCESS INVOLVE THE COEXISTENCE OF DIVERSE MICROORGANISMS WHOSE OPTIMAL OPERATIONAL CONDITIONS ARE VERY DIFFERENT, AND BY THIS IT IS NECESSARY TO REACH AN EQUILIBRIUM CONDITIONS. BIOLOGICAL PHOSPHOROUS REMOVAL IS HEAVILY INFLUENCED BY NITRIFICATION AND DENITRIFICATION PROCESSES AND BY THE ENVIRONMENTAL CONDITIONS THAT FAVOURS THE SECONDARY RELEASE OF PHOSPHOROUS. THIS PROJECT PRETENDS TO STUDY THE INFLUENCE AND OPTIMISATION OF THE MAIN VARIABLES THAT INFLUENCE THE BIOLOGICAL NUTRIENTS REMOVAL, WHIT SPECIAL EMPHASIS IN THE INFLUENCE OF THE NITRIFICATION-DENITRIFICATION PROCESSES OVER BIOLOGICAL PHOSPHOROUS REMOVAL. THE STUDY WILL BE CARRIED OUT IN A FULL SCALE PLANT IN WHICH THE INFLUENCE OF OPERATIONAL CONDITIONS OVER PROCESS YIELD AND STABILITY WILL BE ANALYSED, AND IN LAB SCALE REACTORS	GARCIA ENCINA	PEDRO ANTONIO		UNIVERSIDAD DE VALLADOLID	DPTO. DE INGENIERIA QUIMICA Y TECNOLOGIA DEL M. AMBIENTE	DPTO. DE INGENIERIA QUIMICA Y TECNOLOGIA DEL M. AMBIENTE	01-10-07	30-09-10	MINECO	Spain
CTQ2007-66885		OPTIMIZATION OF SEWAGE SLUDGE VALORIZATION BY PYROLYSIS AND GASIFICATION THERMOCHEMICAL PROCESSES	PHARMACEUTICAL POLLUTANTS\ACTIVATED CARBON\ADSORPTION\BIOADSORPTION\OZONATION\PHOTOOXIDATION\GAMMA RADIOLYSIS	THIS PROJECT HAS AS MAIN OBJECTIVE TO STUDY IN DEPTH THE SEWAGE SLUDGE PYROLYSIS AND GASIFICATION PROCESSES AS ENERGY VALORIZATION ALTERNATIVES OF SUCH A WASTE.IN PREVIOUS WORKS ALREADY CARRIED OUT BY THIS RESEARCH GROUP, IT WAS STARTED THE STUDY OF SEWAGE SLUDGE GASIFICATION PROCESSES, POINTING IT TOWARDS THE OPTIMIZATION OF SEVERAL OPERATION VARIABLES. THIS OPTIMIZATION ALLOWS US TO MAXIMIZE THE ENERGETIC EXPLOITATION OF THE FUEL GAS PRODUCED OR THE USE AS SYNTHESIS GAS. SUCH A STUDY ALSO WENT AFTER THE AIM OF ENVIRONMENTAL OPTIMIZATION OF THE PROCESS BY MEANS OF BOTH REDUCING TARS PRESENT AT PRODUCED GAS AND CONTROL OF OTHER CONTAMINANTS SUCH AS AMMONIA. THE RESULTS OBTAINED OF THESE WORKS HAVE SHOWN US THE INTEREST IN GOING ON STUDYING BOTH GASIFICATION AND PYROLYSIS PROCESS. LAST ONE, PYROLYSIS, IS GOING TO STUDY FROM A NEW POINT OF VIEW WICH INCLUDES NOT ONLY THE STUDY OF PYROLYSIS AS A PREVIOUS STAGE OF GASIFICATION BUT ALSO AS SEWAGE SLUDGE ENERGY VALORIZATION PROCESS WICH PROVIDES INTERESTING PRODUCTS OF SEVERAL APPLICATION.SO THEN THIS PROJECT PROPOSES TO DO THE FOLLOWING OBJECTIVES:1.- TO WIDEN THESEWAGE SLUDGE GASIFICATION KNOWLEDGE IN ORDER TO ENERGETIC OPTIMIZATION OF THE PROCESS. THIS OBJECTIVE WILL BE	MURILLO ESTEBAN	MARIA BENITA		UNIVERSIDAD DE ZARAGOZA	INSTITUTO DE INVESTIGACION EN INGENIERIA DE ARAGON -I3A-	INSTITUTO DE INVESTIGACION EN INGENIERIA DE ARAGON -I3A-	01-10-07	30-09-10	MINECO	Spain

CTQ2007-63949		TOWARDS ENHANCED AND ENVIRONMENTALLY RESPONSIBLE ANALYTICAL METHODS FOR THE DETERMINATION OF EMERGING POLLUTANTS. FOCUS ON THE WATER CYCLE AND WATER TREATMENT PROCESSES	SCREENING\AUTOMATION\CHROMATOGRAPHY\CAPILLARY ELECTROPHORESIS\DISINFECTION BY-PRODUCTS	THE PERSPECTIVE OF ANALYTICAL CHEMISTRY RESPECT TO ENVIRONMENTAL AND PARTICULARLY WATER CONTAMINATION HAS EVOLVED DURING THE LAST YEAR TOWARDS A NEW GROUP OF CHEMICALS, NAMED WITH THE GENERIC TERM ¿EMERGING CHEMICALS¿. THESE POLLUTANTS COVER A WIDE AND HETEROGENEOUS GROUP, WHICH, HOWEVER, IN MANY CASES SHARE SEVERAL CHARACTERISTICS, LIKE E.G.: MASSIVE USE IN LOCALIZED (MAINLY HOUSEHOLD, BUT IN SOME CASES ALSO AGRICULTURAL OR INDUSTRIAL) SCENARIOS, HIGH WATER SOLUBILITY AND LOW TEND TO BIO-ACCUMULATE, WHICH CONTRIBUTES INTO THEIR SPREAD THOUGH THE WATER CYCLE. MOREOVER, THERE IS A LACK OF KNOWLEDGE ON THE FATE OF THESE CONTAMINANTS IN THE ENVIRONMENT, DUE IN PART TO THE ANALYTICAL CHALLENGE OF THEIR DETERMINATION. ON THE OTHER HAND, ACCORDING TO THE ACTUAL TREND IN THE FIELD OF ANALYTICAL CHEMISTRY, THE ANALYTICAL METHODOLOGY TO BE DEVELOPED MUST BE ENVIRONMENTALLY RESPONSIBLE IN A WAY THAT THE AMOUNT OF ORGANIC SOLVENTS CONSUMED AND MANIPULATED CAN BE REDUCED AS MUCH AS POSSIBLE, DUE TO THE ENVIRONMENTAL AND HEALTH RISKS FOR ANALYSTS ASSOCIATED WITH ORGANIC SOLVENTS. BESIDES THIS, OTHER IMPORTANT PARAMETERS ARE REDUCTION IN SAMPLE INTAKE AND ANALYSIS TIME,	PRADA RODRIGUEZ	DARIO		UNIVERSIDADE DA CORUÑA	INSTITUTO UNIVERSITARIO DE MEDIO AMBIENTE	INSTITUTO UNIVERSITARIO DE MEDIO AMBIENTE	01-10-07	30-09-10	MINECO	Spain
CTQ2008-05545		COMBINATION OF CLEAN TECHNOLOGIES FOR THE TREATMENT OF HIGH TOXICITY EFFLUENTS	NANOMATERIALS\POLLUTION\WATERS\ANALYTICAL METHODS\SPE\HPLC\EKC\SV	THIS PROPOSAL DEALS WITH THE RESEARCH ON THE COMBINATION OF PROCESSES AS AN ALTERNATIVE FOR TREATMENT APPLICATIONS. THE TREATMENT OF HIGH TOXICITY EFFLUENTS, WITH HIGH CONCENTRATIONS OF METALS AND ACID, BY THE COMBINATION OF TWO DIFFERENT MEMBRANE TECHNOLOGIES, EMULSION PERTRACTION AND ELECTRODIALYSIS, WILL BE ANALYSED. IN PARTICULAR, A COMPLEX EFFLUENT COMING FROM THE HOT-DIP GALVANIZING INDUSTRY HAS BEEN SELECTED AS CASE STUDY BEING THIS EFFLUENT, THE RESULT OF MIXING DIFFERENT PROCESS STREAMS (MAINLY SPENT PICKLING EFFLUENTS) WITH THE RINSING WASTEWATER. THESE EFFLUENTS ARE CHARACTERISED BY THE HIGH CONCENTRATIONS OF ZINC (80-145 G/L), IRON (80-90 G/L) AND HYDROCHLORIC ACID (6 M) AND THE PRESENCE OF OTHER METALS LIKE MANGANESE, LEAD, ALUMINIUM, CADMIUM, NICKEL, COBALT, ETC., THAT CAN BE CONSIDERED AS IMPURITIES. WORKING WITH AN EFFLUENT WITH HIGH TOXICITY AND COMPLEXITY AS THE ONE DESCRIBED ABOVE, THE PROPOSED METHODOLOGY WILL BE EASILY EXTRAPOLATED FOR DIFFERENT SYSTEMS IF THE RESULTS OBTAINED ARE POSITIVE. THE SPECIFIC OBJECTIVES OF THIS WORK ARE THE FOLLOWING. OBJECTIVE 1: TO IMPROVE THE PROCESS FOR THE RECOVERING OF THE METALLIC COMPONENT (ZINC). THE STARTING POINT TO ACHIEVE THIS OBJECTIVE IS A PHD THESIS (SAMANIEGO, 2006) THAT ANALYSES THE SEPARATION OF ZINC BY MEANS OF THE NON-DISPERSIVE SOLVENT EXTRACTION TECHNOLOGY USING HOLLOW FIBER CONTACTORS (NDSX). AFTER DEFINING THE EXPERIMENTAL	SAN ROMAN SAN EMET	MARIA FRESNEDO		UNIVERSIDAD DE CANTABRIA	DPTO. INGENIERIA QUIMICA Y QUIMICA INORGANICA	ESCUELA TECN.SUP. INGENIEROS INDUSTRIALES Y TELECOMUNICACION	01-01-09	31-12-11	MINECO	Spain
CTQ2008-06792-C02-02		APPLICATION OF AEROBIC GRANULAR SLUDGE REACTORS TO URBAN WASTEWATER: PILOT SCALE OPERATION AND MATHEMATICAL MODELLING	MEMBRANE PROCESSES\NANOFILTRATION\REVERSE OSMOSIS\SORPTION\ORGANIC MATTER\PRIORITY POLLUTANTS\SURFACE WATERS\GROUNDWATER\PTW\WWTP	THIS PROJECT IS FOCUSED ON THE USE OF AEROBIC GRANULAR SYSTEMS AT PILOT SCALE TO TREAT URBAN WASTEWATERS. THESE SYSTEMS SUPPOSE AN INTERESTING ALTERNATIVE TO THE CONVENTIONAL ACTIVATED SLUDGE TECHNOLOGY SINCE GRANULAR BIOMASS CAN BE EASILY SEPARATED FROM TREATED WASTEWATER IN THE OWN REACTOR AND, THEREFORE, AN EXTERNAL SETTLING UNIT IS NOT NECESSARY. MOREOVER, THE FEED PATTERN OF THESE SYSTEMS ALLOWS CARRYING OUT PHOSPHATE REMOVAL, NITRIFICATION AND DENITRIFICATION IN ONE ONLY UNIT. RESULTS OBTAINED WITH GRANULAR AEROBIC REACTORS AT LABORATORY SCALE ARE PROMISING BUT THERE ARE FEW WORKS DONE AT PILOT OR FULL SCALE. THEREFORE, MORE INFORMATION ABOUT THE STABILITY OF GRANULES AND THEIR PERFORMANCE AT LARGE SCALE IS NEEDED IN ORDER TO ESTABLISH AEROBIC GRANULATION AS A FEASIBLE TREATMENT. THE OBJECTIVES OF THIS PROJECT ARE THE STUDY OF THE STABILITY OF A GRANULAR SLUDGE REACTOR PILOT PLANT TREATING URBAN WASTEWATERS AND THE DEVELOPMENT OF A MATHEMATICAL MODEL WHICH COULD BE USED TO OPTIMIZE THE PROCESS AND DESIGN THE REACTOR AT FULL SCALE. DURING THE OPERATION OF THE GRANULAR SYSTEM, THE EFFECTS OF THE CHANGES IN THE OPERATIONAL CONDITIONS IN THE WASTEWATER TREATMENT PLANTS (WWTP) WILL BE EVALUATED. THESE CHANGES ARE	CARRERA MUYO	JULIAN		UNIVERSIDAD AUTONOMA DE BARCELONA	DPTO. INGENIERIA QUIMICA	DPTO. INGENIERIA QUIMICA	01-01-09	31-12-11	MINECO	Spain

CTQ2008-06865-C02-01		ONE STAGE GRANULAR SBR FOR BNR: DESIGN AND OPERATION WITHIN AN ADVANCED CONTROL SYSTEM		THE GRASTAC PROJECT AIMS TO ADVANCE IN THE BIOLOGICAL NUTRIENT REMOVAL FROM WASTEWATER BY THE APPLICATION OF THE EMERGING GRANULAR TECHNOLOGY APPLIED TO SBR. IN SUCH SENSE THIS PROJECT PRETENDS TO IDENTIFY THE BASIC KNOWLEDGE ABOUT THE GRANULATION PROCESS (MICROBIAL ACTIVITY OF GRANULAR BIOMASS FOR NUTRIENT REMOVAL, POPULATION DYNAMICS DISTRIBUTION AND PHYSICAL/CHEMICAL COMPOSITION EVOLUTION OF BIOLOGICAL GRANULES DURING THE GRANULE DEVELOPMENT AND OPERATION WITH VARIABLE COMPOSITION WASTEWATER. APART FROM THE BASIC KNOWLEDGE, THIS PROJECT ALSO PRETENDS TO DEVELOP A NEW TUBULAR GRANULAR SBR FOR NUTRIENT REMOVAL WITH SYNTHETIC WASTEWATER FOR A BETTER PROCESS STABILITY AND PERFORMANCE. IN SUCH SENSE A LAB SCALE PILOT PLANT (30 LITRES) WILL BE DESIGN CONSTRUCTED, STARTED-UP AND OPERATED FOR BIOLOGICAL NUTRIENT REMOVAL PROCESS. AFTERWARDS, THE GRANULAR TECHNOLOGY WILL BE APPLIED TO AN AVAILABLE 1000 LITRES INDUSTRIAL PILOT PLANT FOR TECHNOLOGY VALIDATION IN A FULL SCALE WWTP. ON THE OTHER HAND, IN ORDER TO ENSURE PROCESS STABILITY AND PERFORMANCE IN NUTRIENT REMOVAL, THE PREVIOUSLY DEVELOPED SICOTIN SOFTWARE WILL BE ADAPTED TO THE GRANULAR TECHNOLOGY BY INCLUDING NEW DATA ACQUISITION PROBES, ADAPTING THE	COLPRIM GALCERAN	JESUS		UNIVERSITAT DE GIRONA	INSTITUTO DE MEDIO AMBIENTE	INSTITUTO DE MEDIO AMBIENTE	01-01-09	31-12-11	MINECO	Spain
CTQ2008-02775		DEVELOPMENT OF ROUTINE ANALYTICAL METHODS FOR THE DETERMINATION OF ESTROGENS AND ALKYLPHENOLS IN WATER AND FISH TISSUE SAMPLES	PASSIVE SAMPLING\SEMIPERMEABLE MEMBRANE DEVICE\ORGANIC POLLUTANTS\WATER\AIR	THE EUROPEAN UNION WATER FRAMEWORK DIRECTIVE (WFD, 2000/60) IS PROBABLY THE MOST IMPORTANT INTERNATIONAL LEGISLATION INTRODUCED FOR MANY YEARS IN THE WATER MANAGEMENT AND PROTECTION FIELD. HOWEVER, THE WFD DOES NOT SPECIFY THE ANALYTICAL METHODS THAT HAVE TO BE USED FOR THE MONITORING OF CHEMICAL SUBSTANCES PRESENT IN WATER BODIES. THUS, THERE IS AN URGENT NEED TO DEVELOP MONITORING TOOLS AND ANALYTICAL METHODOLOGY ABLE TO PROVIDE IMPROVED CHEMICAL AND BIOLOGICAL DATA AT A LOWER COST IN ORDER TO RESPOND TO THE CHALLENGES OF THE VARIOUS TASKS INVOLVED IN EACH TYPE OF MONITORING. ESTROGENS AND ALKYLPHENOLS HAVE BECOME IMPORTANT EMERGING CONTAMINANTS DUE TO THEIR PRESENCE IN ENVIRONMENTAL WATERS, THE THREAT THEY SUPPOSE TO DRINKING WATER SOURCES AND THE CONCERN ABOUT THEIR POSSIBLE ESTROGENIC AND OTHER KIND OF EFFECTS. ALTHOUGH ENDOCRINE DISRUPTING COMPOUND (EDC) CONCENTRATIONS HAVE OFTEN BEEN MEASURED IN WASTEWATER EFFLUENTS, NO CONCLUSIVE ASSOCIATION HAS BEEN PROVEN BETWEEN ENVIRONMENTALLY RELEVANT CONCENTRATIONS AND ESTROGENIC EFFECTS. BESIDES, VERY LITTLE IS KNOWN ABOUT THE CONCENTRATION OF SUCH ANALYTES IN FISH TISSUE. THE MAIN OBJECTIVE OF THIS RESEARCH PROJECT IS THE DEVELOPMENT OF ROUTINE ANALYTICAL METHODS BASED ON COMMERCIALLY AVAILABLE INSTRUMENTATION FOR	FERNANDEZ CUADRADO	LUIS ANGEL		UNIVERSIDAD DEL PAIS VASCO EUSKAL HERRIKO UNIBERTSITATEA	DPTO. QUIMICA ANALITICA	FACULTAD DE CIENCIA Y TECNOLOGIA	01-01-09	31-12-11	MINECO	Spain
CTQ2008-00417		DEVELOPMENT OF SEPARATION/RECOVERY PROCESSES OF BORON BY USING HOLLOW FIBBER MEMBRANE CONTACTORS WITH STRIP DISPERSION AND BIOPOLYMERS SORPTION	WATER\CONTAMINAT\OXIDATION\TREATMENT	THIS PROJECT PROPOSES THE DEVELOPMENT OF SEPARATION PROCESSES OF BORON THROUGH HOLLOW FIBBER MEMBRANE CONTACTORS WITH STRIP DISPERSION AS WELL AS SORPTION ON BIOPOLYMERS. IT CONSIDERS ITS APPLICATION TO TWO TYPES OF SOLUTIONS: A) SEPARATION/RECOVERY OF BORON FROM WASTEWATER PROCEEDING FROM SPENT METALWORKING FLUIDS. B) ELIMINATION OF BORON FROM SEAWATER DESALINIZED BY REVERSE OSMOSIS THROUGH THE INCORPORATION OF NEW ADDITIONAL STAGE USING HOLLOW FIBBER MEMBRANE CONTACTORS. IT SEEKS TO DEVELOP ENVIRONMENTALLY AND ECONOMICALLY VIABLE PROCESSES THAT ALLOW NOT ONLY THE RECYCLING OF BORON AND WATER, BUT ALSO A DECREASE IN THE CONSUMPTION OF REAGENTS AND A DECREASE IN THE PRODUCTION OF SECONDARY WASTES. THE PRESENTED PROJECT IS RELATED TO DEVELOPMENT OF ADVANCED SEPARATION OPERATIONS, ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE, BY APPLYING NEW TECHNOLOGIES BASED ON THE USE OF MEMBRANES. THE SEPARATION PROCESSES TO BE STUDIED AND APPLIED TO THE ELIMINATION OF BORON, INVOLVE THE USE OF A NEW TECHNOLOGY (HOLLOW FIBBER STRIP DISPERSION ¿HFSD- O EMULSION PERTRACTION ¿EPT-) THAT COMBINES ADVANTAGES OF THE SUPPORTED LIQUID MEMBRANES WITH SELECTIVE CARRIERS, WITH THOSE OF THE EMULSION MEMBRANES, USING A SINGLE MEMBRANE CONTACTOR WHERE THE EXTRACTION AND STRIPPING PROCESSES TAKE PLACE SIMULTANEOUSLY IN A SINGLE STEP.	SASTRE REQUENA	ANA MARIA		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERÍA QUÍMICA-CEPIMA	ESCUELA TECNICA SUPERIOR DE INGENIERIA INDUSTRIAL DE BARCELONA	01-01-09	30-06-12	MINECO	Spain

