WP5.2

Promotional summary of protocols for CB WSS

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1. Background/introduction

This document summarizes all work that was done during DRINKADRIA project on Work Package 5: Cross border water supply management.

First part of project was focused on identification of current status of CB WSS. Starting point was to explore the historical background that led to establishment of cross border water supply systems (CB WSS). The vast majority of cases revealed that most of them originated in one country (Yugoslavia). Political shifts and pressures altered national borders and changed status of existing water supply systems into CB WSS. Aim of this package was to review and analyse current situation in all eight participating partner countries.

In second phase of project work was divided into two activities – first activity was researching and analysing existing protocols and contracts regarding CB WSS (Faculty of Civil and Geodetic Engineering) and second activity was analysing existing water tariffs and developing Pricing model (Faculty of Economics).

In final phase it was pointed out that one of most problematic aspects is long term planning. Extensive analysis was made and revealed that currently there is no existing guidelines in any of participating countries. This presents a very big problem to most water utility managers. An extended review of available literature that covers long term cross border water supply (CB WS) planning in all participating countries and internationally was made.

2. Challenge: Current status of CB WSS

A systematic overview of historical development was prepared regarding CB/CR WSS in Adriatic macro region [1–3]. This stride was necessary because content of this activity presented foundation for next two activities in WP5.

Data about CB/CR WSS was collected through questionnaires that were distributed to project partners. In first phase 20 questionnaires was returned for analysis. 47 cases for CB/CR WSS in Adriatic region have been reported by project partners [1] by the end of DRINKADRIA project (September 2016). Analysis included a large range of data: (1) general data; (2) legal framework; (3) CB WS economics; (4) technical issues; (5) management issues; (6) SHP files and (7) annexes.

The questionnaires were aimed to answer two main questions: (1) where are the locations of CB/CR WSS and (2) what is their current status?

Analysis returned a wide spectre of different data and a short key needed to be implemented for classify received data - describing the status of CB and CR WSS (Figure 1): (1) active; (2) inactive and (3) potential.

All collected data was integrated into DRINKADRIA platform [4].

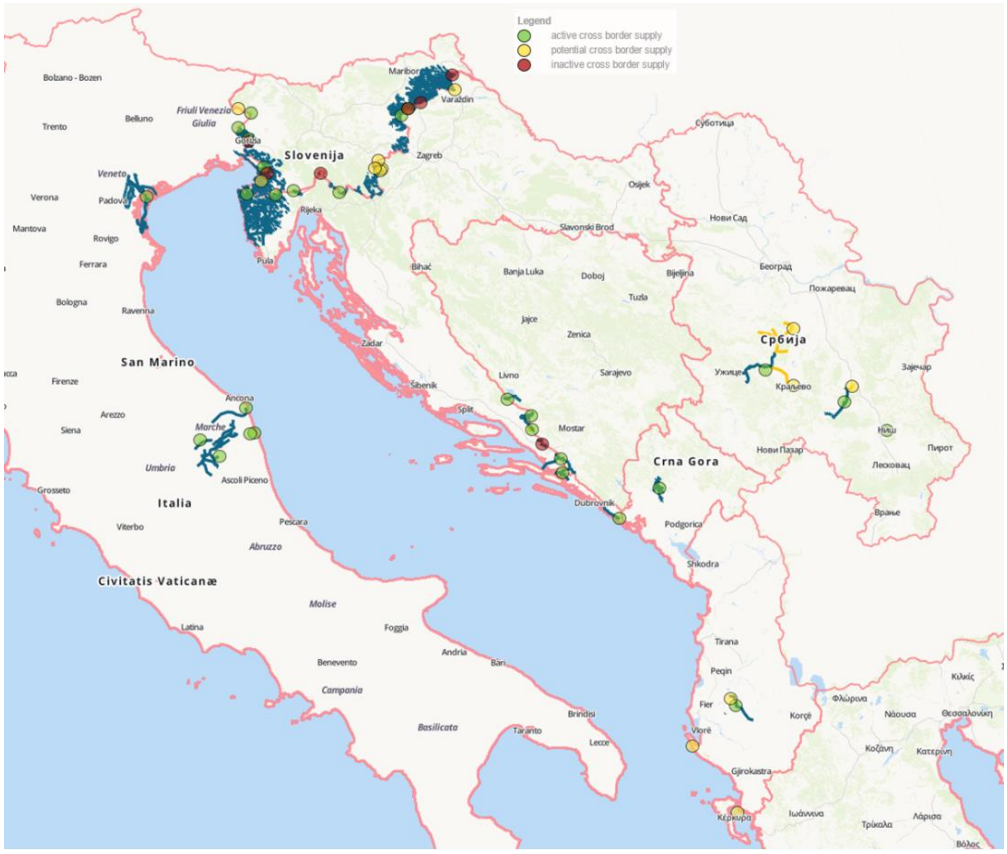

Figure 1: Cross border water supply map with identification of active, inactive and potential CB/CR WSS [4].

