Protection and Sustainable Use of the Dinaric Karst Transboundary Aquifer System

Annual Work Plan 2012

Final Version

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DIKTAS/SC2/2

http://diktas.iwlearn.org

Contents

Annexes:

1 Introduction

This document presents the DIKTAS (Protection and Sustainable Use of the Dinaric Karst Transboundary Aquifer System) project Annual Work Plan for 2012. The document is based on the DIKTAS Project Document (November 2009), modified Strategic Results Framework (SRF) as specified in the Project Inception Report (February 2011) and the project results achieved in 2011. The 2011 results of the DIKTAS project were presented at the second Project Team Meeting in Trebinje (January 2012) and described in the Minutes of the Meeting, the Project Manager Summary Report and the experts reports.[1]

The 2012 DIKTAS activities were discussed during the DIKTAS Working Groups (WG) meetings and the second Project Team Meeting (held back-to-back in Trebinje, January 2012), resulting in a tentative Activity Timetable 2012.[2] An elaborated version of the Activity Timetable is attached to this document. The table includes an overview of main activities, their relation with project outcomes and outputs and remarks on responsibilities and deadlines. The activities not planned to commence in 2012 are just mentioned in the table or (if relevant for understanding of the 2012 activities) very briefly described in the text below.

The DIKTAS project consists of four components, each of them related to one expected outcome. In order to reach each expected outcome several outputs have been defined in the Project Document. Each output will be achieved through a number of activities (individual or grouped), that are presented in this document.

A total of 11 outputs are defined in the Project Document. In the first full year of project implementation (2011), the main activities were related to the project Components 1 and 4. In 2012 however, all four components will be addressed. Although the Transboundary Diagnostic Analysis (TDA, output 1) remains the largest single project activity also in this year, establishing of the DIKTAS cooperation mechanisms (outputs 4, 5, 6) is of equal importance. These and other planned activities are briefly described below and in the Activity Timetable. Some execution modalities for these activities and remarks about the overall project are given in the closing chapter of this document.

2 Activities in the second year of project implementation - 2012

The activities in DIKTAS' annual plans are presented in the same way as in the Project Document in order to preserve consistency in project document presentation and allow for direct comparison.

COMPONENT 1. IMPROVING THE UNDERSTANDING OF THE RESOURCE AND OF ITS ENVIRONMENTAL STATUS

OUTCOME 1. COUNTRIES RECOGNISE THE KARST AQUIFER SYSTEM AS A SHARED AND HIGHLY VULNERABLE

[1] All the documents mentioned above are available in the DIKTAS on-line Collaborative Environment
[2] Attached to the Minutes of the Meeting (January 2012)

RESOURCE, AND AGREE TO TAKE STEPS TO DEAL WITH ITS TRANSBOUNDARY IMPLICATIONS.

Output 1. *A Transboundary Diagnostic Analysis (TDA) prepared and approved by countries: transboundary problems and root causes identified and options for interventions to address national and transboundary problems proposed.*

Under this output the TDA process is undertaken, and the TDA document will be prepared and approved, including an impact assessment, causal chain analysis and governance analysis in order to better identify and prioritize critical areas for interventions, investments, and reforms within the SAP. The basis for the TDA is the collection and analysis of hydrogeological, environmental, and socio-economic data, as well as comprehensive information on legal and institutional frameworks. This important work is carried out by the project Working Groups (WGs- composed of the representatives of NEUs and regional and international consultants), under the lead of the project coordinator and with guidance from the Science Advisory Panel. The TDA will eventually be approved by the national inter-ministerial committees and the project Steering Committee.