CTQ2008-05821		NEW NANOMATERIALS WITH INDUSTRIAL APLICATIONS FOR ENVIRONMENTAL CONTROL	HEXAVALENT CHROMIUM RECOVERY\ELECROCHEMICAL REACTORS\CERAMIC MEMBRANES	THE WATER POLLUTION WITH PRIORITY AND EMERGING POLLUTANTS IS ONE OF THE MAJOR ENVIRONMENTAL CHALLENGES THAT THE SCIENTIFIC COMMUNITY AND THE GOVERNMENTAL AUTHORITIES MUST OVERCOME. IN THE LAST YEARS, NEW NANOMATERIALS LIKE HYBRID MESOPOROUS SILICA HAVE SHOWN INTERESTING APPLICATIONS IN THIS FIELD DUE TO THEIR ORDERED POROUS WITH A CONTROLLED PORE SIZE AND A HIGH SURFACE COVERAGE WITH FUNCTIONAL GROUPS. THESE PROPERTIES MAKES THE HYBRID MESOPOROUS SILICAS POTENTIALLY USEFUL FOR THE DEVELOPMENT OF NEW ANALYTICAL METHODS HIGHLY SELECTIVE AND SENSITIVE, ECONOMIC, QUICK AND ENVIRONMENTAL FRIENDLY FOR THE ANALYSIS OF POLLUTANTS IN WATERS. THE OBJECTIVES OF THIS PROJECT ARE: -DEVELOPMENT OF NEW HYBRID MESOPOROUS SILICA APPLICATIONS FOR THE SPE OF EMERGING POLLUTANTS IN THE WATERS. -DEVELOPMENT OF NEW HYBRID MESOPOROUS SILICA APPLICATIONS AS STATIONARY PHASES FOR THE SEPARATION OF CHIRAL POLLUTANTS IN WATERS BY HPLC. -DEVELOPMENT OF NEW HYBRID MESOPOROUS SILICA APPLICATIONS AS PSEUDO-STATIONARY PHASES FOR THE SEPARATION OF POLLUTANTS IN WATERS BY EKC. -DEVELOPMENT OF NEW HYBRID MESOPOROUS SILICA APPLICATIONS FOR PREPARATION OF CARBON PASTE MODIFIED ELECTRODES FOR HEAVY METALS ANALYSIS IN WATERS BY ADSV.	SIERRA ALONSO	MARIA ISABEL		UNIVERSIDAD REY JUAN CARLOS	ESCUELA SUPERIOR DE CIENCIAS EXPERIMENTALES Y TECNOLOGIA	ESCUELA SUPERIOR DE CIENCIAS EXPERIMENTALES Y TECNOLOGIA	01-01-09	30-06-12	MINECO	Spain
CTQ2008-05719		DEVELOPMENT OF NEW SEMIPERMEABLE MEMBRANE PASSIVE SAMPLING DEVICES. DETERMINATION OF ORGANIC POLLUTANTS IN WATER AND AIR		NEW PASSIVE SAMPLERS, BASED ON SEMIPERMEABLE MEMBRANES OF DIFFERENT MATERIALS FILLED WITH LIQUID OR SOLID PHASES WILL BE DEVELOPED. THE AFOREMENTIONED DEVICES WILL BE USED FOR ORGANIC POLLUTANTS RETENTION FROM AIR OR WATER. THE DEVELOPED DEVICES WILL BE EVALUATED TO SAMPLE VOLATILE ORGANIC COMPOUNDS (VOCS) IN AIR, PESTICIDES IN AIR AND WATER, CHLORALKANES, CLOROPHENOLS AND ORGANOTIN COMPOUNDS IN WATER. THE STUDIES WILL FOCUS ON: I) THE EVALUATION OF ABSORPTION-DESORPTION ISOTHERMS TO ESTABLISH RETENTION MODELS IN BOTH, EQUILIBRIUM AND NON-EQUILIBRIUM CONDITIONS II) THE SEARCH FOR ENVIRONMENTALLY SUSTAINABLE ALTERNATIVES FOR RETAINED ANALYTE BACK-EXTRACTION AND EXTRACTS CLEAN-UP AND III) THE APPLICATION OF THE NEW SAMPLES FOR THE DETERMINATION OF THE SELECTED COMPOUNDS BY GC-MS AND LC-MS. THE IR TECHNIQUES WILL ALSO BE USED TO DO I) THE SCREENING OF RETAINED COMPOUNDS, II) THE EVALUATION OF THE RETENTION PROCESS THROUGH MICROSCOPY-IR AND III) THE QUANTITATIVE DETERMINATION OF ORGANIC VOLATILE COMPOUNDS RETAINED THROUGH THE MEASUREMENTS IN THE VAPOUR PHASE FTIR. THE EXPECTED RESULTS WILL CONTRIBUTE TO THE DEVELOPMENT OF NEW PATENTS AND TO CREATE A	PASTOR GARCIA	AGUSTIN		UNIVERSIDAD DE VALENCIA	DPTO. QUIMICA ANALITICA	FACULTAD DE QUIMICA	01-01-09	31-12-11	MINECO	Spain
CTQ2008-06750-C02-02		DEVELOPMENT OF POROUS NANOSTRUCTURED ION-CONDUCTIVE CERAMIC MEMBRANES		THE SUBPROJECT FOCUSES ON DEVELOPING LOW-COST NANOSTRUCTURED CERAMIC MEMBRANES WITH ION-EXCHANGE PROPERTIES (CATIONIC AND ANIONIC), FOR WHICH THE WORK METHODS PROPER TO THE TRADITIONAL CERAMIC INDUSTRY WILL BE USED AS FAR AS POSSIBLE. IN ESSENCE, THE MEMBRANES WILL CONSIST OF A LOW-COST POROUS CERAMIC MATRIX, WHICH WILL FURNISH THE MECHANICAL STRENGTH AND THE CHEMICAL RESISTANCE, AND A NANOSTRUCTURED ACTIVE SUBSTANCE, WHICH WILL PROVIDE THE ION-EXCHANGE CAPACITY. THE DEVELOPED MEMBRANES WILL BE USED IN FINE-TUNING AN ELECTROCHEMICAL PROCESS FOR TREATING BATHS IN THE CHROMIUM-PLATING INDUSTRY, WHOSE HANDLING IS A MAJOR ENVIRONMENTAL PROBLEM. IN THIS PROCESS, THE CERAMIC MEMBRANES WILL BE THE KEY ELEMENT IN THE ELECTROCHEMICAL REACTOR, BECAUSE OF THEIR HIGH CHEMICAL AND THERMAL RESISTANCE, AND MECHANICAL STRENGTH, AND BECAUSE OF THE IMPROVED ION-EXCHANGE CAPACITY TO BE EXPECTED FROM THE NANOMETRE SCALE OF THE PARTICLES OF THE ACTIVE SUBSTANCE. THIS WILL PROVIDE MORE EFFICIENT BATH TREATMENT, UNDER CONDITIONS NOT ACCESSIBLE TO POLYMER MEMBRANES, WHICH ARE THE MEMBRANES MOST WIDELY USED IN PROCESSES OF THIS TYPE. THE AIM IS LARGELY TO RECOVER THE HEXAVALENT CHROMIUM PRESENT IN THE WATER, TO ENABLE THESE TO BE RECIRCULATED TO THE SURFACE TREATMENT PROCESS, AND, IN ADDITION, TO OBTAIN A SUFFICIENTLY DILUTED	MESTRE BELTRAN	SERGIO		UNIVERSITAT JAUME I DE CASTELLO	INSTITUTO DE TECNOLOGIA CERAMICA -ITC-	INSTITUTO DE TECNOLOGIA CERAMICA -ITC-	01-01-09	31-12-11	MINECO	Spain

CTQ2008-02728		DEGRADATION FROM INDUSTRIAL PRINTING WASTEWATER BY COMBINED ADSORPTION AND WET AIR OXIDATION PROCESSES	MICROENCAPSULACION\HEAVY METAL REMOVAL\SOLVENT EXTRACTION\ION EXCHANGE\SUSPENSION POLYMERIZATION	THE AIM OF THIS PROJECT IS THE ESTABLISHMENT OF OPTIMAL CONDITIONS TO CARRY OUT THE DEGRADATION FROM WASTEWATERS OF PRINTING INK INDUSTRY AND GRAPHIC ARTS BY THE COMBINATION OF ADSORPTION/DESORPTION AND WET AIR OXIDATION PROCESSES. CHEMICAL COMPOSITION OF THIS EFFLUENT PRESENTS DYES, PIGMENTS, OILS, RESINS, ORGANIC SOLVENT AND METALS AS MAIN POLLUTANTS AND HIGH CHEMICAL OXYGEN DEMAND, COLOR AND TOXICITY. WET AIR OXIDATION DESTROYS TOXICS IN INDUSTRIAL WASTEWATER WHEREAS ADSORPTION/DESORPTION PROCESS IS A COMPLEMENTARY TREATMENT FOR SELECTIVE POLLUTANTS ELIMINATION, POLLUTANTS CONCENTRATION, OR LAST STAGE AFTER WET AIR OXIDATION PROCESS (OXIDATION STAGE). IN ADSORPTION, SILICA OR CARBONOCEOUS MATERIALS CAN BE USED, AMONG OTHERS AS ZEOLITES AND ACTIVATED CARBON. HOWEVER, THE SIZE OF DYES AND PIGMENTS MOLECULES IN THE DESORPTION STAGE COULD BE A PROBLEM WITH MICROPOROUS MATERIALS. IN THIS SENSE, IT¿S NECESSARY TO EXPLORE NEW MATERIALS WITH HIGH PORE SIZE. INSIDE THE CARBONACEOUS MATERIALS, CARBON XEROGELS IS A NEW MATERIAL THAT ARE USED AS ADSORBENTES AND CATALYTIC SUPPORTS. THE MOST SIGNIFICANT PROPERTIES OF THESE MATERIALS ARE: RESISTENCE TO ACID/BASIC MEDIA, RESISTANCE TO	RODRIGUEZ RODRIGUEZ	ARACELI		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS QUIMICAS	01-01-09	31-12-11	MINECO	Spain
CTQ2008-03988		NOVEL AND IMPROVED CATALYTIC PROCESSES AND THEIR COMBINATION WITH ADVANCED BIOLOGICAL SYSTEMS FOR INDUSTRIAL WASTEWATER TREATMENT	ACID EFFLUENTS WITH METALS; CLEAN TECHNO	THE IMPLEMENTATION OF NOVEL AND IMPROVED COST-EFFECTIVE TECHNIQUES FOR INDUSTRIAL WASTEWATERS TREATMENT IS A NOWADAYS DEMAND BECAUSE OF THE GROWING INCIDENCE OF HAZARDOUS POLLUTANTS AND THE STRINGENT DISCHARGE LIMITS. THE GREAT POTENTIAL OF HETEROGENEOUS CATALYSIS PROVIDES IMPORTANT OPPORTUNITIES IN THIS FIELD WHOSE DEVELOPMENT REQUIRES SIGNIFICANT RESEARCH EFFORTS. THE AIM OF THIS PROJECT IS TO INVESTIGATE THE FEASIBILITY OF DIFFERENT CATALYTIC PROCESSES FOR THE REMOVAL OF TARGET POLLUTANTS, SOME OF THEM INCLUDED IN THE LIST OF PRIORITY HAZARDOUS SUBSTANCES IN THE FIELD OF WATER POLICY (DECISION 2455/2001/EC) AS WELL AS FOR THE EFFICIENT TREATMENT OF REAL INDUSTRIAL WASTEWATERS FROM DIFFERENT SOURCES, LIKE COSMETICS, TEXTILE DYEING, AGROCHEMICALS AND CELLULOSE PULP. THE TARGET COMPOUNDS CONSIDERED IN PRINCIPLE ARE PENTACHLOROPHENOL, ALACHLOR AND DIURON FROM THE EC LIST OF PHS, AS WELL AS CHLORO AND NITRO PHENOLS AND ANILINE. THE TECHNIQUES TO BE INVESTIGATED INCLUDE CATALYTIC WET AIR OXIDATION (CWAO), CATALYTIC WET PEROXIDE OXIDATION (CWPO) AND CATALYTIC HYDRO-DECHLORINATION (CHD). COMBINATION OF THESE TREATMENTS WITH ADVANCED BIOLOGICAL PROCESSES BASED ON THE USE OF SEQUENCING BATCH REACTORS (SBR) AND MEMBRANE BIOLOGICAL REACTORS (MBR) WILL BE ALSO INVESTIGATED. IN THE CASE OF TARGET COMPOUNDS THEIR DEGRADATION ROUTES UPON THE APPLICATION OF THE AFOREMENTIONED TECHNIQUES WILL BE INVESTIGATED. EVOLUTION OF TOC,	RODRIGUEZ JIMENEZ	JUAN JOSE		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. QUIMICA FISICA APLICADA	FACULTAD DE CIENCIAS	01-01-09	31-12-14	MINECO	Spain
CTQ2009-09983		PREPARATION OF GRANULAR ADSORBENTS AND CATALYSTS FROM GRAPE SEEDS FOR ADVANCED WATER TREATMENT	LIGNINOLYTIC MICROORGANISMS\FUNGI\ACTINOBACTERIA\LACCASE\MEDIATOR\HYDROXYL RADICAL\POLLUTANTS\BIOBLEACHING	THE RESEARCH PROPOSAL IS AIMED TO ADVANCE IN THE KNOWLEDGE ON THE PREPARATION OF GRANULAR ACTIVATED CARBONS AND CATALYSTS FOR ADVANCED WATER TREATMENT. AS A FINAL GOAL, THE ELUCIDATION OF THE RELATIONSHIPS BETWEEN PREPARATION METHODS, THE STRUCTURE OF THE MATERIALS AND THEIR PERFORMANCE IS PURSUED. THE METHODOLOGY IS BASED ON THE USE OF GRAPE SEEDS AS STARTING MATERIAL. THIS WASTE MATERIAL IS READILY AVAILABLE IN WINE PRODUCING COUNTRIES AND IT HAS A MORPHOLOGY AND STRUCTURE VERY INTERESTING FOR THE APPLICATION STUDIED. THE PREPARATION OF ACTIVATED CARBONS WILL BE STUDIED BY CONVENTIONAL PROCEDURES (PHYSICAL ACTIVATION BY GASIFICATION WITH O2 AND CO2, AND CHEMICAL ACTIVATION WITH H3PO4 AND KOH) TOGETHER WITH LESS EXPLORED PROCEDURES (ACTIVATION BY CYCLIC CHEMISORPTION/DESORPTION, PHYSICAL ACTIVATION AFTER IMPRENATION WITH CATALYSTS PRECURSOR SALTS, AND CHEMICAL ACTIVATION USING CATALYSTS PRECURSOR SALTS AS ACTIVATION AGENTS). THE OBJECTIVE IS TO OBTAIN MATERIALS THAT MAINTAIN THE ORIGINAL GRANULAR MORPHOLOGY AND SHOW A DEVELOPMENT OF POROUS STURCTURE WITH AN IMPORTANT CONTRIBUTION OF MESOPOROSITY. THESE PROPERTIES ARE SPECIALLY RELEVANT FOR THE APLICATION OF THE ADSOBENTS AND CATALYSTS TO WATER TREATMENT. THE PREPARATION OF CATALYSTS WILL BE STUDIED BY TWO APPROACHES. ON ONE HAND, THE METHODS FOR ACTIVATION IN THE PRESENCE OF METALIC SALTS WILL	GILARRANZ REDONDO	MIGUEL ANGEL		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. QUIMICA FISICA APLICADA	FACULTAD DE CIENCIAS	01-01-10	31-05-13	MINECO	Spain

CTQ2009-07601		DEVELOPMENT OF A NEW GENERATION OF COMPACT, LOW-COST, HIGH PERFORMANCE BIOREACTORS FOR ODOUR ABATEMENT IN WASTEWATER TREATMENT PLANTS.	ACTIVATED CARBON\CATALYSIS\NANOPARTICLES\ WATER TREATMENT	AS A RESULT OF THE STRICTER ENVIRONMENTAL REGULATIONS, THE ENCROACHMENT OF RESIDENTIAL AREAS ON WASTEWATER TREATMENT PLANTS (WWTPS), AND THE INCREASING PUBLIC EXPECTATIONS ON PRIVATE WATER COMPANY DUTIES, THE NUMBER OF PUBLIC ODOUR COMPLAINTS HAS SUBSTANTIALLY INCREASED DURING THE LAST DECADES. THUS, MORE THAN HALF THE COMPLAINTS RECEIVED BY ENVIRONMENTAL REGULATORY AGENCIES WORLDWIDE CONCERN MALODOURS. IN THIS CONTEXT, ODOROUS EMISSIONS FROM WWTPS, MAINLY COMPOSED OF SULPHUR COMPOUNDS (H2S, MERCAPTANS) AND VOLATILE ORGANIC COMPOUNDS (VOCS), ARE RANKED AMONG THE MOST UNPLEASANT ONES. THEREFORE, THE MINIMIZATION AND ABATEMENT OF UNPLEASANT ODOUR EMISSIONS ARE BECOMING TWO OF THE MAJOR CHALLENGES FOR WWTPS UTILITIES WORLDWIDE, INCREASINGLY CONCERNED ABOUT THEIR PUBLIC IMAGE. DESPITE THE PARAMOUNT TECHNOLOGICAL BREAKTHROUGHS CARRIED OUT DURING THE TWO LAST DECADES, ODOUR TREATMENT SYSTEMS ARE STILL LIMITED BY THE HIGH OPERATION COST OF PHYSICAL/CHEMICAL METHODS, BY THE LOW ODOUR ABATEMENT EFFICIENCY WHEN HYDROPHOBIC ODORANTS ARE THE MAIN RESPONSIBLE COMPOUNDS FOR ODOUR NUISANCE, OR BY THE HIGH LAND REQUIREMENTS WHEN IMPLEMENTING LOW-COST TECHNOLOGICAL SOLUTIONS SUCH AS BIOFILTRATION UNITS. THE PROJECT HEREIN PRESENTED AIMS TO DEVELOP A LOW-COST HIGH-PERFORMANCE GENERATION OF BIOREACTORS FOR ODOUR ABATEMENT WITH A REDUCED FOOTPRINT (MINIMUM REACTOR VOLUME REQUIREMENTS). THIS GOAL WILL BE ADDRESSED	MUÑOZ TORRE	RAUL		UNIVERSIDAD DE VALLADOLID	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS	01-01-10	31-05-13	MINECO	Spain
CTQ2009-08377		DEVELOPMENT OF ANALYTICAL PROCEDURES FOR THE SCREENING AND CONTROL OF NEW EMERGENT CONTAMINANTS	ORGANIC POLLUTANTS\TOF\CHROMATOGRAPHY \MASS SPECTROMETRY\SCREENING\CONFIRMATION\WATER SAMPLES\DEGRADATION\METABOLITES	THE DEVELOPMENT OF ANALYTICAL METHODS FOR THE SCREENING AND CONTROL OF THE SO-CALLED EMERGENT CONTAMINANTS, A CATEGORY THAT INCLUDES AN INCREASING NUMBER OF SUBSTANCES, IS ESSENTIAL TO ENABLE EVALUATION OF THE REAL RISK INVOLVED, THE ROUTES OF TRANSPORT AND ABOVE ALL THE ROUTES OF DEGRADATION ANS/OR TRANSFORMATION. THE PROPOSED PROJECT WILL CONSIDER SEVERAL OF THESE CONTAMINANTS (INCLUDING SUCRALOSE, ALLERGENIC DYES, BENZOTRIAZOLES AND BENZOTHIAZOLES IN NATURAL WATERS, SEWAGE AND SEWAGE SLUDGE, AS WELL AS FOR A GROUP OF CHEMOTHERAPEUTIC AGENTS ¿SOME ORGANOPHOSPHOROUS, CARABAMATE AND PYRETHROID PESTICIDES, DERIVATIVES OF AVERMECTIN, BENZOZYLPHENYLUREA AND SOME ANTIBIOTICS- IN PRODUCTS USED IN AQUACULTURE AND IN WASTE EFFLUENTS DERIVED FROM THIS ACTIVITY. THE DEVELOPMENT OF NEW EFFICIENT AND COST-EFFECTIVE SAMPLE PREPARATION PROCEDURES IS A CRITICAL OBJECTIVE IN THIS CONTEXT AS WELL AS TO CARRY OUT DEGRADATION AND TRANSFORMATION STUDIES OF THE CONTAMINANTS BY ALTERNATIVES TO PHOTODEGRADATION AND CHLORINATION ¿ ALTERNATIVE OXIDATION PROCESSES AND BIODEGRADATION -. BECAUSE IN THESE STUDIES THE NEED OF ANALYZING METABOLITES AND UNEXPECTED DEGRADATION PRODUCTS IN VERY	CELA TORRIJOS	RAFAEL		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	INSTITUTO DE INVESTIGACIONES Y ANALISIS ALIMENTARIOS	INSTITUTO DE INVESTIGACIONES Y ANALISIS ALIMENTARIOS	01-01-10	31-12-12	MINECO	Spain
CTQ2009-10447		ADVANCED BIOOXIDATION OF AROMATIC COMPOUNDS AND POLYMERS BY LIGNINOLYTIC MICROORGANISMS AND LACCASE-MEDIATOR SYSTEMS	ADVANCED OXIDATION\EMERGING CONTAMINANTS\PHOTO-FENTON\SOLAR PHOTOCATALYSIS\WASTEWATER TREATMENT	THE GROWING DEMAND OF SOCIETY FOR THE DESIGN OF STRATEGIES FOR DECONTAMINATION OF WASTEWATER, EMBODIED IN STRINGENT GOVERNMENT REGULATIONS, HAS LED TO DEVELOP NEW TECHNOLOGIES FOR SUCH TREATMENTS, BASED ON PHYSICOCHEMICAL AND BIOLOGICAL PROCESSES. AMONG THEM, THE SO-CALLED "ADVANCED OXIDATION PROCESSES (POA) AND THE PROCEDURES THAT INVOLVE LIGNINOLYTIC MICROORGANISMS ARE THOSE THAT ATTRACT MORE ATTENTION AMONG RESEARCHERS AND TECHNOLOGISTS. THE DEGRADATION CAPABILITY OF LIGNINOLYTIC FUNGI AND BACTERIA IS BASED ON THE LOW SUBSTRATE SPECIFICITY OF THEIR OXIDATIVE ENZYMES, AND ESPECIALLY IN THE PRODUCTION OF LOW MOLECULAR WEIGHT AND HIGH REDOX POTENTIAL OXIDIZING AGENTS, WHICH SIGNIFICANTLY INCREASES THE RANGE OF COMPOUNDS SUSCEPTIBLE TO DEGRADATION. THESE AGENTS INCLUDE PHENOXYL RADICALS DERIVED FROM MONOVALENT OXIDATION OF PHENOLIC COMPOUNDS CALLED MEDIATORS BY LIGNINOLYTIC ENZYMES (LACCASE-MEDIATOR SYSTEMS OR LMS), AND HYDROXYL RADICALS GENERATED THROUGH QUINONES REDOX CYCLING. THE APPLICATION OF THESE HIGHLY REACTIVE AND LOW SELECTIVE RADICALS PRODUCED BY LIGNINOLYTIC BACTERIA AND FUNGI TO THE DEGRADATION OF AROMATIC COMPOUNDS AND POLYMERS COULD BE CONSIDERED AS AN "ADVANCED BIO-OXIDATION PROCESS" (PBOA). IN THIS CONTEXT THE ACTUAL PROPOSAL TRY TO FILL UP THE GAPS RELATED WITH LMS SYSTEMS, AS WELL AS THE	ARIAS FERNANDEZ	MARIA ENRIQUETA		UNIVERSIDAD DE ALCALA	DPTO. MICROBIOLOGIA Y PARASITOLOGIA	FACULTAD DE FARMACIA	01-01-10	31-12-13	MINECO	Spain