Key issues to solve regarding the efficient operation of CB and CR WSS are:

- inadequate legislation framework regarding CB WSS;
- inadequate institutional framework;
- issues relative to the determination of fair water price;
- high water losses and;
- absence of long term CB and CR WS planning [2].

Analysis of present and elaboration of scenarios for future drinking water demand with examples from world, Europe and Adriatic regions were prepared[1]. Water demand trends are crucial component in long term water supply planning and also play a major role in political decisions (if new CB / CR WSS is needed or not). Partners in DRINKADRIA project provided current information regarding present and future trends in water demand (Table 1).

Table 1: Present and future analysis of water demand (all data was provided by project partners in DRINKADRIA project in 2014) [1].

CB/CR	Route of WSS
CB	from Mrzlek (Slovenia) to Gorizia (Italy)
CB	from Trieste (Italy) to Sežana (Slovenia)
CB	from Albana (Italy) to Golo Brdo (Slovenia)
CB	from Buzet (Croatia) to Koper (Slovenia)
CB	from Atomske toplice (Slovenia) to Luke poljanske (Croatia)
CB	from Ilirska Bistrica (Slovenia) to Starod (Slovenia), Šapjane (Croatia), Jelšane (Slovenia), Klana (Croatia), Mučići (Croatia), Matulji (Croatia)
CB	Čakovec (Croatia) – Ormož (Slovenia)
CB	Neum (Bosnia and Herzegovina) – Dubrovačko Primorje (Croatia)
CB	Tomislavgrad (Bosnia and Herzegovina) – Imotski (Croatia)
CB	from Vrgorac (Croatia) to Ljubuški (Bosnia and Herzegovina)
CB	from Imotski (Croatia) to Drinovačko Brdo and Puteševica (Bosnia and Herzegovina)
CB	from Posusje (Bosnia and Herzegovina) to Imotski (Croatia)
CB	from Doljani (Bosnia and Herzegovina) to Metković (Croatia)

CB	from Bileća Lake (Bosnia and Herzegovina) through Konavle (Croatia) to Herceg Novi (Montenegro)
CR	Berat – Kucove
CR	Rzav
CR	from Cingoli to Camerano
CR	from Sefro to Matelica
CR	from Montefortino, Sarnano to Montecosaro
CR	from Montefortino, Sarnano to Civitanova Marche
CR	from Bolognola to San Ginesio

3. Challenge: Negotiation framework

Several studies were analysed regarding factors that have main influence in negotiation process in CB affairs [5–7]. Managerial processes give more significance to international businesses because it was recognized that this is one of key issues for successful implementation of international business strategies [8, 9]. Negotiation process procedure for new CB WSS was analysed and for resolution purpose the negotiation process (Figure 2) could be divided in three consecutive sections:

(1) **antecedent phase** – detailed description of actions to take place prior to face-to-face negotiations:

- **Intelligence gathering** – is the act of collecting, processing, analysing and evaluating available data [10]. Understanding the market conditions, future trends, and how such issues will affect each party is only the first step. Information on the other participants involved should be a priority as well. This phase is often considered the most important by negotiators because it provides them with a foundation for all future decisions and recommendations.
- **Formulation** – setting goals and determining objectives are an inherent part of any planning phase [11, 12].
- **Strategy** – is a plan is a plan, chosen to bring a desired future such as achievement of solution to a problem. Negotiators should come up with general strategies that drive the specific tactics they will deploy [13]. A predesignated trade-off strategy is a sign of a well-prepared negotiator [14].
    i. **Preparation** – also includes rehearsing verbal communication, arranging/creating support materials and attending to logistical concerns. Greater accomplishments can often be achieved in a well-planned and prepared thirty minute session that a poorly prepared two hour marathon [10]. When preparation phase enters final stages, two

facts must be established: (1) Level of interest and (2) General financial status of partners

(2) **concurrent phase** – is about current status of WSS and negotiation framework. Following elements should also be considered:

- **Communication** – it is of critical importance in stirring negotiation process. A clear communication strategy, aligned with the integration strategy and the desired culture of the new organization, is a critical component of a successful integration strategy [15].
- **Natural cultural differences** – cross-cultural research comparing negotiations in different cultures suggests the distinctive negotiating styles [16–19]. In the realm of international negotiations, studies stated that cultural differences, such as individualism versus collectivism, affect negotiation process [20], judgement biases in negotiation [21], negotiation behaviour [22], conflict resolution strategies [23], and negotiation joint gains [24]. A recent 33-nation study reveals the differences between tight and loose cultures [25]. They claim that tight cultures have many strong forms and a low tolerance of deviant behaviour as the loose cultures show the opposite demeanour. One of conclusions that was made is that national cultural differences in most cases negatively influence the concurrent phase of process.
- **Organizational cultural differences** – the relationships between organizational cultural differences and other human factors to the effectiveness of the integration process are complex and vary across different industry sectors [26, 27].