In order to accomplish the TDA output, five main activities are defined, namely:

1. Regional hydrogeological characterisation
2. Regional environmental and socio-economical assessment
3. Regional assessment of legal and institutional frameworks and policies
4. Synthesis and finalisation of the Transboundary Diagnostic Analysis
5. Local Scale activities/Case Studies

Following the Annual Work Plan 2011, four Working Groups were set up as follows:

Working Group 1: Hydrogeology

Working Group 2: Environment and Socio-Economics

Working Group 3: Legal and Institutional Frameworks

Working Group 4: Stakeholder Participation

Three of these working groups dedicated to the activities 1-3 listed above.[3] During the last year, these WGs collected analysed and processed data and information necessary for a complete and reliable TDA. The Annual Work Plan 2011 specified completion of the activities in the first half of 2012. Accordingly, the second part of 2012 should be dedicated to synthesis and harmonisation of the information across the countries, sectors and disciplines. That also includes the identification and prioritisation of transboundary problems, and assessment of their impacts and underlying causes (causal chain analysis).

In 2012, the Project Team members will continue to work in the WGs, according to their individual WGs work plans. Considering that the work of all working groups is contributing to the overall goal of the TDA preparation the close coordination and harmonization of the individual WG work plans is of central importance, as is the very close cooperation among the different working groups. The elaboration of the overall project Annual Work Plan in this document is fully

[3] The fourth WG is dedicated to the Stakeholders Participation (Output 9), but also contributing to the TDA preparation

directed at this purpose. The brief description of the main TDA activities in 2012 is given below. More details on the expected time of finalization of each activity are provided in the Activity Timetable (Annex 1):

1. Regional hydrogeological characterisation will be completed in 2012, including the regional hydrogeological map and the hydrogeological description of the region. This will comprise an overview of hydrology, geology, aquifer system characterisation at the scale of the project area.[4] Issues like groundwater utilisation and demand, groundwater reserves assessment, vulnerability and protection will be described using the collected regional information and in extent required for the regional and transboundary analysis (see the Synthesis & Finalisation below).

The regional characterisation should be finished by the end of September, using the rest of the year to describe the gaps in the baseline knowledge and briefly suggest activities to fill in these gaps (to be elaborated in the SAP).

As a part of the regional hydrogeological analysis, identification prioritisation of the regions of transboundary interest, i.e. those underlain by transboundary aquifers (WG1) and the main transboundary concerns (WG1, WG2) needs to be rounded off no later than the end of April. This will allow for further analysis and synthesis of information in these selected regions to take place (see the Synthesis & Finalisation below).

2. Regional environmental and socio-economical assessment will be the two main activities in this year. Firstly, data collection will be finalised, preferably before the end of April. Attention will be paid to trend detection, especially in the areas with possible direct transboundary impact. The second activity is a regional environmental and socio-economical analysis providing direct input for the regional part of the DIKTAS TDA.

3. Regional assessment of legal and institutional frameworks and policies will be completed by bringing in the knowledge of international regulations and international experiences while dealing with harmonisation of the transboundary frameworks and policies. Besides, the outcomes of the regional HG and ESE assessments will be analysed from the legal/institutional point of view. This will assist in the identification of specific targets in the harmonisation process. The concept proposals for harmonisation of policies will be made (to be further elaborated during the SAP preparation).

4. Synthesis and finalisation of the Transboundary Diagnostic Analysis will focus on the selected transboundary areas and the issues of transboundary concern. Hence, a detailed hydrogeological assessment will be provided by WG1 preferably before end of June. Practically, the regional HG assessment will be extended with specifics for the areas in terms of groundwater quantity, quality, protection, and possible transboundary impacts. The assessment will be used to finalise the list of issues of transboundary concerns and to perform a thorough root cause analysis. This will be done jointly by three WGs, the WG2 having a leading role. The current, perceived and potential issues of transboundary concern will be analysed using harmonised information on hydrogeological characteristics, environmental and socio-economical setup, the law, policies and institutional conditions and the stakeholders. The Working Group 4 will contribute to the TDA preparation with information on the perceived issues of transboundary concern; those have been identified through a series of stakeholder participation workshops in the four DIKTAS countries.

[4] As specified in the Annex 2 (WG1 proposed activities 2012-13)

The draft TDA document will be compiled by an international consultant by end of December 2012.