CTQ2009-14627		ADAPTIVE MODELING AND MONITORING OF RO PROCESSES	WATER\ENVIRONNEMENT\WATER MANAGEMENT\COMPARATIVE MODELS\WATER FRAMEWORK DIRECTIVE	CONSERVATION, RECLAMATION, TREATMENT, PRODUCTION, AND AN EFFICIENT MANAGEMENT ARE THE PRINCIPAL INTEREST RESEARCH AREAS FOR WATER RESOURCES. THE TECHNOLOGIC AREAS (PRODUCTION AND TREATMENT) ARE MAINLY ORIENTED TO OBTAIN POTABLE WATER FROM WATER RESOURCES NOT COMMONLY USED FOR PURPOSE. ON THE PRODUCTION AREA, THE MAIN EFFORTS ARE FOCUSED TO SEAWATER DESALINIZATION TO OBTAIN POTABLE WATER. EVEN THOUGH DESALINIZATION PROCESSES BY MEMBRANES REPRESENT A RELATIVELY ADVANCED TECHNOLOGY, THE PRODUCTION COSTS REDUCTION AND A BETTER ROBUSTNESS AND EFFICIENCY ARE STILL THE PRINCIPAL FOCUSES OF ATTENTION ON ITS RESEARCH. CHEMICAL ENGINEERING OFFERS THE SCIENTIFIC BASE AND THE TECHNOLOGICAL TOOLS TO AFFORD THOSE PROBLEMS AND BE ABLE TO DESIGN A VERSATILE DESALINIZATION PLANT, ADJUSTABLE TO THE INCOMING SEAWATER CONDITIONS AND FLEXIBLE ENOUGH TO RUN IN AN EFFICIENT WAY IN A BROAD RANGE OF OPERATION CONDITIONS. THIS PROJECT AFFORDS, FROM A MULTIDISCIPLINARY POINT OF VIEW, THE DEVELOPMENT OF A SCIENTIFIC AND AN ENGINEERING BASIS TO OPTIMIZE THE DESIGN, OPERATION, MONITORING, AND CONTROL OF THE SEAWATER TREATMENT PLANTS, IN ORDER TO OBTAIN POTABLE WATER IN AN EFFICIENT AND ECONOMIC WAY. THIS GENERAL GOAL MAY BE EXPLAINED IN THREE SPECIFIC AND COMPLEMENTARY OBJECTIVES:	GIRALT MARCE	JAUME		UNIVERSIDAD ROVIRA I VIRGILI	DPTO. INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	01-01-10	31-12-12	MINECO	Spain
CTQ2009-07831		DEVELOPMENT AND APPLICATION OF THE ELECTROANALYTICAL TECHNIQUE AGNES TO MEASURE AND INTERPRETE THE SPECIATION OF HEAVY METALS IN NATURAL WATERS	EMERGENT CONTAMINANTS\SAMPLE PREPARATION\MULTIDIMENSIONAL LIQUID CHROMATOGRAPHY\HIGH TEMPERATURE LIQUID CHROMATOGRAPHY\TRANSFORMATION AND DEGRADATION STUDIES	AS A FOLLOW-UP OF THE PREVIOUS PROJECT CTQ2006-14385-C02, WE AIM AT CONTINUING THE DEVELOPMENT OF EXPERIMENTAL AND THEORETICAL ASPECTS OF THE SPECIATION (WHICH CONTROLS BIOAVAILABILITY AND TOXICITY) OF HEAVY METALS IN NATURAL WATERS. IN THE EXPERIMENTAL FRONT, WE WILL CONTINUE WITH THE DEVELOPMENT OF THE ELECTROANALYTICAL TECHNIQUE AGNES (ABSENCE OF GRADIENTS AND NENSTIAN EQUILIBRIUM STRIPPING). SINCE ITS DESIGN BY OUR GROUP, AGNES HAS BEEN INCREASINGLY CONSOLIDATED AS A ROBUST TECHNIQUE FOR THE DETERMINATION OF THE CONCENTRATION OF HEAVY METALS, WITH SPECIAL RELEVANCE IN THE CASE OF ZN2+ (WHERE THERE IS NO STANDARD ALTERNATIVE METHOD AT LOW CONCENTRATIONS). WE WILL TACKLE: I) THE TRIAL OF ELECTRODES WITH A HIGH SURFACE/VOLUME RATIO, IN ORDER TO CUT DOWN THE LIMIT OF DETECTION FOR A FIXED DEPOSITION TIME; II) THE EXPLORATION OF NEW STRATEGIES TO SPEED-UP THE SELECTION OF THE OPTIMAL PARAMETERS FOR AGNES; III) THE STUDY OF THE STRONG COMPLEXATION GLUTATHIONE+ZN2+; IV) THE STUDY OF STRATEGIES TO CONTROL INTERFERENCES IN SYSTEMS WITH MIXTURES OF ELECTROACTIVE METALS: V) THE ANALYSIS OF ZN IN RIVER WATER, WITHOUT CHANGING ITS LOW IONIC STRENGTH OR THE CARBONATE SPECIATION; VI) THE VALIDATION OF AGNES IN FRONT OF THE TECHNIQUE DONNAN MEMBRANE TECHNIQUE (ESPECIALLY FOR ZN2+). IN THE THEORETICAL FRONT WE WILL DEVELOP: I) THE APLICATION OF THE CONDITIONAL AFFINITY SPECTRUM	GALCERAN NOGUES	JOSE JUAN		UNIVERSIDAD DE LLEIDA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRARIA	ESCUELA TECNICA SUPERIOR DE INGENIERIA AGRARIA	01-01-10	30-09-13	MINECO	Spain
CTQ2010-20258		TECHNOLOGIES BASED ON ENZYME MEMBRANE REACTORS FOR THE REMOVAL OF ENDOCRINE DISRUPTING CHEMICALS	WASTEWATER\WATER RECLAMATION\PHOTO-FENTON	ONE GROUP OF POLLUTANTS WHICH HAS RECENTLY RECEIVED LARGE ATTENTION IS ENDOCRINE DISRUPTOR CHEMICALS (EDCS), WITH POTENTIALLY ADVERSE EFFECTS ON HUMAN HEALTH AT VERY LOW CONCENTRATIONS. THE OCCURRENCE OF EDCS AT HIGH CONCENTRATIONS HAS BEEN DETECTED IN INDUSTRIAL AND AGRICULTURAL WASTEWATERS, IN DIVERSE APPLICATIONS AS DETERGENTS, EMULSIFIERS, WETTING AGENTS, DISPERSANTS OR SOLUBILIZERS. SELECTED EDCS ARE 4-NONYLPHENOL, 4-OCTYLPHENOL, THEIR ETHOXYLATE OLIGOMERS (MONO- AND DI-ETHOXYLATES OF NONYLPHENOL AND OCTYLPHENOL) AND BISPHENOL A. A POTENTIAL DEGRADATION ALTERNATIVE IS THE APPLICATION OF OXIDATIVE ENZYMES FROM LIGNINOLYTIC FUNGI, WHICH HAVE BEEN REPORTED TO PLAY AN IMPORTANT ROLE IN THE DEGRADATION OF AN ARRAY OF XENOBIOTIC COMPOUNDS SUCH AS DYES, POLYAROMATICS, PESTICIDES, ETC. ACCORDINGLY, THE FEASIBILITY OF DEGRADATION OF THIS TYPE OF COMPOUNDS BY TWO TYPES OF ENZYMES: LACCASE AND VERSATILE PEROXIDASE WILL BE EVALUATED. RESEARCH IS NEEDED TO DETERMINE WHICH ENZYME IS BEST SUITED FOR A PARTICULAR SITUATION AND TO OPTIMIZE THE ENZYMATIC PROCESS AS A WHOLE. THE MAIN FOCUS OF THE PROPOSAL IS THE DEVELOPMENT OF NEW ENZYMATIC REACTORS, OPERATED WITH FREE OR	MOREIRA VILAR	Mª TERESA		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. DE INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-11	31-12-13	MINECO	Spain

CTQ2010-14807		DEVELOPMENT AND COMBINATION OF CATALYTIC PROCESSES BASED ON HYDRODECHLORINATION AND OXIDATION FOR THE TREATMENT OF INDUSTRIAL WASTEWATER CONTAINED ORGANOCHLORINATED COMPOUNDS		THIS PROJECT DEALS WITH THE DEVELOPMENT OF CATALYST AND CATALYTIC PROCESSES BASED ON HYDRODECHLORINATION, AVANCED OXIDATION (OH¿ RADICALS) AND/OR WET AIR OXIDATION (DISSOLVED O2) FOR REMOVING CHLORINATED COMPOUNDS FROM INDUSTRIAL WASTEWATER. WET AIR OXIDATION AND ADVANCED OXIDATION PROCESSES HAS BEEN STUDIED AND SUCCESSFULLY APPLIED TO TREAT AQUEOUS EFFLUENTS CONTAINING NON-BIODEGRADABLE COMPOUNDS AS PHENOLS AND AROMATIC COMPOUNDS. SEVERAL WORKS HAVE USED THESE TECHNIQUES FOR TREATING INDUSTRIAL WASTEWATER CONTAINING CHLOROPHENOLS. NEVERTHELESS, RECENT WORKS HAVE PROVED THE PRESENCE OF REACTION BYPRODUCTS WHICH TOXICITY (MAINLY ACCUMULATED) IS SEVERAL ORDER OF MAGNITUDE HIGHER THAN THAT OF TARGET COMPOUNDS THEMSELVES. BESIDES, THOSE BYPRODUCTS REMAIN IN THE REACTION MEDIA EVEN AT SEVERE TREATMENT CONDITIONS. THEREFORE, THE FORMATION OF THOSE BIOACCUMULATIVE COMPOUNDS (PCBS, CHLOROPHENOLS AND CONDENSATION PRODUCTS) MUST BE AVOIDED SINCE THEIR LOW DEGRADABILITY FORCE TO EMPLOY STERN CONDITIONS TO REMOVE THEM, BECOMING THE PROCESS MORE EXPENSIVE. THE TRANSFORMATION OF CHLORINATED ORGANIC POLLUTANT INTO THE CORRESPONDING HYDROGENATED COMPOUND, WHICH OXIDATION TREATMENT IS ALREADY WELL ESTABLISHED, MAY EMERGES AS AN EFFICIENT ALTERNATIVE.	CASAS DE PEDRO	JOSE ANTONIO		UNIVERSIDAD AUTONOMA DE MADRID	DPTO. QUIMICA FISICA APLICADA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain
CTQ2010-21776-C02-01		NON CONVENTIONAL DEGRADATION TREATMENT BY FUNGI OF SELECTED PHARMACEUTICALS FROM EFFLUENTS: PROCESS DEVELOPMENT, MONITORING AND RISK ASSESSMENT	ENVIRONMENTAL CONTAMINATION\BIODEGRADATION\FUNGI\WWTP EFFLUENTS\EMERGING CONTAMINANTS\PHARMACEUTICALS\TRANSFORMATION PRODUCTS\ANALYTICAL METHODS\STRUCTUAL ELUCIDATION	IN THE LAST YEARS, A WIDE RANGE OF PHARMACEUTICAL RESIDUES (PHACS) HAVE BEEN FOUND ACROSS A WIDE VARIETY OF ECOSYSTEMS SUCH AS HYDROLOGICAL AND LAND-USE SETTINGS IN SEVERAL ENVIRONMENTAL MATRICES. THE CONSTANT PRESENCE OF LOW PHARMACEUTICAL CONCENTRATIONS, PRESENTS AS BOTH, PARENT COMPOUNDS AND THEIR METABOLITES AS WELL AS MIXTURES OF SEVERAL SUBSTANCES MAY LEAD TO CHRONIC TOXIC EFFECTS. SEVERAL INVESTIGATIONS INDICATED THAT CONVENTIONAL ACTIVATED SLUDGE (CAS) TECHNOLOGY IN WASTEWATER TREATMENT PLANTS (WWTPS) IS NOT ABLE TO REMOVE SOME PHARMACEUTICALS. AS A CONSEQUENCE OF THEIR HYDROPHOBIC/LIPOPHILIC NATURE AND/OR INTERACTIONS WITH SLUDGE PARTICLES, PHACS CAN ADSORB ONTO SEWAGE SOLIDS. DUE TO THE CONSTANT DETECTION OF PHACS IN THE ENVIRONMENT, AND CONSIDERING THAT CURRENT WWTPS DO NOT FIT THE REQUIRED BIODEGRADATION CONDITIONS, IT IS CONCLUDED THAT IT IS NECESSARY TO INVESTIGATE ON OTHER POSSIBLE WAYS OF DEGRADATION OF THOSE POLLUTING AGENTS. THIS GOAL CAN BE ACHIEVED WITH FUNGAL TREATMENT DUE TO THEIR POWERFUL UNSPECIFIC ENZYMATIC SYSTEM WHICH IS ABLE TO DEGRADE WIDE RANGE OF XENOBIOTICS. OUR PREVIOUS BENCH-SCALE STUDIES HAVE ENCOURAGED US TO PROPOSE AN EVALUATION OF THE POTENTIAL OF WHITE-ROT FUNGI TO DEGRADE PHARMACEUTICALS IN REAL-LIFE SITUATION INVOLVING EFFLUENTS SUCH AS: HOSPITAL, VETERINARY HOSPITAL, URBAN WASTEWATER FROM THE LITTLE VILLAGE AT THE UNIVERSITY, SLUDGE FROM WWTPS	VICENT HUGUET	M TERESA		UNIVERSIDAD AUTONOMA DE BARCELONA	DPTO. INGENIERIA QUIMICA	DPTO. INGENIERIA QUIMICA	01-01-11	31-12-13	MINECO	Spain
CTQ2010-20240		REMOVAL MECHANISMS OF PHARMACEUTICAL AND COSMETIC MICROPOLLUTANTS IN INNOVATIVE WASTEWATER TREATMENT TECHNOLOGIES		THE PRESENCE OF A WIDE GROUP OF ORGANIC MICROPOLLUTANTS IN DIFFERENT WATER BODIES HAS BEEN EVIDENCED BY AN IMPORTANT NUMBER OF RECENT PUBLICATIONS, BEING THE POTENTIAL ADVERSE EFFECTS ON THE BIOTA EXPOSED TO THEM OUTLINED IN SEVERAL STUDIES. THAT IS THE CASE OF THE PHARMACEUTICAL AND PERSONAL CARE PRODUCTS (PPCPS). MOST EFFORTS CARRIED OUT WHEN STUDYING THE FATE AND BEHAVIOUR OF SUCH COMPOUNDS DURING WASTEWATER TREATMENT HAVE FOCUSSED ON THE DETERMINATION OF THE OVERALL REMOVAL EFFICIENCIES ACHIEVED IN ACTIVATED SLUDGE SYSTEMS AND TO A LESS EXTENT IN MEMBRANE BIOREACTORS WORKING UNDER DIFFERENT OPERATIONAL CONDITIONS. AN OVERVIEW OF THESE WORKS EVIDENCES THAT SOME PPCPS ARE VERY PERSISTENT (E.G. CARBAMAZEPINE), OTHERS ARE REMOVED TO A HIGH DEGREE (E.G. IBUPROFEN) AND FOR A WIDE NUMBER OF SUBSTANCES THE REMOVAL EFFICIENCIES REPORTED VARY IN A WIDE RANGE (E.G. DICLOFENAC). IN ORDER TO UNDERSTAND THE DIFFERENT EFFICIENCIES ACHIEVED DEPENDING ON THE RESEARCH CONSIDERED, A DEEPER KNOWLEDGE ON THE FACTORS AFFECTING THEIR REMOVAL, INCLUDING THE MAIN OPERATIONAL PARAMETERS AND MECHANISTIC ASPECTS, AS WELL AS THE DIFFERENT REMOVAL MECHANISMS INVOLVED, IS REQUIRED. THE AIM OF THIS PROPOSAL IS TO STUDY THE REMOVAL OF MICROPOLLUTANTS WHEN INNOVATIVE TECHNOLOGIES ARE IMPLEMENTED FOR SEWAGE TREATMENT, THAT HAVE NOT BEEN CONSIDERED PREVIOUSLY. ALL EXPERIMENTS WILL BE	OMIL PRIETO	FRANCISCO		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. DE INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-11	31-12-13	MINECO	Spain

CTQ2010-16164		DECOLORIZATION AND DEGRADATION OF AZO DYES IN AQUEOUS MEDIUM BY MEANS OF ELECTROCHEMICAL ADVANCED OXIDATION PROCESSES UNDER THE ACTION OF UVA AND SOLAR LIGHT		IN THIS PROJECT, WE PROPOSE A STUDY ON THE DEGRADATION OF MONOAZO (ACID YELLOW 9, ACID YELLOW 36, ACID RED 29, AND ACID RED 88) AND DIAZO (REACTIVE BLACK 5 AND REACTIVE GREEN 19) DYES THAT ARE WIDELY USED IN THE TEXTILE INDUSTRY AND RELEASED WITH THEIR COLORED AND TOXIC WASTEWATERS. THESE COMPOUNDS WILL BE DESTROYED BY MEANS OF ELECTROCHEMICAL ADVANCED OXIDATION PROCESSES, WHICH ARE ENVIRONMENTALLY FRIENDLY. IN THE FIRST PLACE, THE MOST EFFICIENT METHODS DEVELOPED IN OUR PREVIOUS PROJECTS WILL BE APPLIED, USING A BORON-DOPED DIAMOND (BDD) ANODE THAT PRODUCES HIGHLY OXIDIZING HYDROXYL (¿OH) RADICALS FROM WATER OXIDATION AND AN AIR-DIFFUSION CATHODE THAT GENERATES H2O2 FROM O2 REDUCTION. THE ELECTRO-FENTON (EF) METHOD, IN WHICH THE FE2+ CATALYST REACTS WITH H2O2 GIVING ¿OH RADICALS FROM FENTON¿S REACTION, AS WELL AS THE UVA PHOTOELECTRO-FENTON (UVA-PEF) AND SOLAR PHOTOELECTRO-FENTON METHODS (SPEF), WHERE THE COMPLEXES OF FE3+ WITH FINAL CARBOXYLIC ACIDS ARE PHOTODECOMPOSED UNDER UVA OR SOLAR IRRADIATION, RESPECTIVELY, WILL BE TESTED. EACH METHOD WILL BE APPLIED IN A SMALL CELL OF 100 ML WITH ELECTRODES OF 3 CM2, MEASURING THE	BRILLAS COSO	ENRIQUE		UNIVERSIDAD DE BARCELONA	DPTO. QUIMICA FISICA	FACULTAD DE QUIMICA	01-01-11	31-12-13	MINECO	Spain
CTQ2010-14823		APPLICATION OF ADVANCED TECHNOLOGIES TO SURFACE AND TREATED WATERS FOR THE ELIMINATION OF POLLUTANTS REFRACTORY TO CONVENTIONAL METHODS		A WIDE RESEARCH PROGRAM IS PROPOSED IN THIS PROJECT FOCUSED ON THE APPLICATION OF SEVERAL TECHNOLOGIES FOR THE ELIMINATION OF POLLUTANT SUBSTANCES WHICH ARE PRESENT IN DIFFERENT WATER SYSTEMS. THESE SUBSTANCES ARE REFRACTORY TO THE CONVENTIONAL TREATMENTS THAT ARE PERFORMED IN POTABILIZATION PLANTS AS WELL AS IN URBAN SECONDARY WASTEWATER TREATMENT PLANTS; AND CONSEQUENTLY, THEY REQUIRE ADDITIONAL TREATMENTS FOR THEIR ELIMINATION. THEY ARE CALLED ¿EMERGING COMPOUNDS¿ BECAUSE MOST OF THEM ARE NOT YET INCLUDED IN WATER LEGISLATIONS, AND THEIR EFFECTS ON THE ENVIRONMENT ARE NOT WELL KNOWN. AMONG THEM, THE FOLLOWING CLASSES CAN BE CITED: STEROIDS AND HORMONES, PERSONAL CARE PRODUCTS, ANTISEPTICS, SURFACTANTS AND SURFACTANTS METABOLITES, PHARMACEUTICALS AND DISINFECTION PRODUCTS, ETC. IN A FIRST STAGE OF THE PRESENT PROJECT, STUDIES ON THE ELIMINATION OF SOME MODEL CONTAMINANTS IN WATER IS PROPOSED. THEY WILL BE INDIVIDUALLY DISSOLVED IN ULTRA-PURE WATER, OR IN MIXTURES OF COMPOUNDS WITH SIMILAR NATURE AND CHARACTERISTICS. IN A SECOND STAGE, THE ELIMINATION WILL BE STUDIED WHEN DISSOLVED IN TWO WATER TYPES: SURFACE WATERS FROM RIVERS AND PUBLIC RESERVOIRS, AND EFFLUENTS GENERATED IN MUNICIPAL WASTEWATER PLANTS AFTER SECONDARY TREATMENTS.	BENITEZ GARCIA	FRANCISCO JAVIER		UNIVERSIDAD DE EXTREMADURA	DPTO. INGENIERIA QUIMICA Y QUIMICA FISICA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain
CTQ2010-20740-C03-01		DEVELOPMENT OF NEW TREATMENT SCHEMES BASED ON SOLAR PHOTOCATALYSIS FOR WASTEWATER RECLAMATION	WASTE WATERS\WATER REGENERATION\HETEROGENEOUS PHOTOCATALYSIS	THE REUSE OF WASTEWATER REQUIRES PHYSICAL AND CHEMICAL TREATMENTS THAT RETURNED TO THE WATER ADEQUATE QUALITY TO THE INTENDED DESTINATION. THERE ARE CURRENTLY TECHNOLOGIES TO ACHIEVE THESE GOALS, WITH DIFFERENT COSTS AND PROBLEMATIC IN TERMS OF ITS IMPLEMENTATION, WHICH POINTS OUT A NEED TO EXPAND THE AVAILABLE TECHNOLOGIES TAKING INTO ACCOUNT THE MINIMIZATION OF ENERGY COST AND ENVIRONMENTAL RISK. IN ADDITION, TO ENSURE THE QUALITY OF THE RECLAIMED WATERS TREATMENTS ASSESSMENT THROUGH SOPHISTICATED ANALYTICAL TECHNIQUES IS NEEDED, INCLUDING THE STUDY OF THE POTENTIAL RISK OF THE USE OF TREATED WATER. THE OBJECTIVE OF THE PROJECT IS TO EXPLORE NEW SUSTAINABLE STRATEGIES BASED ON THE USE OF SOLAR ENERGY, FOR THE REGENERATION OF WASTEWATER IN ORDER TO REUSE FOR AGRICULTURAL, INDUSTRIAL OR RECREATIONAL PURPOSES, (AS RD 1620/2007). IN THIS SENSE, ATTENTION SHOULD BE GIVEN BOTH THE DISINFECTION OF THE TREATED WATER FROM SECONDARY PROCESSES (BIOLOGICAL, ACTIVATED SLUDGE), AND THE ELIMINATION OF RECALCITRANT POLLUTANTS THAT REMAIN IN THE CYCLE OF WATER REUSE AND ACCUMULATE IN THE ENVIRONMENT. THE SPECIFIC OBJECTIVES OF THE COORDINATED PROJECT, WHICH DERIVE FROM THE SYNERGIES BETWEEN THE THREE SUB-PROJECTS, ARE: 1. EXPLORE DIFFERENT TREATMENTS BASED ON THE USE OF SOLAR RADIATION FOR WASTEWATER RECLAMATION. 2. CONSIDER THE KINETICS OF PHOTO-DEGRADATION OF RECALCITRANT POLLUTANTS PRESENT IN THE TREATED	SANCHEZ PEREZ	JOSE ANTONIO		UNIVERSIDAD DE ALMERIA	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-11	31-12-13	MINECO	Spain

CTQ2010-17008		MINIATURIZED ANALYTICAL STRATEGIES TO CONTROL EMERGING CONTAMINANTS IN THE WATER DISINFECTION		THIS PROJECT IS AIMED TOWARDS THE DEVELOPMENT OF MINIATURIZED, RAPID AND SENSITIVE METHODOLOGIES FOR THE DETERMINATION OF EMERGING ORGANIC CONTAMINANTS BY-PRODUCTS FORMED IN DRINKING WATERS AFTER THEIR DISINFECTION. THE SELECTED COMPOUNDS ARE UNREGULATED DISINFECTION BY-PRODUCTS (DBPS) AND COMPRISED HALONITROMETHANES, CARBOXYLIC ACIDS AND ALDEHYDES (MAINLY HALOGENATED), AMONG OTHERS. A WIDE PART OF THIS PROJECT IS DEVOTED TO THE DEVELOPMENT OF NEW MINIATURIZED METHODS BY USING SOLID-PHASE (SPME) AND LIQUID-PHASE (LPME) MICROEXTRACTION. NOWADAYS, THESE TECHNIQUES ARE DISPLACING EVEN THE AUTOMATIC METHODOLOGIES SINCE THERE IS AN INCREASING INTEREST IN MINIMIZING OR OBVIATING THE CONSUMPTION OF ORGANIC SOLVENTS. THE STAGES OF THE TREATMENT OF SAMPLE WILL INCLUDE THE SEPARATION, PRECONCENTRATION, DERIVATIZATION, ETC. INTEGRATED INTO THE MINIATURIZED SYSTEM. THE APPLICATIONS OF THESE METHODOLOGIES ARE SCARCE REGARDING THE DBPS ANALYSIS, AND THEY HAVE MOSTLY BEEN CIRCUMSCRIBED TO THE DETERMINATION OF FOUR TRIHALOMETHANES (NOT CONTEMPLATED IN THIS PROJECT). IN THE CONTEXT OF THE RAPID METHODOLOGIES, AUTOMATIC UNITS WILL BE USED FOR THESE POLLUTANTS WHICH NEED NEITHER THE CONSUMPTION OF SOLVENT NOR THE TREATMENT OF SAMPLES (WATERS AND	GALLEGO FERNANDEZ	MERCEDES		UNIVERSIDAD DE CORDOBA	DPTO. QUIMICA ANALITICA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain
CTQ2010-21776-C02-02		NON-CONVENTIONAL DEGRADATION TREATMENT BY FUNGI OF SELECTED PHARMACEUTICALS FROM EFFLUENTS: PROCESS DEVELOPMENT, MONITORING AND RISK ASSESSMENT		THE OBJECTIVE OF THE GENERAL PROJECT PRESENTED BY THE COORDINATORS (UAB) IS THE DEVELOPMENT OF A NEW PROCESS TO BIODEGRADE PHARMACEUTICALS PRESENT IN DIFFERENT EFFLUENT WASTEWATERS, SUCH AS URBAN AND HOSPITAL WASTEWATER AND A REJECTION STREAM FROM A REVERSE OSMOSIS PROCESS, AS WELL AS IN SLUDGE FROM A CONVENTIONAL ACTIVATED SLUDGE CAS SYSTEM AND FROM A MEMBRANE BIOREACTOR MBR. FOR THIS PURPOSE, THE LIGNINOLYTIC FUNGUS TRAMETES VERSICOLOR WILL BE USED, SINCE PREVIOUS STUDIES WORKING WITH THIS ORGANISM PROVIDED THE BEST RESULTS IN THE DEGRADATION OF XENOBIOTICS. IN THE CURRENT PROJECT, NOT ONLY THE DEGRADATION OF SELECTED PHARMACEUTICALS WILL BE INVESTIGATED BUT ALSO THE GENERATION OF TRANSFORMATION PRODUCTS (TPS). THEREFORE, IT IS REQUIRED TO DETECT AND IDENTIFY TARGET COMPOUNDS AND THEIR TPS AT THE LOW LEVELS FOUND IN THE MATRICES INVESTIGATED, WHOSE COMPLEXITY HINDERS THE ANALYSIS PROCEDURE. THE SUBPROJECT PRESENTED HERE IS BASED ON THE DEVELOPMENT AND VALIDATION OF SEVERAL ANALYTICAL TOOLS TO EVALUATE THE EFFICIENCY OF THE DEGRADATION BY THE AFOREMENTIONED FUNGUS, WHICH IS CRUCIAL FOR THE EXECUTION OF THE GENERAL PROJECT. SCIENTIFIC ACTIVITIES THAT WILL BE PERFORMED IN THIS SUBPROJECT ARE: - THE DEVELOPMENT AND OPTIMIZATION OF NEW ANALYTICAL METHODOLOGIES WHICH ALLOW THE QUANTIFICATION OF NEW MICRO-CONTAMINANTS (I.E. ANTINEOPLASTIC DRUGS), AND IF POSSIBLE THEIR DEGRADATION PRODUCTS, IN THE MATRICES UNDER INVESTIGATION. FURTHERMORE, ALREADY EXISTING	RODRIGUEZ MOZAZ	SARA		INSTITUT CATALA DE RECERCA DE L AIGUA FUNDACIO PRIVADA	INSTITUT CATALA DE RECERCA DE L AIGUA FUNDACIO PRIVADA	INSTITUT CATALA DE RECERCA DE L AIGUA FUNDACIO PRIVADA	01-01-11	31-12-13	MINECO	Spain
CTQ2010-21411		OIL MILL WASTEWATER TREATMENT FOR REUSE IN THE PROCESS	BIOTREATMENT\WASTEWATER\SLUDGE\FUNGI\EMERGING CONTAMINANTS	THE PRODUCTIVE PROCESS OF OBTAINING OF OLIVE OIL, AT THE MOMENT BEARS THE PRODUCTION OF TWO TYPES OF WASTEWATERS WHOSE SEGREGATION IS FORCED USING RAFTS OF ACCUMULATION: A) THOSE COMING FROM THE LAUNDRY MACHINES OF THE OLIVE BEFORE THEIR ENTRANCE TO THE PROCESS AND B) THOSE THAT TAKE PLACE WHEN THE OLIVE OIL IS WASHING IN VERTICAL CENTRIFUGE THESE WASTEWATERS HAVE BEEN USED UNTIL FEW YEARS AGO FOR WATERING IN THE OWN OLIVE GROVE; HOWEVER THE CONFEDERATION HIDROGRAFICA OF THE GUADALQUIVIR AND THE ENVIRONMENT MINISTRY, BASED ON THE LAW OF WATERS OF 1/2001, OVER REUSE OF WASTEWATERS, ARE PROHIBITED THEIR INDISCRIMINATE USE FROM 2002, DEMANDING SOME CONCENTRATIONS EVERY TIME LOWER AND LOWER IN CERTAIN PARAMETERS THAT HAVE LEFT REDUCING YEAR AFTER YEAR. THIS PARAMETERS AT THE MOMENT DON¿T OVERCOME 1000 PPM OF COD, 1000 PPM OF BOD, 600 PPM OF SUSPENDED SOLIDS AND PH 6-9, PARAMETERS THAT THESE WATERS DON'T COMPLETE, AND FOR THAT THEIR TREATMENT IS FORCED.. ON THE OTHER HAND, ALSO, THEY WILL CAN CONTAIN POLLUTING SUBSTANCES THAT FIGURE IN THE EEC DIRECTIVE 76/464 AND 80/68/EEC, COMING FROM PESTICIDES PRODUCTS. THAT IS A SERIOUS PROBLEM FOR OVER OF 800 ANDALUSIAN OLIVE MILLS INDUSTRIES THAT HAVE TO RETURN TO THE STORAGE OF THESE WASTEWATERS IN RAFTS AND TO WAIT THEIR EVAPORATION (IN A SIMILAR WAY TO THAT OF THE YEARS 70 USED FOR THE OLIVE MILL WASTEWATER)	RODRIGUEZ VIVES	SALVADOR		UNIVERSIDAD DE GRANADA	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS	01-01-11	31-12-13	MINECO	Spain

CTQ2010-20740-C03-02		DEVELOPMENT OF NEW TREATMENT SCHEMES BASED ON SOLAR PHOTOCATALYSIS FOR WASTEWATER RECLAMATION		THE REUSE OF WASTEWATER REQUIRES PHYSICAL AND CHEMICAL TREATMENTS THAT RETURNED TO THE WATER ADEQUATE QUALITY TO THE INTENDED DESTINATION. THERE ARE CURRENTLY TECHNOLOGIES TO ACHIEVE THESE GOALS, WITH DIFFERENT COSTS AND PROBLEMATIC IN TERMS OF ITS IMPLEMENTATION, WHICH POINTS OUT A NEED TO EXPAND THE AVAILABLE TECHNOLOGIES TAKING INTO ACCOUNT THE MINIMIZATION OF ENERGY COST AND ENVIRONMENTAL RISK. IN ADDITION, TO ENSURE THE QUALITY OF THE RECLAIMED WATERS TREATMENTS ASSESSMENT THROUGH SOPHISTICATED ANALYTICAL TECHNIQUES IS NEEDED, INCLUDING THE STUDY OF THE POTENTIAL RISK OF THE USE OF TREATED WATER. THE OBJECTIVE OF THE PROJECT IS TO EXPLORE NEW SUSTAINABLE STRATEGIES BASED ON THE USE OF SOLAR ENERGY, FOR THE REGENERATION OF WASTEWATER IN ORDER TO REUSE FOR AGRICULTURAL, INDUSTRIAL OR RECREATIONAL PURPOSES, (AS RD 1620/2007). IN THIS SENSE, ATTENTION SHOULD BE GIVEN BOTH THE DISINFECTION OF THE TREATED WATER FROM SECONDARY PROCESSES (BIOLOGICAL, ACTIVATED SLUDGE), AND THE ELIMINATION OF RECALCITRANT POLLUTANTS THAT REMAIN IN THE CYCLE OF WATER REUSE AND ACCUMULATE IN THE ENVIRONMENT. THE SPECIFIC OBJECTIVES OF THE COORDINATED PROJECT, WHICH DERIVE FROM THE SYNERGIES BETWEEN THE THREE SUB-PROJECTS, ARE: 1. EXPLORE DIFFERENT TREATMENTS BASED ON THE USE OF SOLAR RADIATION FOR WASTEWATER RECLAMATION. 2. CONSIDER THE KINETICS OF PHOTO-DEGRADATION OF RECALCITRANT POLLUTANTS PRESENT IN THE TREATED	MALDONADO RUBIO	MANUEL IGNACIO		CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	PLATAFORMA SOLAR DE ALMERIA	PLATAFORMA SOLAR DE ALMERIA	01-01-11	31-12-13	MINECO	Spain
CTQ2010-20740-C03-03		DEVELOPMENT OF NEW TREATMENT SCHEMES BASED ON SOLAR PHOTOCATALYSIS FOR WASTEWATER RECLAMATION		THE REUSE OF WASTEWATER REQUIRES PHYSICAL AND CHEMICAL TREATMENTS THAT RETURNED TO THE WATER ADEQUATE QUALITY TO THE INTENDED DESTINATION. THERE ARE CURRENTLY TECHNOLOGIES TO ACHIEVE THESE GOALS, WITH DIFFERENT COSTS AND PROBLEMATIC IN TERMS OF ITS IMPLEMENTATION, WHICH POINTS OUT A NEED TO EXPAND THE AVAILABLE TECHNOLOGIES TAKING INTO ACCOUNT THE MINIMIZATION OF ENERGY COST AND ENVIRONMENTAL RISK. IN ADDITION, TO ENSURE THE QUALITY OF THE RECLAIMED WATERS TREATMENTS ASSESSMENT THROUGH SOPHISTICATED ANALYTICAL TECHNIQUES IS NEEDED, INCLUDING THE STUDY OF THE POTENTIAL RISK OF THE USE OF TREATED WATER. THE OBJECTIVE OF THE PROJECT IS TO EXPLORE NEW SUSTAINABLE STRATEGIES BASED ON THE USE OF SOLAR ENERGY, FOR THE REGENERATION OF WASTEWATER IN ORDER TO REUSE FOR AGRICULTURAL, INDUSTRIAL OR RECREATIONAL PURPOSES, (AS RD 1620/2007). IN THIS SENSE, ATTENTION SHOULD BE GIVEN BOTH THE DISINFECTION OF THE TREATED WATER FROM SECONDARY PROCESSES (BIOLOGICAL, ACTIVATED SLUDGE), AND THE ELIMINATION OF RECALCITRANT POLLUTANTS THAT REMAIN IN THE CYCLE OF WATER REUSE AND ACCUMULATE IN THE ENVIRONMENT. THE SPECIFIC OBJECTIVES OF THE COORDINATED PROJECT, WHICH DERIVE FROM THE SYNERGIES BETWEEN THE THREE SUB-PROJECTS, ARE: 1. EXPLORE DIFFERENT TREATMENTS BASED ON THE USE OF SOLAR RADIATION FOR WASTEWATER RECLAMATION. 2. CONSIDER THE KINETICS OF PHOTO-DEGRADATION OF RECALCITRANT POLLUTANTS PRESENT IN THE TREATED WATERS. 3. CONSIDER THE KINETICS OF DISINFECTION OF TREATED	AGUERA LOPEZ	ANA		UNIVERSIDAD DE ALMERIA	DPTO. HIDROGEOLOGIA Y QUIMICA ANALITICA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-11	31-12-13	MINECO	Spain
CTQ2010-20554		DEVELOPMENT OF NEW STRATEGIES OF EXTRACTION IN THE ANALYSIS OF PHARMACEUTICAL RESIDUES. IMPLEMENTATION IN REAL SAMPLES OF ENVIRONMENTAL INTEREST		THIS PROJECT IS FOCUSSED IN THE DEVELOPMENT AND IMPLEMENTATION OF NEW STRATEGIES OF EXTRACTION OF PHARMACEUTICAL RESIDUES FOR THEIR DETECTION, IDENTIFICATION AND DETERMINATION IN LIQUID AND SOLID SAMPLES OF ENVIRONMENTAL CHARACTER, BY USING EXTRACTION SYSTEMS WITHOUT THE PRESENCE OF ORGANIC SOLVENTS. IN OTHER WORDS WE WILL USE "CLEAN" METHODOLOGIES WITHIN OF SO CALLED THE "GREEN CHEMISTRY". IN ADDITION THE MONITORING OF SENSITIVE ZONES TO THIS KIND OF POLLUTION WILL BE CARRIED OUT . FOR THAT, WE WILL PUT ON SPECIAL INTEREST IN THE DEVELOPMENT OF THE METHODS OF EXTRACTION BY USING MICELLAR SYSTEMS AS EXTRACTANT AGENTS, SO MUCH IN LIQUID SAMPLES (COASTAL WATERS, WASTEWATERS AND POLISHED WATERS) AS IN SOLID SAMPLES (MARINE SEDIMENTS, MUDS AND MARINE ORGANISMS). IN TURN THERE WILL BE IMPROVED THE SEPARATION AND QUANTIFICATION OF THE EMERGENT POLLUTANTS IN STUDY BY THE APPLICATION OF THE MOST SENSITIVE ANALYTICAL TECHNOLOGIES AS LIQUID CHROMATOGRAPHY ¿MASS SPECTROMETRY. FINALLY WE WILL RAISE THE CONTROL AND THE MONITORING OF THE POLLUTANTS IN STUDY, WHICH WILL BE VERY USEFUL FOR THE OPTIMIZATION OF TECHNOLOGIES FOR THE TREATMENT WASTEWATERS FROM EFFLUENT OF	SOSA FERRERA	ZORAIDA		UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA	DPTO. QUIMICA	DPTO. QUIMICA	01-01-11	31-12-13	MINECO	Spain