5. Local Scale activities/Case Studies will be carried out to test the applicability of outcomes of the regional analysis at the local scale, dealing with concrete issues of transboundary concern such as increased water demand or groundwater pollution. Case studies will provide an opportunity to practically test protection/ vulnerability methods and to address some ecological aspects of the karst environment that are less visible at the scale of the regional assessment. The case studies will start in the autumn 2012 and continue up to the end of 2013. They will be carried out by activity leaders, chosen among WG specialists or by extending the project team. Activity leaders will have necessary support from the WGs and individual specialists, if/when required.

Output 2. *Baseline conditions identified, and environmental status indicators agreed upon and adopted.*

Once an acceptable and shared knowledge of the present baseline conditions of the DIKTAS project is achieved, the project team needs to identify feasible indicators for harmonised long-term monitoring of the system and its reactions to the various stress reduction measures and interventions that countries may undertake in the future within the SAP implementation context or otherwise. These Environmental Status Indicators must be simple, comprehensive and feasible, given the socio-economic and technical contexts in the countries. The GEF International Waters focal area has produced guidelines for the identification of these indicators, to be used realising this activity.[5] The environmental status indicators will be prepared by a selected activity leader, with assistance of the Project Team.

COMPONENT 2. ESTABLISHING COOPERATION AMONG COUNTRIES SHARING THE AQUIFER

OUTCOME 2. THE STRENGTHENED COLLECTIVE KNOWLEDGE AND COORDINATION AMONG DEVELOPMENT PLANS OF COUNTRIES, PROJECTS, AGENCIES AND DONORS, IMPROVES SUSTAINABILITY OF THE RESOURCE.

The outcomes of Components 1 (the baseline and environmental status) and 4 (the stakeholder analysis) are required to achieve the key project outcome – establishing and improving cooperation among the countries sharing the Dinaric Karst Aquifer System. The Annual Work Plan for 2011 specified the preparation of Terms of Reference for the Outputs 3 and 5 already in 2011. Due to an initial delay of the project and the time consuming establishment of the project structure, these activities will start in the first quarter of 2012. This delay will however have no repercussion on project execution as the draft documents will be presented for the approval of the Project Steering Committee in its next regular meeting (foreseen for April 2012).

Output 3. *A multi-country consultative body established and operational*.

A Consultative and Information Exchange (CIE) body comprised of the four countries will be a first step towards a systematic commitment to joint

[5] Monitoring and Evaluation Indicators for GEF International Waters Projects (A. Duda, Monitoring and Evaluation Working Paper 10, November 2002).

management, and also a first response to the call of the scientific community of the region. These had identified a better mutual understanding of the peculiar properties and functions of the Dinaric Karst Aquifer System, and the adoption of policies for its joint management, based on a regional consultative and management mechanism, as key priorities. The CIE shall be open to other countries sharing the aquifer system upon their request and approval from the Project Steering Committee. It shall be ensured that the body formed during the project should continue their work after completion of the project.

The first step towards the establishment of this multi-country Consultation and Information Exchange body (CIE) is the drafting of the Terms of Reference (ToR). Among others, the ToR will include the procedure for selection/nomination of the CIE members, the CIE role and responsibility, modus operandi, etc. In its work, the CIE will extensively use the guidelines, protocols and other collaborative mechanisms developed by European Union (Water Framework Directive), United Nations and various river basin commissions. Once the SC has approved and adopted the ToR, the members will be officially nominated and the first CIE meeting can be planned (foreseen for the last quarter of 2012). This activity will be carried out by the project coordination team in close cooperation with the project national focal points.

Output 4. *Environmental quality targets adopted and a joint harmonised monitoring program of the environmental status established.*

The TDA will identify the gaps in the baseline information necessary for the establishment of the SAP monitoring and evaluation framework. Furthermore, the stakeholder's analysis will gather information on institutions/departments/ agencies responsible and/or potentially relevant for the long term monitoring. The environmental status indicators (Output 2) will be used to suggest the targets for the joint monitoring. The targets and the monitoring procedure will be discussed and eventually adopted by the CIE. The environmental quality targets and a joint harmonised monitoring programme will be developed by a selected activity leader, with assistance of the Project Team.