CTQ2011-26799		INTEGRATION OF MEMBRANE, ION-EXCHANGE AND CHEMICAL PRECIPITATION PROCESSES FOR THE VALORIZATION OF CONCENTRATES FROM WATER DESALINATION TREATMENTS	MICROENCAPSULATION\MICROCAPSULES\MERCURY\SURFACE WATER\GROUNG WATER\ACID DRAINAGE\ALMADEN\EXTRACTION AGENT	REVERSE OSMOSIS (RO) AND ELECTRODIALYSIS REVERSE (EDR) ARE A WIDELY USED AND RAPIDLY GROWING DESALINATION TECHNOLOGY. A MAJOR DISADVANTAGE OF THESE PROCESSES IS THAT THE CONCENTRATE FROM THE RO AND EDR PROCESSES, WHICH COULD BE AS MUCH AS 40% OF THE FEED STREAM, IN THE CASE OF SEA WATER DESALINATION AND AS LOW AS 5-10% FOR DESALINATION OF BRACKISH WATERS (E.G. SURFACE WATERS, INDUSTRIAL AND DOMESTIC WASTE WATER TREATMENT DISCHARGES) REPRESENTS A POLLUTING STREAM. THESE WASTE STREAMS, RECOGNIZED AS BRINES OR CONCENTRATES, ARE CHARACTERIZED BY A HIGH SALINITY CONTENT FROM 1 TO 3% WT(%), AND CAN POSE A SIGNIFICANT CHALLENGE TO THE IMPLEMENTATION OF THESE MEMBRANE TREATMENT PROCESSES, PARTICULARLY FOR INLAND LOCATIONS THAT DO NOT HAVE THE OPTION OF SEA DISPOSAL BY DISPERSION AND BLENDING. AN EXCELLENT ENVIRONMENTALLY BENIGN AND SUSTAINABLE APPROACH TO DISPOSAL COULD BE BENEFICIAL REUSE AND VALORISATION OF THE COMPONENTS OF THE WASTE STREAM. THE MAIN COMPONENTS TO BE RECOVERED ARE: A) WATER (DECREASING THE WASTE VOLUME), B) SODIUM CHLORIDE, THAT COULD BE USED IN THE CHLOROALKALY INDUSTRY TO PRODUCE CHLORINE,C) SODIUM SULPHATE TO PRODUCE SURFACTANTS, D) CALCIUM AND MAGNESIUM TO PRODUCE CALCIUM AND MAGNESIUM CARBONATES TO BE USED AS MINERAL FILLERS FOR PAINTS AND POLYMERS, E) MAGNESIUM HYDROXIDE AS NEUTRALIZING REAGENT; F) PHOSPHATE TO PRODUCE SOIL FERTILIZERS, AND OTHERS AS COULD BE G) THE RECOVERY OF LITHIUM FROM SEA WATER	CORTINA PALLAS	JOSE LUIS		UNIVERSITAT POLITECNICA DE CATALUNYA	DPTO. INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA INDUSTRIAL DE BARCELONA	01-01-12	31-12-14	MINECO	Spain
CTQ2011-22675		RECYCLING OF WASTEWATERS AND SLUDGES TO PRODUCE BIOPLASTIC MATERIALS	COMPLEX INDUSTRIAL WASTEWATERS\HIGH-STRENGTH AMMONIUM WASTEWATER\AEROBIC GRANULAR REACTORS\PARTIAL NITRIFICATION\DENITRIFICATION FROM NITRITE\RECALCITRANT COMPOUNDS\AROMATIC HYDROCARBONS\MATHEMATICAL MODELLING	THIS PROJECT IS FOCUSED ON THE VALORISATION OF DIFFERENT LIQUID WASTES BY MEANS OF THE UTILIZATION OF MIXED CULTURES TO ACCUMULATE THEIR ORGANIC CARBON FRACTION PRESENT IN THESE EFFLUENTS IN THE FORM OF POLYHYDROXYALKANOATES (PHA) INSTEAD OF THE SIMPLE REMOVAL OF THESE COMPOUNDS IN WASTEWATER TREATMENT PROCESSES. THESE ACCUMULATED COMPOUNDS HAVE DIFFERENT POTENTIAL APPLICATIONS DEPENDING ON THEIR COMPOSITION, SUCH AS BIOPLASTICS PRODUCTION, ENERGY SOURCE OR GROUNDWATER REMEDIATION. THE AIM OF THIS RESEARCH WORK IS TO ESTABLISH THE OPTIMUM OPERATIONAL CONDITIONS TO PRODUCE MIXED CULTURES ABLE TO ACCUMULATE THE PHA USING LIQUID WASTES LIKE GLYCEROL, FROM THE BIODIESEL PRODUCTION PROCESS, CHARACTERIZED BY THE ABSENCE OF AMMONIA CONTENT, AND PRE-ACIDIFIED FISH CANNING EFFLUENTS CONTAINING AMMONIA. FURTHERMORE THESE MIXED CULTURES WILL BE STUDIED TO ACHIEVE THE OPERATIONAL CONDITIONS TO REACH THE HIGHEST PERCENTAGES OF PHA ACCUMULATION WITH EACH SUBSTRATE. KINETIC AND STOICHIOMETRIC PARAMETERS WILL BE STUDIED TO OBTAIN INFORMATION REGARDING BIOPLASTICS PRODUCTIVITY. BIOMASS ENRICHMENT AND ACCUMULATION PROCESSES ARE HIGHLY DEPENDENT ON THE SUBSTRATE COMPOSITION. FOR THIS REASON THE EFFECTS OF THE USE OF DIFFERENT SUBSTRATES AND OF	MOSQUERA CORRAL	ANUSKA		UNIVERSIDADE DE SANTIAGO DE COMPOSTELA	DPTO. DE INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA	01-01-12	31-12-14	MINECO	Spain
CTQ2011-26258		APPLICATION OF ADVANCED OXIDATION PROCESSES FOR WATER REUSE		THIS PROJECT COVERS SEVERAL ASPECTS RELATED TO THE USE OF ADVANCED OXIDATION PROCESSES (AOPS) ON THE REMOVAL OF POLLUTANTS TO WATER REUSE. IN THIS WAY, WE WILL STUDY THE APPLICATION OF THESE PROCESSES TO THE DEGRADATION OF EMERGING CONTAMINANTS IN WATER AND THE MODIFICATION OF WATER QUALITY PARAMETERS TO ENABLE THEIR REUSE. ONE INTERESTING ASPECT TO TAKE INTO ACCOUNT IS THE EXISTENCE OF COMPETITION FOR THE OXIDANTS BETWEEN THE ORGANIC MATTER PRESENT IN THE WATER (SURFACE OR WASTE) AND THE EMERGING CONTAMINANTS. ALSO, THE ECONOMIC OPTIMIZATION OF ANY WATER MANAGEMENT STRATEGY IS VERY IMPORTANT TO ENSURE ITS VIABILITY. THEREFORE, WE MUST DEVELOP COMBINATIONS OF PROCESSES TO ACHIEVE GOOD RESULTS (SEPARATION PROCESSES, OXIDATION AND BIOLOGICAL TREATMENT). ADDITIONALLY, WE ALSO AIM TO INITIATE THE STUDY OF REMOVAL OF CONTAMINANTS IN SLUDGE.	ESPLUGAS VIDAL	SANTIAGO		UNIVERSIDAD DE BARCELONA	DPTO. INGENIERIA QUIMICA	DPTO. INGENIERIA QUIMICA	01-01-12	31-12-14	MINECO	Spain

CTQ2011-29035-C02-01		DEVELOPMENT OF INTEGRATED TECHNOLOGIES BASED ON ADVANCED OXIDATION PROCESSES AND CARBON MATERIALS FOR WATER DECONTAMINATION	WATER TREATMENT\AROMATIC COMPOUNDS\CARBON MATERIALS\ADVANCED OXIDATION PROCESSES\GAMMA RADIOLISIS	THE OBJECTIVE OF THE SUBPROJECT TECPROAGUA IS THE DEVELOPMENT OF EFFICIENT TECHNOLOGIES FOR THE WATER TREATMENT AND FOR THE REMOVAL OF AROMATIC ORGANIC COMPOUNDS THAT ARE RECENTLY FOUND IN WATERS AT INCREASING RATIOS, AS WELL AS THE DEVELOPMENT OF MODELING AND OPTIMIZATION TECHNOLOGIES FOR THE EFFICIENT OPERATION OF PROCESSES IMPLEMENTING SUCH TECHNOLOGIES. IS A PROJECT THAT WILL ALLOW CHARACTERIZING AND IMPROVING NEW TECHNOLOGIES FOR ELIMINATING POLLUTANTS. THE POLLUTANTS ADDRESSED ARE ANTIBIOTICS (TETRACYCLINES AND SULFAMETAZINES), ANTINEOPLASICS (CYTARABINE AND DIATRIZOATE), ENDOCRINE DISRUPTORS (17-ALPHA-ESTRADIOL AND BISFENOL-A), HERBICIDES (AMINOTRIAZOLE, FLUROXYPYR AND CLOPYRALID), POLYPHENOLS AND ORGANOLEPTIC COMPOUNDS (2-METHYLISOBORNEOL AND 2,4,6-TRICHLOROANISOLE). THESE ARE EMERGING POLLUTANTS THAT HAVE BEEN RECENTLY FOUND IN WASTE AND DRINKING WATERS WHOSE HEALTH AND ENVIRONMENTAL EFFECTS ARE STILL UNKNOWN. THE WATER TREATMENTS WILL BE CARRIED OUT BY ADVANCED OXIDATION PROCESSES (AOP) AND ADSORPTION PROCESSES. RECENTLY DEVELOPED MATERIALS WILL BE USED FOR THE ADSORPTION PROCESSES AS ACTIVATED CARBON FIBRES, FABRICS, AND FELTS AND WE WILL PREPARED ADSORBENT MATERIALS FROM ORGANIC POLYMERS. THE REMOVAL OF THE SELECTED POLLUTANTS WILL BE	LOPEZ RAMON	MARIA VICTORIA		UNIVERSIDAD DE JAEN	DPTO. QUIMICA INORGANICA Y ORGANICA	FACULTAD DE CIENCIAS EXPERIMENTALES	01-01-12	31-12-14	MINECO	Spain
CTQ2011-27085		MERCURY REMOVAL FROM ALMADEN MINING DISTRIC SURFACE, GROUND AND DRAINAGE WATERS USING MICROENCAPSULES CONTAINING SELECTIVE EXTRACTION AGENTS	CATALYTIC WET AIR OXIDATION; WASTEWATERS	ALTHOUGH MERCURY (HG) MINING IN THE ALMADEN DISTRICT CEASED IN MAY 2002, THE CONSEQUENCES OF 2000 YEARS OF MINING IN THE DISTRICT HAS RESULTED IN THE DISSEMINATION OF HG INTO THE SURROUNDING ENVIRONMENT WHERE IT POSES AN EVIDENT RISK TO BIOTA AND HUMAN HEALTH. THE LEVELS OF MERCURY IN THE MINE DRAINAGES, BUT ALSO IN THE SURFACE AND GROUND WATERS OF THE ZONE ARE HIGH AND TO FIND AN EFFICIENT AND ENVIRONMENTAL FRIENDLY SOLUTION IS AN URGENT TASK. THE LEVELS OF HG IN THE RIVERS AND SURFACE WATERS OF THE DISTRICT OVERPASS THE RECOMMENDED VALUES, BUT ARE IN THE ORDER OF NANO TO MICRO GRAMS MAKING NOT VIABLE THE USAGE OF CONVENTIONAL MATERIALS AND/OR TECHNIQUES FOR ITS REMOVAL. CONVENTIONAL ION EXCHANGE OR LIQUID-LIQUID EXTRACTION ALTHOUGH ARE EFFECTIVE FOR THE TREATMENT OF WATERS EXHIBIT SOME SERIOUS LIMITATIONS IN THE CASE OF TREATMENT WATERS FROM NATURAL SOURCES. THE FORMATION OF STABLE EMULSIONS AND THE LOSSES OF SOLVENT AND EXTRACTION AGENT ARE THE MAIN PROBLEMS IN L-L EXTRACTION. ON THE OTHER HAND, IN ION EXCHANGE THE CONVENTIONAL RESINS ARE NOT VERY SELECTIVE AND THOSE WITH A HIGH SELECTIVITY (CHELATING RESINS) HAVE SLOWER EXCHANGE KINETICS AND THERE IS A VERY LOW VARIETY OF FUNCTIONAL GROUPS IN THE MARKET. IN A PREVIOUS PROJECT OUR GROUP HAS DEVELOPED A NEW MATERIAL CONCEPT CONSISTING IN MICROCAPSULES	RODRIGUEZ ROMERO	JUAN FRANCISCO		UNIVERSIDAD DE CASTILLA-LA MANCHA	INSTITUTO DE TECNOLOGIA QUIMICA Y MEDIOAMBIENTAL DE CIUDAD REAL	INSTITUTO DE TECNOLOGIA QUIMICA Y MEDIOAMBIENTAL DE CIUDAD REAL	01-01-12	31-12-14	MINECO	Spain
CTQ2011-24745		TREATMENT OF COMPLEX INDUSTRIAL WASTEWATERS THROUGH FULLY BIOLOGICAL PROCESSES WITH AEROBIC GRANULAR REACTORS	WATER\OZONE\TIO2\FOTOCATALISIS\FENTON\AOP	SEVERAL SECTORS OF THE CHEMICAL INDUSTRY PRODUCE WASTEWATERS CONTANING BOTH HIGH AMMONIUM AND RECALCITRANT/TOXIC ORGANIC COMPOUNDS, SUCH AS AROMATIC HYDROCARBONS. THE TREATMENT OF THESE EFFLUENTS IS NO COMPLETELY SOLVED, GIVEN THAT THE SOLUTION ADOPTED BY THE INDUSTRY ARE EXPENSIVE PHYSICO-CHEMICAL TREATMENTS WHICH DO NOT REMOVE COMPLETELY THE CONTAMINANTS. BESIDES, CHEMICAL INDUSTRY FREQUENTLY REFUSES TO USE FULLY BIOLOGICAL TREATMENTS BECAUSE SEVERAL WEAKNESSES ARE USUALLY IDENTIFIED FOR CONVENTIONAL BIOLOGICAL TREATMENTS: SCENARIOS OF SEQUENTIALLY ALTERNATING POLLUTANTS, PERIODS WITHOUT WASTEWATER PRODUCTION (LONG TERM STARVATION) OR SHOCK LOADING EPISODES. WITH THE PRESENT PROJECT PROPOSAL WE WOULD LIKE TO INVESTIGATE A LOW COST TREATMENT FOR SUCH INDUSTRIAL WASTEWATERS. THEREFORE OUR INITIAL HYPOTHESIS IS THAT SUCH A LOW COST TREATMENT IS ONLY POSSIBLE IN THE CASE OF A FULLY BIOLOGICAL PROCESS, AND WE PROPOSE AS AN ALTERNATIVE THE USE OF AEROBIC GRANULAR REACTORS INCLUDING A CONSORTIUM OF AMMONIA OXIDISING BACTERIA (AOB) AND SPECIFIC MICROORGANISMS ABLE TO BIODEGRADE AROMATIC HYDROCARBONS. THE INITIAL HYPOTHESIS IS WELL SUPPORTED BY OUR EXPERIENCE IN PARTIAL NITRIFYING GRANULAR REACTORS AND THE BIOLOGICAL TREATMENT OF INDUSTRIAL WASTEWATERS. ON THE OTHER HAND, SEVERAL WELL-KNOWN REFERENCES HIGHLIGHT THE POTENTIALITY OF THE	CARRERA MUYO	JULIAN		UNIVERSIDAD AUTONOMA DE BARCELONA	DPTO. INGENIERIA QUIMICA	DPTO. INGENIERIA QUIMICA	01-01-12	31-12-14	MINECO	Spain