Output 5. *An established and operational mechanism for the coordination and exchanges with other relevant projects and initiatives, including the GEF supported Mediterranean Partnership and others.*

It is a requirement of GEF funded projects, and a good practice, to capture the opportunities for synergies among relevant GEF projects in the specific country/region, and to avoid overlaps and repetitions. This development assistance approach can, and should of course be expanded also to other non-GEF multilateral and bilateral initiatives.

The Terms of Reference will be drafted for this mechanism. According to the Project Document, the mechanism should be embedded in the context of the CIE activities. Nevertheless, coordination and exchange with other projects and initiatives is encouraged at various levels and extent. The current contact on continuously ongoing informal information exchange with the Sava River Basin secretariat as well as the Neretva/Trebišnjica, Skodra/Skadar Lake and MedPartnership projects will be used to create a feasible ToR for cooperation and exchange of experience in the region.

COMPONENT 3. FACILITATING HARMONISATION OF POLICIES AND PRIORITY REFORMS

OUTCOME 3. POLITICAL COMMITMENT REACHED AMONG COUNTRIES ON IMPLEMENTING PRIORITY LEGAL, INSTITUTIONAL AND POLICY REFORMS FOR THE PROTECTION AND EQUITABLE UTILISATION OF THE KARST AQUIFER SYSTEM.

Output 6. *Countries establish ad hoc inter-ministerial committees focused on harmonisation of existing frameworks, and on priority reforms.*

National inter-ministerial committees (NICs) will be established in all countries parallel to the creation of the CIE. NICs and CIE together will represent the key technical-political interface of the project that will approve the TDA, process the endorsement of the SAP, approve the environmental status indicators, their long term monitoring and the environmental quality targets. They will have a particular role in guiding the process of harmonisation of existing policy and institutional frameworks.

The Terms of Reference will be drafted for this mechanism. Once the SC has approved and adopted the ToR, the members will be officially nominated and the first NICs meeting can be planned (foreseen for the last quarter of 2012). This activity will be carried out by the project coordination team in close cooperation with the project national focal points.

Output 7. *A Strategic Action Program (SAP) for the DIKTAS, and National Implementation Plans, elaborated and adopted by the country at high ministerial level.*

The SAP preparation will commence not before 2013. Nevertheless, the currently conducted activities (and particularly the TDA) will provide input for the SAP and that needs to be taken in account when describing the accounted problems and considering their possible solutions.

Output 8. *A partnership conference consolidates international support for the implementation of the priority actions.*

A partnership conference will be organised towards the end of the project in 2014. As a part of this conference, DIKTAS will host the IAH Karst Commission annual meeting. Preparation for this important event needs to start already in 2012.

COMPONENT 4 COMMUNICATION, DISSEMINATION AND REPLICATION ACTIVITIES

OUTCOME 4. LONG TERM SUSTAINABILITY OF ACHIEVEMENTS ENHANCED THROUGH PUBLIC AND POLITICAL AWARENESS CAMPAIGNS, STAKEHOLDER INVOLVEMENT AND REPLICATION MECHANISMS.

Output 9. *Stakeholder Analysis, and information and communication activities to highlight project's progress and achievements and support stakeholder's involvement*.

The work in 2012 includes the continuation of overarching communication activities in support of the project objectives, conductance of the stakeholder workshops to feed the needs for the preparation of the TDA and the update of the Stakeholders and Public Participation Strategy (SPPS). The main activities until June 2012 are defined in the Action plan agreed with GWP-Med in 2011. Four stakeholder participation workshops, one in each of the DIKTAS countries will be carried out in February-March 2012. During these workshops information on various groups of stakeholders' perceived issues of transboundary concern will be collected, as a contribution to the TDA preparation. Specific, tailored communication and stakeholders participation activities will take place in the second half of 2012 on the basis of the outcomes of the updated SPPS.