CTQ2011-29272-C04-02		TUNNING CARBON NANOTUBE PROPERTIES FOR THEIR USE IN BASE CATALYSIS AND IN EMERGENT AQUEOUS POLLUTANTS REMOVAL	GROUNDWATER\QUALITY\AGRICULTURE\NITRATE\POLLUTION\LEGISLATION\ECONOMY\ENVIRONMENT\LAND MANAGEMENT	THIS SUB-PROJECT EXPLORES THE USE OF CARBON NANOTUBES (PRODUCED BY OTHER PARTNERS OF THE COORDINATED PROJECT) AS CATALYSTS FOR VARIOUS PROCESSES RELATED TO BASIC CATALYSIS AND REMOVAL OF EMERGING CONTAMINANTS FROM WATER STREAMS. IN THE FIRST CASE, THE USE OF NITROGEN-CONTAINING CARBON NANOTUBES AS CATALYSTS FOR GAS-PHASE ALDOL AND KETONIC CONDENSATIONS WILL BE STUDIED. THESE REACTIONS ARE OF GREAT INTEREST IN THE PREPARATION OF FUELS AND CHEMICALS DERIVED FROM BIOMASS DERIVATIVES, SUCH AS KETONES OR CARBOXYLIC ACIDS. THE PROPOSED CATALYSTS SHOW CERTAIN ADVANTAGES OVER MORE COMMON CATALYSTS FOR THESE REACTIONS (BASIC MIXED OXIDES), SUCH AS THE POSSIBILITY OF TUNING THEIR SELECTIVITY TOWARDS THE DESIRED CONDENSATION PRODUCTS OR MINIMIZING THE DEACTIVATION CAUSED BY THE FORMATION OF CARBONACEOUS DEPOSITS, JUST BY CHANGING THE CONCENTRATION AND STRENGTH OF THE BASIC SITES INDUCED BY THE NITROGEN ATOMS. WE WILL STUDY THE EFFECT OF DIFFERENT FORMS PREPARATION OF THE CATALYSTS IN THEIR ACTIVITY, SELECTIVITY AND RESISTANCE TO DEACTIVATION IN CORRELATING THESE FACTORS WITH PHYSICO-CHEMICAL PROPERTIES OF THE CATALYSTS, ESPECIALLY NITROGEN CONTENT AND THE DISTRIBUTION OF BASIC SITES. THE INFORMATION OBTAINED IN THESE STUDIES WILL ALLOW THE REFORMULATION OF THE CATALYSTS, AS WELL AS THE EXTENSION OF THESE STUDIES TO OTHER REACTANTS.	ORDOÑEZ GARCIA	SALVADOR		UNIVERSIDAD DE OVIEDO	DPTO. INGENIERIA QUIMICA Y TECNOLOGIA DEL MEDIO AMBIENTE	FACULTAD DE QUIMICA	01-01-12	31-12-14	MINECO	Spain
CTQ2011-27169		INTEGRATED PROCESS CATALYTIC WET AIR OXIDATION + AEROBIC BIOLOGICAL TREATMENT FOR THE PURIFICATION OF PHARMACEUTICAL PRODUCTS PRESENT IN WASTEWATERS	AROMATIC ORGANIC COMPOUNDS\CARBON MATERIALS\FENTON OXIDATION PROCESSES\CATALYTIC WET OXIDATION\ADSORPTION\INTEGRATED TECHNOLOGIES\POLLUTED WATERS	THE AIM OF THIS PROJECT IS THE ESTABLISHMENT OF OPTIMAL CONDITIONS TO CARRY OUT THE DEGRADATION OF SEVERAL PHARMACEUTICAL PRODUCTS PRESENTS IN WASTEWATER BY AN INTEGRATED PROCESS CATALYTIC WET AIR OXIDATION - AEROBIC BIOLOGICAL TREATMENT. CHEMICAL COMPOSITION OF WASTEWATERS PRESENTS ANTIBIOTICS, HORMONES, ANALGESICS, TRANQUILIZERS, AND ALL KINDS OF PHARMACEUTICAL PRODUCTS. THIS PROBLEM HAS SPREAD AND NOW APPEAR CONTAMINATED BOTH SURFACE WATER AND GROUNDWATER. HETEROGENEOUS CATALYTIC WET AIR OXIDATION IS PRESENTED AS A FAST, EFFICIENT AND ENVIRONMENTALLY FAVORABLE FOR THE REMOVAL OF TOTAL ORGANIC CARBON, WHILE BIOLOGICAL DEGRADATION CAN BE SEEN AS A COMPLEMENTARY METHOD OF PURIFICATION TO ATTAIN FINAL EFFLUENT DISCHARGE CONDITIONS MARKED BY LEGISLATION. IN THE CATALYTIC WET AIR OXIDATION, WE WILL USE METAL CATALYSTS SUPPORTED ON HYDROTALCITES AND TITANIUM DIOXIDE. THESE SUPPORTS ARE MATERIALS THAT HAVE APPLICATIONS IN VERY DIFFERENT FIELDS: CATALYSIS, ADSORPTION, ETC. THE INCORPORATION OF METAL SPECIES ON THE SUPPORT CAN BE CARRIED OUT BY DIFFERENT METHODS OR TECHNIQUES. WE WILL STUDY THE ACTIVITY AND STABILITY OF THE CATALYSTS PREPARED, ANALYZING THE EVOLUTION OF ACTIVITY AND CONTENT OF ACTIVE SPECIES OVER TIME. IN AEROBIC BIOLOGICAL PROCESS WILL STUDY THE	OVEJERO ESCUDERO	GABRIEL		UNIVERSIDAD COMPLUTENSE DE MADRID	DPTO. INGENIERIA QUIMICA	FACULTAD DE CIENCIAS QUIMICAS	01-01-12	31-12-14	MINECO	Spain
CTQ2011-29035-C02-02		NEW OXIDATION TECHOLOGIES BASED ON THE SIMOULTANEOUS USE OF CARBON MATERIALS AND RADIATION TO DEGRADATE AROMATIC COMPOUNDS FROM WATERS	MBR SYSTEMS\MEMBRANE FOULING\MIXED LIQUOR CHARACTERIZATION\BACTERIAL COMMUNITIES\PROTISTS AND YEAST POPULATIONS\PREDATION\BIOINDICATORS\BACTERIAL PATHOGENS\MOLECULAR METHODS\PYROSEQUENCING	THE OBJECTIVE OF THE PROJECT WAVE21 IS THE DEVELOPMENT OF EFFICIENT TECHNOLOGIES FOR THE WATER TREATMENT, URBAN WASTEWATER OR FROM AGRICULTURAL USE, AND FOR THE REMOVAL OF AROMATIC ORGANIC COMPOUNDS THAT ARE RECENTLY FOUND IN WATERS AT INCREASING RATIOS, AS WELL AS THE DEVELOPMENT OF MODELING AND OPTIMIZATION TECHNOLOGIES FOR THE EFFICIENT OPERATION OF PROCESSES IMPLEMENTING SUCH TECHNOLOGIES. WAVE21 IS A PROJECT THAT WILL ALLOW CHARACTERIZING AND IMPROVING NEW TECHNOLOGIES FOR ELIMINATING PHARMACEUTICAL POLLUTANTS, HERBICIDES, POLYPHENOLS AND ORGANOLEPTIC POLLUTANTS, AND IT IS A METHODOLOGICAL PROJECT THAT WILL PRODUCE OPTIMAL MANAGEMENT PROCEDURES AND STRATEGIES FOR THE INTEGRATED OPERATION OF DEGRADATION PROCESSES OF RECALCITRANT CONTAMINANTS IN WASTEWATERS. THE CONTAMINANTS ADDRESSED ARE ANTIBIOTICS (TETRACYCLINES AND SULFAMETAZINES), ANTINEOPLASICS (CYTARABINE AND DIATRIZOATE), HERBICIDES (AMINOTRIAZOLE, FLUROXYPYR AND CLOPYRALID), POLYPHENOLS AND ORGANOLEPTIC COMPOUNDS (2-METHYLISOBORNEOL AND 2,4,6-TRICHLOROANISOLE). THE WATER TREATMENTS WILL BE CARRIED OUT BY ADVANCED OXIDATION PROCESSES (AOP), ADSORPTION/BIOAPSORTION PROCESSES BY NEW CARBON MATERIALS, CATALYZED OZONATION, CATALYZED PHOTO-OXIDATION AND RADIOLYSIS BY GAMMA RADIATION. RECENTLY DEVELOPED MATERIALS WILL BE USED FOR THE ADSORPTION PROCESSES	SANCHEZ POLO	MANUEL		UNIVERSIDAD DE GRANADA	DPTO. QUIMICA INORGANICA	DPTO. QUIMICA INORGANICA	01-01-12	31-12-14	MINECO	Spain

CTQ2012-35789-C02-01		CATALYST PREPARATION AND THEIR APPLICATION ON THE REMOVAL OF REFRACTORY CONTAMINANTS OF WASTEWATER BY MEANS OF PHOTOCATALYTIC OZONATION	IN-SITU GENERATION OF HYDROGEN PEROXIDE\CATALYSTS\METAL NANOPARTICLES\FENTON\PHOTO-FENTON\TREATMENT OF POLLUTED WATER\WASTEWATER\CATALYTIC OXIDATION	IN THIS SUBPROJECT IT IS PROPOSED THE STUDY OF THE REMOVAL OF WATER REFRACTORY CONTAMINANTS, DEPURATION OF WASTEWATER INCLUDED, WITH ONE ADVANCED OXIDATION PROCESS (AOP) OF RECENT INTEREST: PHOTOCATALYTIC OZONATION. IT IS PROPOSED TO PREPARE NEW CATALYSTS THAT ACTIVATE THE AOP UNDER SUSTAINED ENVIRONMENTAL CONDITIONS AND ALLOW, WITH THE SYNERGIC ACTION OF OZONE, THE IMPROVEMENT OF THE REMOVAL RATE OF CONTAMINANTS OR WASTEWATER DEPURATION. THUS, MAIN OBJECTIVE IS THAT CATALYSTS PREPARED BE ACTIVATED WITH UVA-VISIBLE AND SOLAR RADIATION SOURCES, SO THAT, IN COMBINATION WITH OZONE THE EFFICIENCY IN POLLUTANT REMOVAL BE SIGNIFICANTLY IMPROVED. IN ANY CASE, OBJECTIVES TO BE REACHED IN THIS PROJECT ARE, IN ADDITION: 1. ESTABLISHING APPROPRIATE PROCEDURES FOR THE SYNTHESIS OF CATALYSTS ABLE TO REACH THE MAIN OBJECTIVE OF THE PROJECT, BE STABLES IN WATER, THAT IS, DO NOT LEACH AND, IF POSSIBLE BE SUITABLE FOR THIS AOP. 2. INVESTIGATING THE ADDITION OF IRON OXIDES TO THE CATALYST STRUCTURE TO INTRODUCE MAGNETIC PROPERTIES AND FACILITATE THE SEPARATION FROM WATER. 3. ANALYZING THE INFLUENCE OF VARIABLE AND ESTABLISHING KINETIC MODELS TO PREDICT THE LEVEL OF DEPURATION TO BE REACHED AND OPTIMIZE THE PROCESS. 4. ESTABLISHING THE IMPORTANCE OF AOPS STUDIED THROUGH DIRECT COMPARISON OF RESULTS AND, ALSO, WITH RESULTS WITH ALREADY KNOWN AOPS SUCH AS	BELTRAN NOVILLO	FERNANDO JUAN		UNIVERSIDAD DE EXTREMADURA	DPTO. INGENIERIA QUIMICA Y QUIMICA FISICA	FACULTAD DE CIENCIAS	01-01-13	31-12-15	MINECO	Spain
CTQ2012-35789-C02-02		SYNTHESIS OF CATALYSTS FOR THE TREATMENT OF RECALCITRANT INDUSTRIAL WASTEWATER BY IN-SITU GENERATION OF H2O2 IN FENTON AND PHOTO-FENTON PROCESSES	CERAMIC MEMBRNAES\ION EXCHANGE\ELECTROCHEMICAL REACTORS\ELECTRODIALYSIS	ADVANCED OXIDATION PROCESSES (AOPS) ARE THE ONLY TECHNOLOGY THAT AT AMBIENT TEMPERATURE AND PRESSURE IS CAPABLE OF REMOVING CONTAMINANTS THAT REMAIN STABLE IN THE CONVENTIONAL STAGES OF WATER TREATMENT AND, THEREFORE, ARE CALLED REFRACTORY (PRIORITY AND/OR EMERGENT). THE MAIN PROBLEM OF THE AOPS LAYS ON ITS HIGH REACTIVITY AND THUS LOW SELECTIVITY, HENCE THE NEED FOR AOPS THAT GENERATE A HIGH CONCENTRATION OF HYDROXYL RADICALS, OXIDIZING AGENT IN THESE PROCESSES. ANOTHER IMPORTANT ISSUE IS RELATED TO REDUCED REACTION TIMES AND ENVIRONMENTAL SUSTAINABILITY. FROM THESE REASONS COMES ALL THE ONGOING RESEARCH TO FIND ALTERNATIVES TO THE AOPS CURRENTLY KNOWN. IN THIS SUBPROJECT IT IS DESIRED TO STUDY THE REMOVAL OF REFRACTORY POLLUTANTS, INCLUDING INDUSTRIAL WASTEWATERS, BY APPLYING AN AOP THAT HAS BEEN RECENTLY DEVELOPED BY OUR RESEARCH GROUP: THE CATALYTIC OXIDATION WITH HYDROGEN PEROXIDE GENERATED IN SITU. THE MAIN OBJECTIVE OF THIS PROJECT IS TO IMPROVE THE FENTON PROCESS WITH IN-SITU GENERATION OF H2O2 FROM THREE PERSPECTIVES: FIRSTLY, IMPROVING THE PROCESS BY OBTAINING MULTIFUNCTIONAL CATALYSTS MORE ACTIVE, EFFICIENT AND STABLE IN THIS REACTION, THAT ALLOW BOTH IN-SITU GENERATION OF H2O2 AND ITS ACTIVATION TO DECOMPOSE IT INTO HYDROXYL RADICALS; ON THE OTHER HAND, TO DECREASE THE AMOUNT OF NOBLE METAL AND THEREFORE THE COSTS ASSOCIATED WITH THE PREPARATION OF THE CATALYST; AND FINALLY, TO STUDY THE EFFECT OF THE ADDITION OF UV-VISIBLE RADIATION TO THE REACTION SYSTEM. FOR THIS, NEW CATALYSTS BASED ON METAL NANOPARTICLES SUPPORTED ON DIFFERENT	MEDINA CABELLO	FRANCISCO		UNIVERSIDAD ROVIRA I VIRGILI	DPTO. INGENIERIA QUIMICA	ESCUELA TECNICA SUPERIOR DE INGENIERIA QUIMICA	01-01-13	31-12-15	MINECO	Spain

CTQ2012-38754-C03-02		NEW STRATEGIES BASED ON SOLAR PHOTOCHEMICAL PROCESSES AND INTEGRATION OF OTHER ADVANCED TECHNIQUES FOR THE TREATMENT OF COMPLEX EFFLUENTS.	EXCITED STATES\HYDROXYL RADICAL\SINGLET OXYGEN\ORGANIC PHOTOCATALYST\FLUORESCENCE\LASER FLASH PHOTOLYSIS	THE REUSE OF INCREASING AMOUNTS OF WASTEWATER IS A MAJOR CHALLENGE FOR SPAIN. THIS INVOLVES THE DEVELOPMENT OF NEW TECHNOLOGIES ABLE TO TREAT THOSE POLLUTANTS WHICH ARE RELUCTANT TO CONVENTIONAL TREATMENTS, IN MOST CASES BECAUSE THOSE EFFLUENTS EXHIBIT HIGH TOXICITIES. THIS PROJECT IS A STEP BEYOND IN THE COMBINATION OF PROCESS AND IN THE ASSESSMENT OF ENVIRONMENTAL RISKS, IN ORDER TO PERMIT AN EFFICIENT DEPURATION AND SAFE DETOXIFICATION OF COMPLEX EFFLUENTS. FOR THESE PURPOSE TWO DIFFERENT EFFLUENTS WHICH CANNOT BE TREATED BY CONVENTIONAL MEANS HAVE BEEN CHOSEN TO TEST DIFFERENT COMBINATION OF PROCESSES IN VIEW OF DEVELOPING A METHODOLOGY WHICH CAN BE APPLIED TO OTHER WASTES. THESE STUDIES WILL INVOLVE THREE DIFFERENT LEVELS: 1) MECHANISTIC STUDIES AT MOLECULAR SCALE IN ORDER TO GAIN FURTHER INSIGHT INTO THE UNDERSTANDING OF THE PROCESS WHICH COULD HELP IN ITS OPTIMIZATION, 2) A LABORATORY SCALE STUDY TO OPTIMIZE THE PROCESS, TO OBTAIN USEFUL INFORMATION FOR MECHANISTIC STUDIES, TO ASSESS BIOCOMPATIBILITY USING BIOASSAYS INVOLVING DIFFERENT ORGANISMS AND EVEN TO STUDY A POSSIBLE VALORIZATION OF SOME WASTES, AND 3) SCALE UP AT PILOT PLANT USING A COMBINATION OF TREATMENTS ON REAL EFFLUENTS TO EVALUATE THE THEIR EFFICIENCY IN ORDER TO CHOOSE THE OPTIMAL COMBINATION. THESE THREE LEVELS CAN BE ASSOCIATED TO THE COORDINATED THEE SUBPROJECTS, AND THIS PARTICULAR ONE CORRESPONDS TO THE SECOND LEVEL.	AMAT PAYA	ANA Mª		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	ESCUELA POLITECNICA SUPERIOR. ALCOY	ESCUELA POLITECNICA SUPERIOR. ALCOY	01-01-13	31-12-15	MINECO	Spain
CTQ2012-38754-C03-01		INTEGRATION OF SOLAR PHOTOCHEMICAL PROCESSES AND OTHER ADVANCED TECHNIQUES FOR THE TREATMENT OF LANDFILL LEACHATES AND CORK BOILING WASTEWATERS	WASTEWATER TREATMENT\SOLAR PHOTOCATALYSIS\OZONATION\LEACHATE\FOTO-FENTON\BIOCOMPATIBILITY\DETOXIFICATION\ENVIRONMENTAL RISKS	WASTE WATER TREATMENT PLANTS INSTALLED IN EU ARE BASED IN EFFICIENT ACTIVATED SLUDGE OR OTHER ADVANCED BIOTREATMENTS. BUT THESE PROCESSES ARE NOT USUALLY EFFECTIVE AGAINST COMPLEX INDUSTRIAL WASTEWATER CONTAINING TOXIC AND/OR BIORECALCITRANT SUBSTANCES. THEREFORE, IT IS RECOMMENDED TO DEVELOP MORE EFFICIENT WASTEWATER TREATMENT PROCESSES BY DESIGNING STRATEGIC APPROACHES FOR REDUCING COSTS AND INCREASING EFFICIENCY. THIS GOAL COULD BE ACHIEVED BY A PROPER COMBINATION OF DIFFERENT ADVANCED PROCESSES: MEMBRANES, ADVANCED OXIDATION AND BIOTREATMENT. REAL WASTEWATERS FROM LANDFILL LEACHATE AND CORK PROCESSING WILL BE THE GOAL OF THE PROJECT. THE MAIN OBJECTIVES WILL BE: 1.STUDY OF THE VIABILITY OF NANOFILTRATION MEMBRANE PRE-TREATMENT; TREATMENT OF THE REJECTION STREAM BY A COMBINATION OF ADVANCED OXIDATION PROCESS (AOPS) AND BIOTREATMENT. 2.COMPARISON OF DIFFERENT AOPS (PHOTO-FENTON, O3/OH-, O3/H2O2) FOR THE TREATMENT OF THE REAL WASTEWATERS. 3.BIODEGRADABILITY AND TOXICITY ASSESSMENT DURING APPLIED TREATMENTS. BIODEGRADABLE AND BIORECALCITRANT FRACTIONS OF THE WASTEWATER WILL BE ASSESSED. SELECTION OF THE BEST COMBINATION BETWEEN AOP/BIO AND BIO/AOP. 4.INTEGRATION OF SUPPORTED OR SUSPENDED BIOMASS FOR NUTRIENTS ELIMINATION IN PARTIALLY BIODEGRADABLE WASTEWATERS BY ACTIVATED SLUDGE	MALATO RODRIGUEZ	SIXTO		CENTRO DE INVESTIGACION ENERGETICA MEDIOAMBIENTAL Y TECNOLOGICA (CIEMAT)	PLATAFORMA SOLAR DE ALMERIA	PLATAFORMA SOLAR DE ALMERIA	01-01-13	31-12-15	MINECO	Spain
CTQ2012-37450-C02-01		ELECTROCHEMICAL CHARACTERIZATION OF ION-EXCHANGE NANOSTRUCTURED CERAMIC MEMBRANES FOR APPLICATION IN ELECTROCHEMICAL REACTORS AND ELECTRODIALYTIC SYSTEMS.	WASTEWATERS\ADVANCED OXIDATION\SOLAR PHOTO FENTON\COMBINED TREATMENTS	THE PROJECT CONSISTS IN DETERMINING THE TRANSPORT PROPERTIES OF ION EXCHANGE NANOSTRUCTURED CERAMIC MEMBRANES BY ELECTROCHEMICAL TECHNIQUES FOR APPLICATION IN WASTEWATER TREATMENT BY ELECTROCHEMICAL REACTORS OR ELECTRODIALYSIS SYSTEMS. MANY INDUSTRIAL PROCESSES GENERATE WASTE STREAMS WITH A HIGH CONTENT OF HEAVY METALS, OXIDANTS, WITH RADIOACTIVITY, OR EXTREME PH VALUES. THESE EFFLUENTS ARE DIFFICULT TO TREAT BY CONVENTIONAL ION EXCHANGE MEMBRANES DUE TO THEIR LOW MECHANICAL, CHEMICAL AND THERMAL RESISTANCES. THEREFORE, THE DEVELOPMENT OF CERAMIC ION EXCHANGE MEMBRANES WITH HIGH MECHANICAL, CHEMICAL AND THERMAL RESISTANCES WILL EXPAND THE SCOPE OF ELECTROCHEMICAL PROCESSES FOR THE TREATMENT OF THIS TYPE OF EFFLUENTS. THE PROJECT AIMS TO UNDERSTAND THE RELATIONSHIPS BETWEEN THE MICROSTRUCTURE AND COMPOSITION OF THE ION-EXCHANGE CERAMIC MEMBRANES AND THEIR ELECTROCHEMICAL BEHAVIOUR, SO THAT IT IS POSSIBLE TO DESIGN AND SYNTHESIZE LOW COST CERAMIC MEMBRANES ADAPTED TO THE SPECIFIC REQUIREMENTS OF ELECTROCHEMICAL PROCESSES. SINCE THE MEMBRANES WILL BE APPLIED TO ELECTROCHEMICAL PROCESSES DIRECTLY RELATED TO THE TRANSPORT OF IONS, IT WILL BE NECESSARY TO DETERMINE ELECTROCHEMICAL PARAMETERS AS THE ELECTRICAL	PEREZ HERRANZ	VALENTIN		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	INSTITUTO DE SEGURIDAD INDUSTRIAL, RADIOFISICA Y MEDIOAMBIENTAL	01-01-13	31-12-15	MINECO	Spain

CTQ2012-34088		WATER OXIDATION CATALYSIS: NOVEL HOMOGENEOUS, HETEROGENEOUS AND BIO-INSPIRED CATALYSTS FROM COORDINATION CHEMISTRY	DRUGS OF ABUSE\WASTEWATER\SURFACE WATER\ENVIRONMENT\EPIDEMIOLOGY\METABOLITES\LC MSMS\LC QTOFMS	CATALYTIC WATER OXIDATION IS ONE OF THE MOST IMPORTANT CHALLENGES INORGANIC CHEMISTRY IS FACING TODAY. THE DEVELOPMENT OF STABLE, FAST AND INEXPENSIVE WATER OXIDATION CATALYSTS (WOCS) OBTAINED FROM EARTH ABUNDANT METALS IS ONE OF THE KEY STEPS FOR THE IMPLEMENTATION OF LARGE SCALE ARTIFICIAL PHOTOSYNTHESIS: A PROCESS THAT WOULD CONVERT SUNLIGHT ENERGY INTO ENERGY-RICH FUELS, AS A DEFINITIVE RENEWABLE ENERGY SOURCE. OUR OBJECTIVE IS TO DEVELOP AND CHARACTERIZE PROMISING NEW WOC CANDIDATES FROM COORDINATION CHEMISTRY: 1) POLYOXOMETALATES AS HOMOGENEOUS CATALYSTS: THESE DISCREET METAL OXIDE FRAGMENTS DEFINE THE CURRENT STATE-OF-THE-ART IN TERMS OF PERFORMANCE, STABILITY AND COSTS. WE WILL TAKE ADVANTAGE OF THE RICH POLYOXOMETALATE CHEMISTRY TO OPTIMIZE AND TUNE THE EFFICIENCY IN NEW SOLUBLE POLYANIONS. 2) CYANIDES AS HETEROGENEOUS CATALYSTS: WITH RESPECT TO OTHER SOLID STATE MATERIALS CURRENTLY BEING USED AS WOCS, SUCH AS OXIDES OR PHOSPHATES, CYANIDES PRESENT SOME ADVANTAGES INCLUDING POROSITY (LARGER ACTIVE SURFACE AREA) AND CHEMICAL VERSATILITY TO TUNE THE REDOX PROPERTIES. WE WILL PREPARE AND CHARACTERIZE HETEROMETALLIC CYANIDE THIN-FILMS IN THE SEARCH FOR WOC ACTIVITY. 3) OLIGOPEPTIDE COORDINATION CHEMISTRY: THE	GALAN MASCAROS	JOSE RAMON		FUNDACIO INSTITUT CATALA D INVESTIGACIO QUIMICA (ICIQ)	AGR-FUNDACIO PRIVADA INSTITUT CATALA D INVESTIGACIO QUIMICA (ICIQ)	AGR-FUNDACIO PRIVADA INSTITUT CATALA D INVESTIGACIO QUIMICA (ICIQ)	01-01-13	31-12-15	MINECO	Spain
CTQ2012-38754-C03-03		NEW STRATEGIES BASED ON SOLAR PHOTOCHEMICAL PROCESSES AND INTEGRATION OF OTHER ADVANCED TECHNIQUES FOR THE TREATMENT OF COMPLEX EFFLUENTS	WATER\ENERGY\CLIMATE CHANGE\INTERNAL MARKET\RENEWABLES ENERGYS\SOLAR THERMAL ENERGY\EUROPEAN NETWORK ENERGY\COSTUMER	THE REUSE OF INCREASING AMOUNTS OF WASTEWATER IS A MAJOR CHALLENGE FOR SPAIN. THIS INVOLVES THE DEVELOPMENT OF NEW TECHNOLOGIES ABLE TO TREAT THOSE POLLUTANTS WHICH ARE RELUCTANT TO CONVENTIONAL TREATMENTS, IN MOST CASES BECAUSE THOSE EFFLUENTS EXHIBIT HIGH TOXICITIES. THIS PROJECT IS A STEP FORWARD IN THE COMBINATION OF PROCESSES AND IN THE ASSESSMENT OF ENVIRONMENTAL RISKS, IN ORDER TO PERMIT AN EFFICIENT DEPURATION AND SAFE DETOXIFICATION OF COMPLEX EFFLUENTS. FOR THIS PURPOSE TWO DIFFERENT EFFLUENTS, WHICH CANNOT BE TREATED BY CONVENTIONAL MEANS, HAVE BEEN CHOSEN TO TEST DIFFERENT COMBINATION OF PROCESSES IN VIEW OF DEVELOPING A METHODOLOGY APPLICABLE TO OTHER WASTES. THESE STUDIES WILL INVOLVE THREE DIFFERENT LEVELS: 1) MECHANISTIC STUDIES AT MOLECULAR LEVEL IN ORDER TO GAIN FURTHER INSIGHT INTO THE UNDERSTANDING OF HOW THE PHOTODEGRADATION OF POLLUTANTS OCCURS AT THE CONSIDERED PROCESSES AND THEREFORE IMPROVE THEIR EFFICIENCY ON THE BASIS OF MECHANISTIC KNOWLEDGE 2) A LABORATORY SCALE STUDY TO OPTIMIZE THE PROCESS, TO OBTAIN USEFUL INFORMATION FOR MECHANISTIC STUDIES, TO ASSESS BIOCOMPATIBILITY USING BIOASSAYS INVOLVING DIFFERENT ORGANISMS AND EVEN TO STUDY A POSSIBLE VALORIZATION OF SOME WASTES, AND 3) SCALE UP AT PILOT PLANT USING A COMBINATION OF TREATMENTS ON REAL EFFLUENTS TO EVALUATE THEIR EFFICIENCY IN ORDER TO CHOOSE THE OPTIMAL COMBINATION. THESE THREE LEVELS CORRESPOND WITH THE THREE COORDINATED SUBPROJECTS, AND THIS PARTICULAR ONE CORRESPONDS TO THE FIRST LEVEL. HENCE, A CLOSE INTERACTION WITH THE OTHER TWO	MARIN GARCIA	MARIA LUISA		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	INSTITUTO DE TECNOLOGIA QUIMICA (ITQ)	INSTITUTO DE TECNOLOGIA QUIMICA (ITQ)	01-01-13	31-12-15	MINECO	Spain
DPI2009-11591		INTELLIGENT DATA ANALYSIS IN WATER SYSTEMS (DISTRIBUTION AND DRAINAGE)	WATER DISTRIBUTION NETWORKS\HYDRAULIC TRANSIENTS\ENTRAPPED AIR\OPERATION\CONTROL	WATER DISTRIBUTION AND DRAINAGE SYSTEMS PROVIDE THE CITIZEN WITH ONE OF MOST PRECIOUS PUBLIC SERVICES. ON THE ONE HAND, THEY SUPPLY DRINKING WATER, WHICH IS AN ESSENTIAL REQUIREMENT FOR NORMAL DEVELOPMENT OF THE MOST BASIC ACTIVITIES OF LIFE, SUCH AS FEEDING AND HYGIENE. ON THE OTHER HAND, THEY ISOLATE AND CHANNEL SEWAGE TOWARDS TREATMENT PLANTS, THUS AVOIDING TRANSMISSION OF DISEASES AND RETURNING USED WATER TO THE ENVIRONMENT UNDER BETTER CONDITIONS. THE GEOGRAPHICAL DISPERSION OF THESE SYSTEMS AND THE FACT THAT THEY ARE BURIED ASSETS ARE THE CAUSE FOR THE LACK OF INFORMATION ABOUT THEIR STATE AND OPERATION. CONSEQUENTLY, THE MONITORING OF CERTAIN VARIABLES ASSOCIATED WITH THESE SYSTEMS IS OF PARAMOUNT IMPORTANCE, SINCE THEY CHARACTERIZE THEIR STATE AND OPERATION. WATER SYSTEMS SUFFER A NUMBER OF OPERATIONAL AND ENVIRONMENTAL CONDITIONS WHICH ARE ACCOMPANIED BY PROGRESSIVE AND INSIDIOUS DETERIORATION. AS A CONSEQUENCE, THE SYSTEM IS SUBSTANTIALLY IMPAIRED; SOME OF THE REASONS ARE: -INCREASING LOSS OF PRESSURE, TRIGGERED BY THE SIMULTANEOUSLY INCREASING INNER ROUGHNESS OF THE PIPES. -BREAKAGE OR CRACKING OF PIPES, PROVOKED BY CORROSION AND MECHANICAL AND THERMAL CHARGES. -LOSSES OF WATER (LEAKS), DUE TO PIPES BREAKS AND CRACKS, WITH THEIR CORRESPONDING ECONOMIC LOSS, THIRD PARTY DAMAGE AND RISK OF CONTAMINATION. TO FACE THESE PROBLEMS: GEOGRAPHICAL INFORMATION SYSTEMS, TELEMETRY AND TELECONTROL SYSTEMS AND NON-DESTRUCTIVE INSPECTION METHODS, ARE OF PRIMARY	PEREZ GARCIA	RAFAEL		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	CENTRO MULTIDISCIPLINAR DE MODELACION DE FLUIDOS	CENTRO MULTIDISCIPLINAR DE MODELACION DE FLUIDOS	01-01-10	30-06-13	MINECO	Spain

DPI2009-13744		ANALYSIS AND DESIGN OF DISTRIBUTED OPTIMAL CONTROL STRATEGIES APPLIED ON LARGE-SCALE WATER SYSTEMS MANAGEMENT	PLANT WIDE CONTROL\ADVANCED CONTROL\PREDICTIVE CONTROL\SELF-OPTIMIZING CONTROL\FAULT TOLERANT CONTROL\GLOBAL OPTIMIZATION\FAULT DETECTION\SUPERVISION\WWTPS\ACTIVATED SLUDGE PROCESSES	THE USE OF TELEMETRY AND TELECONTROL IN SYSTEMS OF THE WATER CYCLE IS INCREASING CONSTANTLY, DUE TO THE GROWING AVAILABILITY OF REASONABLY-PRICED SENSORS, TELECOMMUNICATION SYSTEMS AND COMPUTERS IN A SITUATION OF INCREASING AWARENESS OF WATER CYCLE MANAGEMENT NEEDS: TO TAKE MAXIMUM ADVANTAGE OF SCARCE WATER RESOURCES, TO PROVIDE ACCESS TO WATER TO MORE REGIONS, TO CONTROL DRINKING WATER QUALITY, TO COPE WITH EXTREME EVENTS SUCH AS DRAUGHTS AND FLOODING, TO REDUCE THE IMPACT OF USED WATER ON THE RECEIVING ENVIRONMENT, AND SO ON. THE INCREASING AVAILABILITY OF CONTROL HARDWARE AND INFORMATION SYSTEMS CANNOT, ON ITS OWN, CONTRIBUTE TO COPING WITH THESE CHALLENGES. THE KEY ISSUE IS THE USE OF THE INFORMATION. APPROPRIATE DATA VALIDATION, WATER SYSTEM MODELLING AND CONTROL STRATEGIES MUST BE DEVELOPED AT A SIMILAR PACE. OPTIMAL PREDICTIVE CONTROL HAS BEEN SHOWN TO PROVIDE IMPORTANT CONTRIBUTIONS TO EFFICIENT MANAGEMENT IN WATER SYSTEMS. IN GENERAL, OPTIMAL CONTROL PROBLEMS IN WATER NETWORKS ARE LARGE SCALE DUE LARGE SPATIALLY DISTRIBUTED NETWORKS, TIME SPANS OF PREDICTIVE CONTROL HORIZONS AND MODELLING NEEDS FOR NONLINEAR BEHAVIOURS AND PURE DELAYS, E.G., IN RIVER-FLOW EQUATIONS. IN ADDITION, THERE IS AN INCREASING NEED FOR FAIL-SAFE SYSTEMS, WHICH MUST PROVIDE UNINTERRUPTED SERVICE TO CONSUMERS AT ALL COST. IN THIS CONTEXT, DE-CENTRALIZED CONTROL IS EXPECTED TO PROVIDE A KEY CONTRIBUTION TO APPLYING OPTIMAL CONTROL SCHEMES TO WATER SYSTEMS: (I) UNDER DEVELOPING/EXPANDING CONTROL IMPLEMENTATION, (II)	CEMBRANO GENNARI	MARIA GABRIELA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO DE ROBOTICA E INFORMATICA INDUSTRIAL (IRI)	INSTITUTO DE ROBOTICA E INFORMATICA INDUSTRIAL (IRI)	01-01-10	30-06-13	MINECO	Spain
DPI2009-13674		IMPROVING THE STARTING AND OPERATION TECHNIQUES IN WATER DISTRIBUTION NETWORKS	OPTIMAL CONTROL\DISTRIBUTED/DECENTRALIZED CONTROL\LARGE-SCALE SYSTEMS\MODELLING/IDENTIFICATION\MPC\WATER CYCLE\WATER SYSTEMS MANAGEMENT\DATA MINING	THE PRESENT PROJECT MUST CONSIDER BEING A NATURAL CONTINUATION OF THE PROJECTS MAGIAS (DEVELOPMENT OF A TOOL FOR MODELING WATER SUPPLY USING BOTH GEOGRAPHICAL INFORMATION SYSTEMS AND GENETIC ALGORITHMS) AND CADAGIAS (INTEGRATION OF THE DYNAMIC BEHAVIOUR OF ELEMENTS AND CONSUMPTIONS IN WATER SUPPLY NETWORKS MODELS USING GEOGRAPHICAL INFORMATION SYSTEMS AND GENETIC ALGORITHMS). THE ABOVE MENTIONED PROJECTS HAVE DEVELOPED DURING THE LAST YEARS INSIDE THE NATIONAL PLAN OF DESIGN AND INDUSTRIAL PRODUCTION. CURRENTLY THERE IS AN INITIAL TOOL FOR MODELING DYNAMIC WATER NETWORKS. THIS MODEL HAS BEEN CALLED SARA. NOW SARA IS ON THE FINAL TESTING PART AND SEVERAL USERS AND ENTERPRISES ARE TESTING IT. HOWEVER, DURING THE DEVELOPMENT OF PREVIOUS PROJECTS HAVE BEEN IDENTIFIED SOME SHORTCOMINGS OF MODELING, AND SEVERAL CAPACITIES RESULTING FROM THE USE OF THE MODEL HAVE SHOWN TO BE INTERESTING. IMPROVEMENTS TO MAKE IN THE MODEL HAVE ORIGINATED THE REQUEST OF A NEW PROJECT. THIS NEW PROJECT WILL FOCUS ON SEVERAL AREAS: ¿INCREASING THE MODEL CAPABILITIES, INCLUDING A TRANSIENT REPRESENTATION OF THE BEHAVIOR OF AIR POCKETS. THIS ENTRAPPED AIR IS CHARACTERISTIC OF THE PROCESS OF FILLING AND EMPTYING THE PIPES. ¿DEVELOPS A NEW METHODOLOGY TO DETERMINE THE STATIC AND DYNAMIC CHARACTERISTICS O FAIR VALVES USING A HYRODYNAMIC SIMILARITY. ¿NTEGRATING INTO SARA MODEL THE RESEARCHES	IGLESIAS REY	PEDRO L.		UNIVERSITAT POLITÈCNICA DE VALÈNCIA	CENTRO MULTIDISCIPLINAR DE MODELACION DE FLUIDOS	CENTRO MULTIDISCIPLINAR DE MODELACION DE FLUIDOS	01-01-10	31-12-13	MINECO	Spain

DPI2010-15230		SUSTAINABLE CONTROL AND OPERATION OF WWTP FOR SIMULTANEOUS ELIMINATION OF DQO, N AND P: APPLICATION OF MULTIOBJECTIVE OPTIMIZATION TECHNIQUES AND ROBUST AUTOTUNING CONTROL.		THE PRESENT SPANISH LEGISLATION ESTABLISHES THAT THE MUNICIPAL WASTEWATER TREATMENT PLANTS (WWTP) MUST REMOVE ORGANIC MATTER (COD - CHEMICAL OXYGEN DEMAND) AND NUTRIENTS, ESPECIALLY NITROGEN (N) AND PHOSPHORUS (P). THE DEVELOPED MATHEMATICAL MODELS AT THE MOMENT ALLOW A CORRECT DESCRIPTION OF THE PROCESSES OBSERVED IN THE WWTP. SPECIFICALLY, THE IWA ASM2D IS ABLE TO MODEL THE BEHAVIOR OF WWTP WITH BIOLOGICAL REMOVAL OF COD, N AND P. THE PROJECT AIMS CAN BE SUMMARIZED ALONG THE FOLLOWING LINES: ¿DESIGN OF NEW CONTROL STRATEGIES AND OPERATION IN URBAN WASTEWATER TREATMENT PLANTS FOR SIMULTANEOUS REMOVAL OF ORGANIC MATTER (COD), NITROGEN (N) AND PHOSPHORUS (P). ¿THE DESIGN WILL BE BASED ON MODELING TOOLS TO OPTIMIZE THE OPERATION STRATEGIES THROUGH A BENCHMARKING ENVIRONMENT INCLUDING EFFLUENT QUALITY CRITERIA, CRITERIA OF MINIMIZING ECONOMIC COSTS AND ENVIRONMENTAL IMPACT CRITERIA. ¿THE CONSIDERATION OF THE DIFFERENT CRITERIA WILL BE ADDRESSED THROUGH THE IMPLEMENTATION OF MULTIOBJECTIVE OPTIMIZATION STRATEGIES (MOO) USING THE LIFE CYCLE ANALYSIS (LCA) METHODOLOGY FOR ENVIRONMENTAL IMPACT ASSESSMENT. ¿CONTROL AT LOOP LEVEL THROUGH APPROACHES THAT FACILITATE THEIR INTEGRATION IN THE OPTIMIZATION OF OPERATING STRATEGIES, SUCH AS PARAMETERIZATION OF	VILANOVA ARBOS	RAMON		UNIVERSIDAD AUTONOMA DE BARCELONA	OPTO. DE TELECOMUNICACIONES E INGENIERÍA DE SISTEMAS	ESCUELA TECNICA SUPERIOR DE INGENIERIA - ETSE	01-01-11	31-12-13	MINECO	Spain
DPI2012-39381-C02-01		METHODOLOGY FOR DESIGNING HIERARCHICAL AND DISTRIBUTED MPC CONTROL STRATEGIES FOR INTEGRATED AND NETWORKED SYSTEMS	PLANT WIDE CONTROL\HIERARCHICAL MPC CONTROL\DISTRIBUTED MPC CONTROL\DISTRIBUTED FAULT DIAGNOSIS\CONTROL RECONFIGURATION\INTEGRATED URBAN WATER SUPPLY SYSTEM\DISTRIBUTED NETWOKS	THIS WORK FOCUSES ON THE LARGE SCALE SYSTEMS CONTROL WITHIN THE PLANT WIDE CONTROL FRAMEWORK IN ORDER TO OBTAIN SOLUTIONS ACCORDING TO THEIR GLOBAL REQUIREMENTS. SINCE THE USE OF MPC STRATEGIES WITH DISTRIBUTED AND HIERACHICAL ARCHITECTURES HAS SHOWN TO BE SUCCESFUL TO TACKLE THOSE PROBLEMS AND THEY ARE WIDESPREAD IN INDUSTRY, SOLUTIONS BASED ON THOSE TECHNIQUES ARE THE MAIN INTEREST OF THE PROJECT. THE MAIN GOAL OT THE PROJECT IS THE DEVELOPMENT OF PLANT WIDE CONTROL STRATEGIES FOR INTEGRATED AND NETWORKED SYSTEMS BASED ON HIERACHICAL AND DISTRIBUTED MPC STRUCTURES. MOREOVER WE WANT TO PROVIDE A FRAMEWORK TO SELECT THEM PROPERLY. SOME PROPERTIES SUCH US ECONOMIC OPTIMALLITY, PRODUCT AND ENVIRONMENTAL QUALITY, FAULT TOLERANCE CONTROL WILL BE GUARANTEED. THE VALIDATION OF THE PROPOSALS WILL BE CARRIED OUT ON DIFFERENT TYPES OF COMPLEX SYSTEMS: INTEGRATED URBAN WATER SYSTEMS (SEWER, WWTP AND RIVER BASIN) AND WATER DISTRIBUTION NETWORKS. ADDITIONALLY, REAL PROBLEMS WILL BE TACKLED BY USING CALIBRATED SIMULATORS IN ORDER TO PROVIDE EFFICIENT SOLUTIONS TO WATER INDUSTRIES.	VEGA CRUZ	PASTORA ISABEL		UNIVERSIDAD DE SALAMANCA	ESCUELA TECNICA SUPERIOR DE INGENIEROS INDUSTRIALES	ESCUELA TECNICA SUPERIOR DE INGENIEROS INDUSTRIALES	01-01-13	31-12-15	MINECO	Spain