Output 10. *Targeted capacity building programmes to encourage replication of new practices, behaviours and techniques.*

Various capacity building activities are envisaged to take place throughout the project. In 2011, some events (workshops, meetings) organised by other projects/programmes were instrumental for DIKTAS promotion and/or capacity building. Similar opportunities will be used in this year, such as the H2020 project training workshop on karst waters in Split in March 2012.

The capacity building activities will include both policy and technical instruments in order to enhance the use and protection of karst aquifers at various levels (local, regional, national, international). These activities are expected to encourage replication of best practices, solutions and techniques identified throughout the project implementation period.

The update of the SPPS will provide better insight into the required capacity building activities. Nevertheless, the DIKTAS targeted capacity building programme in 2012 needs to be specified in more details and contribution is requested from all the members of the project team.

The only DIKTAS capacity building activity suggested so far is to replicate an education programme developed in a framework of the GEF Small Grants Programme. The programme called 'River project' is about karst water ecology and it was implemented in several places in Herzegovina in cooperation with the Trebišnjica & Neretva project. The programme could be replicated throughout the DIKTAS project area.

Output 11. *Participation to IW LEARN activities and the website*

The most substantial contribution to IW LEARN activities, namely the GEF IW conference in Dubrovnik was provided by DIKTAS in 2011. The next GEF IW conference will be held in 2013. In the meantime, the website will be regularly

updated. If a developer of the website extends the website with RSS functionality (the news exchange service), DIKTAS will make use of it in its informational & promotional activities.

3 Execution Modalities

The Annual Work Plan will be executed by the DIKTAS Project Team under the lead of the Project Coordinator. The Project Team consists of the Project Management Team, the country experts (from NEUs) and international experts. Working groups, as set up last year around the main TDA issues and the Stakeholder Participation will remain in 2012. However, the second phase of the TDA and its rounding off asks for close cooperation among the groups on various issues. Besides, new activities will start, requiring expertise from various disciplines, i.e. various working groups. Therefore, WG coordinators will meet more often and Activity Leaders will be designated for some new activities. Activity Leaders will be responsible for particular activities and supported by the team regarding required expertise.

The TDA remains the most time consuming activity in 2012. The Project Document foresees the accomplishment of the TDA in three years, whereas the project plan for 2001 ambitiously reduces this period to effectively two years (2011-2012). According to the revised time schedule proposed by the WG1, the TDA activities need to be extended until June 2013 (see Annex 2). Although the reasons for the proposed extension are legitimate, this Annual Work Plan will still have the end 2012 as the targeted completion date for the TDA. The completion date will be reconsidered only if in the course of the plan execution a limited extension (2-3 months for the TDA harmonisation and TDA reporting) becomes an obvious necessity. Additional work of the HG group, as outlined in their Workplan, that is not of direct relevance for the TDA preparation will be continued in 2013.

The regional hydrogeological characterisation suggested by the WG1 should be carried out with data collected so far and with a minimal collection of new data in the coming few months. This characterisation covers generally the topics 2-8 in the WG1 activity list: physiography and climate, hydrology, geological pattern, geomorphology / karstification, aquifer systems, groundwater basins and karst aquifer characterisation. The analysis of groundwater utilisation and demands (topic 8) need to be conducted together with WG2 and WG3 whereas the groundwater reserve assessment (topic 10) and optimisation (topic 13) are beyond the TDA scope. The TDA should contain only an overview and analysis of existing assessments (if any). The latter also holds for the groundwater vulnerability and protection (topic 11). The analysis of protection measures needs to be carried out together with the WG2 and WG3 experts; the possible improvements of protection measures will be addressed in more detail while preparing the SAP. The vulnerability will come in focus during the preparation of thematic components for the DIKTAS Management Map.

It is very important that WG1 concentrates on the regions and issues of transboundary concerns immediately; keeping in mind that the TDA is an analysis based on collected/available data and already performed assessments. Any further assessment (in terms of estimations, simulations, optimisations, etc.) is beyond the scope of the TDA.

The WG2 prepared a draft list of the important issues where its input/output will be required (see Annex 3). This list could be used project-wide

and gradually extend with other issues that require coordination by various WGs and/or Activity leaders.

The plans for new project activities (regarding environmental status indicators, targets, joint harmonised monitoring programme and targeted capacity building) will be defined in more details once the activity leaders are selected.

Among the possibilities for the project exposure and publications in this year, the IAH Congress at Niagara Falls in September 2012 takes a special place. The project should be represented at the congress at least with one good paper (lead: WG1 advisor). The project will be represented at the 6th World Water Forum in Marseille as well.

The second Steering Committee will be held in April/May 2012 in Tirana. This event will also be used by the hosts to promote the project and the international water cooperation (lead: project coordinator & focal points).

The project Mid-Term Review will take place this year and will be conducted by an independent external evaluator. The evaluator may request any kind of project related information in order to be able to assess the progress made. Full support of all project team members will be in the reviewing process (lead: project coordinator).[6]

[6] The document archive in the collaborative environment needs to be updated on regular basis by all members of the project team.