DPI2012-39381-C02-02		METHODOLOGY FOR DESIGNING HIERARCHICAL AND DISTRIBUTED MPC CONTROL STRATEGIES FOR INTEGRATED AND NETWORKED SYSTEMS	WATER FRAMEWORK DIRECTIVE\WATER TARIFFS\GOVERNANCE\CONTRACTING-OUT\PRIVATIZATION\COMPETITION\IDEOLOGICAL AND POLITICAL FACTORS\ENVIRONMENTAL COSTS	THIS WORK FOCUSES ON THE LARGE SCALE SYSTEMS CONTROL WITHIN THE PLANT WIDE CONTROL FRAMEWORK IN ORDER TO OBTAIN SOLUTIONS ACCORDING TO THEIR GLOBAL REQUIREMENTS. SINCE THE USE OF MPC STRATEGIES WITH DISTRIBUTED AND HIERACHICAL ARCHITECTURES HAS SHOWN TO BE SUCCESFUL TO TACKLE THOSE PROBLEMS AND THEY ARE WIDESPREAD IN INDUSTRY, SOLUTIONS BASED ON THOSE TECHNIQUES ARE THE MAIN INTEREST OF THE PROJECT. THE MAIN GOAL OT THE PROJECT IS THE DEVELOPMENT OF PLANT WIDE CONTROL STRATEGIES FOR INTEGRATED AND NETWORKED SYSTEMS BASED ON HIERACHICAL AND DISTRIBUTED MPC STRUCTURES. MOREOVER WE WANT TO PROVIDE A FRAMEWORK TO SELECT THEM PROPERLY. SOME PROPERTIES SUCH US ECONOMIC OPTIMALLITY, PRODUCT AND ENVIRONMENTAL QUALITY, FAULT TOLERANCE CONTROL WILL BE GUARANTEED. THE VALIDATION OF THE PROPOSALS WILL BE CARRIED OUT ON DIFFERENT TYPES OF COMPLEX SYSTEMS: INTEGRATED URBAN WATER SYSTEMS (SEWER, WWTP AND RIVER BASIN) AND WATER DISTRIBUTION NETWORKS. ADDITIONALLY, REAL PROBLEMS WILL BE TACKLED BY USING CALIBRATED SIMULATORS IN ORDER TO PROVIDE EFFICIENT SOLUTIONS TO WATER INDUSTRIES	DE LA FUENTE APARICIO	MARIA JESUS		UNIVERSIDAD DE VALLADOLID	ESCUELA DE INGENIERIAS INDUSTRIALES	ESCUELA DE INGENIERIAS INDUSTRIALES	01-01-13	31-12-15	MINECO	Spain
ECO2009-12496-C03-01		ANALYSIS OF PUBLIC POLICIES FOR WATER MANAGEMENT IN AGRICULTURE: UNCERTAINTY, CLIMATIC CHANGE AND WFD	SOLAR ENERGY\SOLAR COLLECTOR\ADSORPTION COOLING\DOMESTIC HOT WATER\HEATING\AIR CONDITIONING	THIS PROJECT IS AIMED TO THE OBJECTIVE OF ANALYZING PUBLIC POLICIES FOR WATER MANAGEMENT IN AGRICULTURE IN THE FRAMEWORK OF WFD AND WITH THE INTEGRATION OF UNCERTAINTY, INCLUDING CLIMATIC CHANGE. THE PROJECT TRIES TO COVER THE KNOWLEDGE DEFICIT IN ECONOMIC METHODOLOGY THAT IS REQUIRED TO IMPLEMENT PUBLIC POLICIES FOR WATER MANAGEMENT. THIS PROJECT IDENTIFIES THE FOLLOWING KNOWLEDGE GAPS: A) ABSENCE OF A CONSISTENT METHODOLOGY FOR COST-EFFICIENCY ANALYSIS FOR SELECTING MEASURES, INCLUDING TRADE-OFF ANALYSIS, B) INSUFFICIENCY OF A METHOD FOR DEFINING DISPROPORTIONATE COST, AND C) SCARCE INTEGRATION OF UNCERTAINTY (INCLUDING CLIMATE CHANGE IMPACTS) IN MODELS FOR WATER MANAGEMENT IN AGRICULTURE. THESE OBJECTIVES IMPLY THAT PROJECT SHOULD BEGIN BY MAKING A CRITICAL ANALYSIS OF THE EXISTING COST-EFFICIENCY ANALYSIS IN PROGRAM OF MEASURES, SPECIALLY IN THE MECHANISM FOR FULL COST RECOVERY (INCLUDING ENVIRONMENTAL AND RESOURCES COST). A RESULT OF THE PROJECT WILL BE AN OPERATIONAL DEFINITION OF DISPROPORTIONATE COST ACCORDING COST BENEFIT ANALYSIS. THE GLOBAL PARADIGM FOR THIS RESEARCH WILL BE MULTICRITERIA ANALYSIS INCLUDING THE ANALYSIS OF ADAPTATION COST TO CLIMATIC CHANGE (SPECIALLY INCREASE IN DROUGHT OCCURRENCE). ADDITIONALLY UNCERTAINTY ON COST AND EFFICIENCY OF MEASURES WILL BE EXPLICITLY INTEGRATED IN MODELS. THE PROJECT WILL USE PREVIOUS RESULTS OF PROPONENTS	BERBEL VECINO	JULIO		UNIVERSIDAD DE CORDOBA	DPTO. ECONOMIA, SOCIOLOGIA Y POLITICA AGRARIAS	ESCUELA TECNICA SUPERIOR DE INGENIEROS AGRONOMOS Y DE MONTES	01-01-10	31-12-13	MINECO	Spain
ECO2012-32189		THE TARIFFS OF WATER FOR RESIDENTIAL USE IN SPAIN IN THE CONTEXT OF THE WATER FRAMEWORK DIRECTIVE: AN ECONOMIC, ENVIRONMENTAL AND POLITICAL ANALYSIS	BIOGAS\MICROBIAL FUEL CELL\CENTRATE WWTP	THE WATER FRAMEWORK DIRECTIVE (WFD) OF THE EUROPEAN UNION, APPROVED IN 2000, ESTABLISHES THE MAIN ORIENTATIONS THAT THE MEMBER STATES SHOULD ADOPT CONCERNING WATER POLICIES AND THE MANAGEMENT OF WATER RESOURCES, EMPHASISING THE NEED OF A SUSTAINABLE MANAGEMENT AND THE PROTECTION OF THE ENVIRONMENT. TO REACH THIS OBJECTIVE, THE WFD PROPOSES THE USE OF ECONOMIC INSTRUMENTS, EXPLICITLY MENTIONING WATER TARIFFS. IN THE FIELD OF THE URBAN WATER SERVICE IT INTENDS THAT THE TARIFFS PERMIT THE RECOVERY OF THE COSTS ASSOCIATED WITH THE PROVISION OF THE SERVICE AND, BESIDES, THEY PROVIDE INCENTIVES SO THAT THE USERS DO AN EFFICIENT USE OF WATER RESOURCES. THE TARIFF-SETTING PROCESSES FOR URBAN WATER USES ARE, NEVERTHELESS, COMPLEX AND THEY ARE INFLUENCED BY ECONOMIC, POLITICAL AND, EVEN, IDEOLOGICAL FACTORS. THE OBJECTIVE OF THIS PROJECT IS TO ANALYSE THE FORMATION PROCESSES OF WATER PRICES FOR RESIDENTIAL USE IN SPAIN FROM AN ECONOMIC, ENVIRONMENTAL AND POLITICAL PERSPECTIVE. THE PROVISION OF THE URBAN WATER SERVICE CORRESPONDS, ACCORDING TO THE SPANISH LEGISLATION IN FORCE, TO THE CITY HALLS, ALTHOUGH THESE CAN DELEGATE THE RESPONSIBILITY THROUGH DIFFERENT LEGAL FORMS OF PRIVATE AND PUBLIC OWNERSHIP. THIS PROJECT WILL FIRSTLY ANALYSE THE EFFECT OF COMPETITION IN THE	PICAZO TADEO	ANDRES JOSE		UNIVERSIDAD DE VALENCIA	FACULTAD DE ECONOMIA	FACULTAD DE ECONOMIA	01-01-13	31-12-15	MINECO	Spain

ENE2009-14515-C02-01		WATER ENERGY CYCLE: METHODS AND EXPERIENCES	DESALINATION\ELECTRODIALYSIS\PHOTOVOLTAIC\GRANM CANARIA ISLAND	THE NECESSITY OF KNOWING WITH OBJECTIVE DATA, THE ENERGY CONSUMPTION OF THE WATER CYCLE IN SPAIN IS ONE OF THE KEY PRIORITIES IN THE SUSTAINABILITY FRAMEWORK REQUIRED FOR THE 21ST CENTURY. THE SINGLE COMPLETE EXISTING STUDY IN CALIFORNIA, MAKES IT VERY CLEAR THAT ENERGY CONSUMPTION IN THE WATER CYCLE CONSTITUTES A VERY IMPORTANT FRACTION OF THE TOTAL (PARTICULARLY THOSE RELATED TO TRANSPORT AND TRANSFORMATION OF THIS NATURAL RESOURCE). WITH THE HELP OF THE EXERGY ANALYSIS AND THE SECOND LAW OF THERMODYNAMICS, THIS PROJECT HAS THE COMPROMISE TO APPLY AN ALTERNATIVE NATIONAL ENERGY ACCOUNTABILITY TO THE INTEGRAL WATER CYCLE, IN THE SENSE OF INCORPORATING NOVEL THERMODYNAMIC ASPECTS FROM THE POINT OF VIEW OF THE ENERGY EFFICIENCY OF TREATMENT PROCESSES INVOLVED IN THE WATER CYCLE, AND ITS IMPROVEMENT POSSIBILITIES. BUT IT ALSO STUDIES ASPECTS THAT ARE NOT INCLUDED IN THE PREVIOUS MENTIONED WORK, SUCH AS THE ACCOUNTING OF ENVIRONMENTAL IMPACTS OF BUILDING MATERIALS, THE USE OF REACTANTS, RAW MATERIALS AND THE COST OF GENERATED RESIDUES AND DISSEMBLE OF THE INSTALLATIONS. FOR THAT PURPOSE, THE POWERFUL TOOL OF THE LIFE CYCLE ANALYSIS APPLIED TO THE INSTALLATIONS INCLUDED IN THE INTEGRAL WATER CYCLE (USES SYSTEM) WILL BE USED. BUT THE BASIC RESEARCH PROPOSED ABOVE SHOULD LEAN ON REAL EXAMPLES WITH ORIENTED RESEARCH. IN THE INTEGRAL WATER CYCLE, OBTAINING ENERGY FROM RENEWABLE SOURCES IN ANY KIND OF WATER TREATMENT IS ESSENTIAL FOR NOT COMPUTING THE ENERGY CONSUMPTION OF FOSSIL FUEL ORIGIN AND OBTAINING	UCHE MARCUELLO	JAVIER		FUNDACION CIRCE CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS	FUNDACION CIRCE CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS	FUNDACION CIRCE CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS	01-01-10	31-12-12	MINECO	Spain
ENE2012-33027		ENERGY EFFICIENCY IMPROVEMENT IN WWTP THROUGH OPTIMIZATION OF BIOGAS PRODUCTION AND CENTRATE TREATMENS BY MICROBIAL BIO-ELECTROCHEMISTRY SYSTEMS	DESALINATION SYSTEM\REVERSE OSMOSIS\RENEWABLE ENERGY\WIND ENERGY\POWER ELECTRONICS\SUPER-CAPACITORS\WIND TURBINES	ANAEROBIC DIGESTERS IN WASTEWATER TREATMENT PLANTS ARE USUALLY CHARACTERIZED BY ITS LOW BIOGAS PRODUCTION RATES, WHICH MIGHT BE EXPLAINED BY THE LOW KINETICS OF AEROBIC SLUDGE DEGRADATION. TODAY, THE WASTEWATER TREATMENT SECTOR IS BECOMING INCREASINGLY CONCERN ABOUT ENERGY EFFICIENCY IN THE WASTEWATER TREATMENT PLANTS, AND IS ALSO TRYING TO FIND NEW SOLUTIONS FOR CENTRATES MANAGEMENT. BASED ON OUR RESEARCH GROUP'S EXPERIENCE ON BIOELECTROCHEMICAL SYSTEMS (BESS), THE POSSIBILITY OF USING THIS TECHNOLOGY TO REDUCE THE CONTAMINANT LOAD OF CENTRATES ARISES. THEREFORE, THE MAIN GOAL OF THIS PROJECT IS TO EXPLORE MICROWAVE PRETREATMENT OF AEROBIC SLUDGE AS AN ALTERNATIVE TO IMPROVE BIOGAS PRODUCTION RATES DURING ANAEROBIC DIGESTION. WE ALSO AIM AT INVESTIGATING THE USE OF CENTRATES, PRODUCED DURING THE DEWATERING STEP OF THE DIGESTER EFFLUENT, AS A FEEDSTOCK FOR MICROBIAL FUEL CELL (MFC) TREATMENT. THE SPECIFIC OBJECTIVES ARE THE FOLLOWING: (I) TO ASSESS THE EFFECT OF THE OPERATIONAL PARAMETERS OF THE MICROWAVE PRETREATMENT ON BIOGAS PRODUCTION RATES, AND ON THE QUALITY OF THE CENTRATES, (II) TO ASSESS THE PERFORMANCE OF A BENCH-SCALE CENTRATE-FED MFC, (III) TO OPTIMIZE THE RATIO OF COD TO N OF THE	MORAN PALAO	ANTONIO		UNIVERSIDAD DE LEON	INSTITUTO DE RECURSOS NATURALES - INRENA	INSTITUTO DE RECURSOS NATURALES - INRENA	01-01-13	31-12-15	MINECO	Spain
ESP2007-65667-C04-04		CALIBRATION/VALIDATION OF THE MIRAS RADIOMETER MEASUREMENTS IN THE SMOS MISSION AND THE CREATION OF SOIL MOISTURE MAPS (CONTRIBUTION TO MIDAS-5)	INPUT-OUTPUT TABLES\SUSTAINABLE GROWTH\TECHNOLOGICAL CHANGE\DEMAND PATTERNS\POLLUTION	THIS PROJECT IS A CONTRIBUTION TO MIDAS (MICROWAVE MEASUREMENTS AND ALGORITHM DEVELOPMENT FOR SMOS MISSION), OF WHICH FORTH PHASE WAS APPROVED IN THE ANNOUNCEMENT OF 2005. THEREFORE, IT IS ANOTHER CONTRIBUTION TO THE SPANISH SCIENTIFIC AND TECHNOLOGICAL COMMUNITY PARTICIPATION IN THE DEVELOPMENT OF THE SMOS MISSION OF THE EUROPEAN SPACE AGENCY. SINCE 1998 SPAIN IS STRONGLY INVOLVED IN THIS EARTH OBSERVATION MISSION WHICH TRIES, FROM 2008 ON, TO OFFER FOR FIRST TIME GLOBAL MEASUREMENTS OF OCEANS SURFACE SALINITY AND SOIL MOISTURE. THROUGH A SERIES OF ACTIVITIES FINANCED BY CDTI (TECHNOLOGICAL PART), SPACE NATIONAL PROGRAMME, THE ESA EARTH OBSERVATION PROGRAMME, IMPORTANT CONTRIBUTIONS COULD BE DEVELOPED FOR THE SUCCESS OF THE MISSION, BY EVERY GROUP FORMING MIDAS. WITH THE PRESENTED PROPOSAL IT IS TRIED TO DEVELOP SEVERAL THEORETICAL AND EXPERIMENTAL ACTIVITIES AIMED AT IMPROVING THE ALGORITHMS TO CALCULATE SOIL MOISTURE, ONE OF THE TWO GEOPHYSICAL VARIABLES THAT FORM THE AXIS OF SMOS MISSION, TO VALIDATE THE PRODUCTS AFTER THE SATELLITE LAUNCHING (EARLY 2008), DURING THE COMMISSIONING PHASE AND THE TWO SUBSEQUENT YEARS, THE ALGORITHMS ANALYSIS PROPOSED FOR THE SOIL MOISTURE CALCULATION; THE	MARTINEZ FERNANDEZ	JOSE		UNIVERSIDAD DE SALAMANCA	CENTRO HISPANO-LUSO DE INVESTIGACIONES AGRARIAS	CENTRO HISPANO-LUSO DE INVESTIGACIONES AGRARIAS	01-10-07	31-12-10	MINECO	Spain

MAT2010-20601-C02-01		WATER DESALINATION:OPTIMIZATION OF MATERIALS AND ELECTRONICS FOR AN EFFICIENT USE OF RENEWABLE ENERGIES	DESALINIZATION\ULTRACAPACITOR\CARBON MATERIALS\CC/CC CONVERTER\RECTIFIER	THIS PROJECT BRINGS TOGETHER THE EXPERTISE OF THE GRUPO DE MATERIALES COMPUESTOS OF INCAR IN DEVELOPING NEW ELECTRO-CHEMICAL APPLICATIONS FOR CARBON MATERIALS AND THAT OF AREA DE TECNOLOGIA ELECTRONICA OF UNIVERSIDAD DE OVIEDO IN THE FIELD OF ENERGY CONVERSION SYSTEMS. THIS PROJECT AIMS TO OBTAIN A CAPACITIVE DESALINATION SYSTEM BASED ON CARBON MATERIALS WITH ENERGY RECOVERY BETWEEN THE DEIONIZATING BLOCKS AND EXTERNAL SUPPLY USING WIND POWER. ONE OF THE MAIN OBJECTIVES OF INCAR IS TO EVALUATE THE TECHNOLOGY OF CAPACITIVE DEIONIZATION (CDI) OF SALTED WATER (FROM SEA OR BRINE WATER), AND TO DETERMINE THE VIABILITY OF THE MATERIALS USED AND THE TECHNOLOGY ITSELF FROM A PRACTICAL POINT OF VIEW. A SECOND OBJECTIVE IS TO DEVELOP A NEW TYPE OF SUPERCAPACITORS THAT, THANKS TO THE INTERACTION ELECTRODE MATERIAL/ELECTROLYTE, ARE ABLE TO PROVIDE HIGH CAPACITY AND TO STORE ENERGY DENSITIES SIMILAR TO BATTERIES. IN BOTH CASES, THE GROUP OF INCAR WILL STUDY THE DEVELOPMENT OF ELECTRODE ACTIVE MATERIALS, THE PREPARATION OF THE ELECTRODES AND THE ASSEMBLAGE OF THE DEVICE TO EVALUATE, ULTIMATELY, THEIR PERFORMANCE. IN THE FIRST CASE, THE CAPACITY OF THESE MATERIALS TO REMOVE SALT IN A DYNAMIC SYSTEM (WITH A FLUX OF SALTED WATER) WILL BE STUDIED. THE EFFICIENCY IN SALT REMOVAL AND THE DURABILITY OF THE	BLANCO RODRIGUEZ	CLARA		AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	INSTITUTO NACIONAL DEL CARBON (INCAR)	INSTITUTO NACIONAL DEL CARBON (INCAR)	01-01-11	31-12-13	MINECO	Spain
MAT2010-20601-C02-02		WATER DESALINIZATION: MATERIALS AND ELECTRONIC OPTIMIZATION FOR THE EFFICIENT USED OR RENOVABLE ENERGY	PILLARED CLAYS\HETEROGEN CATALYSTS\WET PEROXIDE CATALYTIC OXIDATION\WASTEWATER DEPURATION	THIS PROJECT BRINGS TOGETHER THE EXPERTISE OF THE GRUPO DE MATERIALES COMPUESTOS OF INCAR IN DEVELOPING NEW ELECTRO-CHEMICAL APPLICATIONS FOR CARBON MATERIALS AND THAT OF AREA DE TECNOLOGIA ELECTRONICA OF UNIVERSIDAD DE OVIEDO IN THE FIELD OF ENERGY CONVERSION SYSTEMS. THIS PROJECT AIMS TO OBTAIN A CAPACITIVE DESALINATION SYSTEM BASED ON CARBON MATERIALS WITH ENERGY RECOVERY BETWEEN THE DEIONIZATING BLOCKS AND EXTERNAL SUPPLY USING WIND POWER. ONE OF THE MAIN OBJECTIVES OF INCAR IS TO EVALUATE THE TECHNOLOGY OF CAPACITIVE DEIONIZATION (CDI) OF SALTED WATER (FROM SEA OR BRINE WATER), AND TO DETERMINE THE VIABILITY OF THE MATERIALS USED AND THE TECHNOLOGY ITSELF FROM A PRACTICAL POINT OF VIEW. A SECOND OBJECTIVE IS TO DEVELOP A NEW TYPE OF SUPERCAPACITORS THAT, THANKS TO THE INTERACTION ELECTRODE MATERIAL/ELECTROLYTE, ARE ABLE TO PROVIDE HIGH CAPACITY AND TO STORE ENERGY DENSITIES SIMILAR TO BATTERIES. IN BOTH CASES, THE GROUP OF INCAR WILL STUDY THE DEVELOPMENT OF ELECTRODE ACTIVE MATERIALS, THE PREPARATION OF THE ELECTRODES AND THE ASSEMBLAGE OF THE DEVICE TO EVALUATE, ULTIMATELY, THEIR PERFORMANCE. IN THE FIRST CASE, THE CAPACITY OF THESE MATERIALS TO REMOVE SALT IN A DYNAMIC SYSTEM (WITH A FLOW OF SALTED WATER) WILL BE STUDIED. THE EFFICIENCY IN SALT REMOVAL AND THE DURABILITY OF THE	MARTIN PERNIA	ALBERTO		UNIVERSIDAD DE OVIEDO	DPTO. INGENIERIA ELECTRICA, ELECTRONICA Y COMPUTADORES	ESCUELA POLITECNICA SUPERIOR DE INGENIERIA DE GIJON	01-01-11	31-12-13		