Annex 1: Activity Timetable 2012

Annual Workplan 2012	Outputs	Activity	Elaboration/comment	Responsible	Expected completion	2012											
						Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Outcome 1: COUNTRIES RECOGNIZE THE KARST AQUIFER SYSTEM AS A SHARED AND HIGHLY VULNERABLE RESOURCE, AND AGREE TO TAKE STEPS TO	Output 1: Transboundary Diagnostic Analysis (TDA) prepared and approved by countries	1. Regional hydrogeological characterisation	Areas & issues of transboundary concern identified	WG1	End April	■	■	■	■								
			Regional hydrogeological characterisation (HG Map + description)	WG1	End September	■	■	■	■	■	■	■	■	■			
			Proposal for filling of baseline knowledge gaps	WG1	End 2012	■	■	■	■	■	■	■	■	■	■	■	■
		2. Regional environmental and socio-economical assessment	Data collection finalised with focus on areas of TB concern & trends	WG2	End April	■	■	■	■								
			Impact assessment & thematic maps completed	WG2	End September	■	■	■	■	■	■	■	■	■			
		3. Regional assessment of legal and institutional frameworks and policies	WP 2: Internat. Law and Lesson Learned	WG3	End April	■	■	■	■								
			WP 2: Analysis of the HG and ESE regional assessments	WG3	End Sept					■	■	■	■	■			
			WG 3: Identification of specific goals	WG3	End June	■	■	■	■	■	■						
			WP3: Proposal for harmonisation	WG3	End 2012	■	■	■	■	■	■	■	■	■	■	■	■
		4. Synthesis and finalization of the Transboundary Diagnostic Analysis	HG Analysis of (seven) priority areas completed	WG1	End June	■	■	■	■	■	■						
			Root cause and governance analysis	WG2 lead, WG 3	End September						■	■	■	■			
			Synthesis of the TDA	All, PM lead	End 2012						■	■	■	■	■	■	■
		Local Scale Activities/Case Studies	2-3 local scale activities identified and initiated	Activity leaders	End 2013									■	■	■	■
	Output 2: Baseline conditions identified, and environmental status indicators agreed upon	Environmental Status Indicators definition	following the GEF guidelines	Activity leader	Jun - September						■	■	■				
Outcome 2: THE STRENGTHENED COLLECTIVE KNOWLEDGE AND COORDINATION AMONG DEVELOPMENT PLANS OF COUNTRIES, PROJECTS, AGENCIES AND DONORS, IMPROVES SUSTAINABILITY OF THE RESOURCE.	Output 3: A multi-country consultative body (CIE) established and operational.	ToRs drafted	not longer than 2-3 pages	Proj. Coord. Team & Focal Points	March-April			■	■								
		Nomination	Timing depends on adopted ToR	Proj. Coord. Team & Focal Points	End May					■	■	■					
		First Meeting	Timing depends on adopted ToR	Proj. Coord. Team & Focal Points	Nov-Dec											■	■
	Output 4: Environmental quality targets adopted and a joint harmonized monitoring program	To propose environmental status targets and a joint monitoring programme	precondition: the state of majority of env. status variables should be known	Activity leader	Sept 2012 - March 2013									■	■	■	■
	Output 5: A mechanism for coordination and exchanges with other projects and initiat.	ToRs drafted	not longer than 2-3 pages	Proj. Coord. Team & Focal Points	March-April			■	■								
Outcome 3: POLITICAL COMMITMENT REACHED AMONG COUNTRIES ON IMPLEMENTING PRIORITY LEGAL, INSTITUTIONAL AND POLICY REFORMS FOR THE PROTECTION AND EQUITABLE UTILIZATION OF THE KARST AQUIFER SYSTEM.	Output 6: Countries establish ad hoc inter-ministerial committees focused on harmonization of existing frameworks, and on priority reforms. The Committees meet regularly	ToRs drafted	not longer than 2-3 pages	Proj. Coord. Team & Focal Points	March-April			■	■								
		Nomination	Timing depends on adopted ToR	Proj. Coord. Team & Focal Points	End May					■							
		First Meeting	Timing depends on adopted ToR	Proj. Coord. Team & Focal Points	Nov-Dec											■	■
	Output 7: A Strategic Action Program (SAP)	*no dedicated activities this year*															
	Output 8: A partnership conference	First announcement	decide about venue, date, prepare mailing list	Proj. Coord. Team	October										■		
Outcome 4: LONG TERM SUSTAINABILITY OF ACHIEVEMENTS ENHANCED THROUGH PUBLIC AND POLITICAL AWARENESS CAMPAIGNS, STAKEHOLDER INVOLVEMENT AND REPLICATION MECHANISMS.	Output 9: Stakeholders Analysis, and information and communication activities to highlight project's progress and achievements and support stakeholders involvement	Overarching information activities		WG4	Throughout the year		■		■		■		■		■		■
		Revision of the stakeholder list		WG4	End January	■											
		On-line survey		WG4	End March	■	■	■									
		National Workshops		WG4	End March	■	■	■									
		Interviews with stakeholders		WG4	End April	■	■	■	■								
		Transboundary Workshop		WG4	End May	■	■	■	■	■							
		Final report stakeholders analysis		WG4	End June	■	■	■	■	■	■						
		SPPS		WG4	End July	■	■	■	■	■	■	■					
	Output 10: Targeted capacity building programs	variety of activities, mostly events	still largely to be filled in	Proj. Coord. Team	Throughout the year	■		■		■		■		■		■	
	Output 11: update of the website/portal		solely the update; related to overarching info activities	All	Throughout the year		■		■		■		■		■		■
Overal Activities	related to organisation of events, collaboration, publications, reviewing, etc	Project Steering Committee		Proj. Coord. Team	April/May				■	■							
		Mid-term Review		Proj. Coord. Team	Sept.									■			

Annex 2: WG1 activities & revised time schedule

TOPICS	02.12	04.12	06.12	08.12	10.12	12.12	02.13	04.13	06.13
1. Introduction									
1.1. Project tasks and role of WG1	x	x							
1.2. General on karst – term, distribution, importance	x	x							
1.3. Historical review of karst researches	x	x	x						
2. Physiography and climate									
2.1. Geographical position and boundaries	x	x	x						
2.2. Vegetation and land cover	x	x	x						
2.3. Rainfall regime	x	x	x						
2.4. Air temperature	x	x	x						
2.5. Other climate elements	x	x	x						
3. Hydrology									
3.1. Hydrographic network	x	x	x						
3.2. Streamflow regime	x	x	x						
3.3. Controlling streamflow – dam	x	x	x						

and reservoirs									
4. Geological pattern									
4.1. Paleogeography of Dinaric region	x	x	x						
4.2. Litostratigraphic units	x	x	x						
4.3. Tectonics	x	x	x						
5. Geomorphology / karstification									
5.1. Karstification process	x	x	x						
5.2. Karstic features	x	x	x						
5.2.1. Surficial karstic features	x	x	x						
5.2.2. Potholes and caves	x	x	x						
6. Aquifer systems									
6.1. Aquifer classification and distribution	x	x	x						
7. Groundwater basins									
7.1. GW basins	x	x	x	x	x				
7.1.1. Regional groundwater direction	x	x	x	x	x				
7.1.2. Tracing tests results	x	x	x	x	x				

7.2. Groundwater bodies	x	x	x	x	x	x			
8. Karst aquifer characterization									
8.1. Aquifer permeability	x	x	x	x					
8.2. Aquifer recharge	x	x	x	x					
8.3. Aquifer discharge (springs distribution)	x	x	x	x	x	x	x		
8.4. Springflow regime	x	x	x	x	x	x	x		
8.5. Groundwater quality	x	x	x	x	x	x	x		
9. Groundwater utilization and demands									
9.1. Tapping structures and control of groundwater flow	x	x	x	x	x	x	x		
9.2. Main waterworks	x	x	x	x	x	x	x		
9.3. Smaller water users (industrial sector and rural settlements)	x	x	x	x	x	x	x		
9.4. Agricultural sector	x	x	x	x	x	x	x		
9.5. Mineral and thermal water use	x	x	x	x	x	x	x		
9.6. Groundwater treatment	x	x	x	x	x	x	x		

9.7. Water demands and sustainability	x	x	x	x	x	x	x		
10. Groundwater reserves assessment									
10.1. Methodology	x	x	x	x	x	x	x	x	x
10.2. Groundwater reserves and availability	x	x	x	x	x	x	x	x	x
10.2. Ecological flow	x	x	x	x	x	x	x	x	x
11. Aquifer vulnerability and protection									
11.1. Aquifer vulnerability	x	x	x	x	x	x	x	x	x
11.2. Groundwater protection zones	x	x	x	x	x	x	x	x	x
11.3. Impact of climate changes on groundwater resources	x	x	x	x	x	x	x	x	x
12. Transboundary aquifers									
12.1. Identification and status	x	x	x	X	x	x	x	x	x
12.2. Possible disputes in groundwater management	x	x	x	X	x	x	x	x	x

13. Towards optimization of intakes and sustainable use (incl.monitoring status)	x	x	x	X	x	x	x	x	x
14. List of references	x	x	x						

Annex 3: WG2 important issues table

Map on areas of interest (in border areas with transboundary aquifers)	To be provided by Vedran and **WG HG**	Expected 3 February 2012
Focused data collection on areas of interest, provide relevant data on dams, potential polluters (industries, mining, waste disposal, wastewater treatment…)	To be provided by **WG ESE** as input to WG Stakeholder and national stakeholder consultation meetings	End of February 2012
Preliminary issues of transboundary concern identified	To be provided by **WG HG**, in conjunction with results from the stakeholder consultation meetings	End of March 2012
All data collection finalized, with particular focus (and greatest detail) in the areas of interest	**WG ESE**	End of April 2012
Trends for pressures and demands identified for areas of interest	**WG ESE,** to be provided to WG HG	End of April 2012
Joint meeting with WH HG	WG HG, **WG ESE**	Beginning of May 2012
Impact assessment based on Preliminary Issues of Transboundary Concern completed	**WG ESE**	Mid June 2012
Final issues of transboundary concern identified	WG HG (based on the impact assessment provided by WG ESE)	End of June 2012
Root cause analysis conducted for final issues of transboundary concern	WG ESE	September 2012