(3) **consequent phase** – contract formation and signature. The product of antecedent and concurrent constructs is a negotiated outcome, which is usually measured in profits and negotiator satisfaction [28]. When negotiations are mature for closing the agreement it depends on the situations what are the signs. One of most important signs is opinion between both parties that they have reached a state where this agreement is better than no agreement. At the same time they must both be convince that they cannot achieve further concessions at the opponent [29]. Negotiators must recognize the right moment for finishing the negotiations since finishing too early or too late can cause a lot of problems. Side that offers closure dictates the pace of closure. Ideal timing to finish negotiations is when both parties believe they have reached maximum of what they can achieve [30].

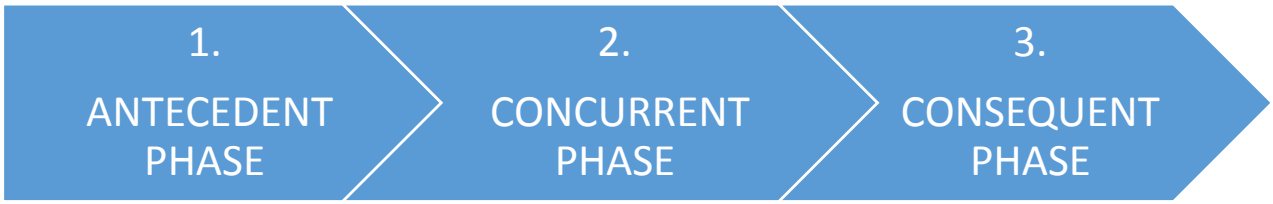

Figure 2: Scheme of procedure for new cross border/region water supply system [18, 31].

4. Challenge: Draft Contract for CB WSS

Draft contract was prepared based on analysis of currently existing CB WS contracts that are in Adriatic and on available examples of good international practices.

Based on comments from the partners regarding length of the contract a detailed survey and analysis was made [32, 33]. In annex 1 a questionnaire is prepared that can be used by bilateral commissions and other interested stakeholders on the basis of which the assessment can be made of existing contracts. All articles can be evaluated with following scale:

- Undefined/Not well defined,
- OK defined and
- Very well defined.

Articles that fall into category Undefined/Not well defined are recommended to be improved with help of DRINKADRIA outputs [1, 34, 35].

This chapter provides brief outline of all main elements in the contract.

4.1. Preamble

This is basic chapter that includes legislative alignment, statement and objectives, definition, interpretations and preceding contracts. Definitions are specified. Preceding contracts validity and invalidity is also defined.

4.2. Obligation

Here are listed obligations of supplier and of recipient. Joint obligations are also a very important topic that needs to be outlined.

4.3. Duration

Following topics are very important to be set: (1) Commencement, (2) period, (3) review, (4) extension and (5) termination. When talking about Termination, following fields should be discussed: (a) legitimate reason for termination, (b) prohibited reasons for termination, (c) termination date and (d) termination process. It is important to point out that after termination date any debt should still be compensated.

4.4. Current data and projections

Here are specified general rules regarding demand (forecasted expected water quantity demand) and nominal capacity that should be reported to other party in case of considerable modification. Annual reports are extremely advisable.

4.5. Type of water supply

Here are described two most commonly defined types: permanent and temporary (seasonal, urgent etc.) water supply.

4.6. Water supply standards

This is one of most important chapters based on discussions with water utility managers. Matters that need to be discussed and defined are following: (1) quantity of water, (2) water source quantity permit limit, (3) limited water supply, (4) water quality, (5) flow rate, (6) flow velocity rate, (7) pipeline diameter and (8) water pressure. Thresholds ensure reliable operation of cross border supply without harming the water supply systems. Some topics may be covered with national legislation (water quality, flow velocity, etc.). In that case it is necessary to check if the national legislations in both countries are coherent.

4.7. System operating standards

Several rules on performance are discussed here: (1) monitoring, (2) normal maintenance and repairs, (3) unexpected failures and leaks, (4) emergency, (5) urgent supply, (6) drought, (7) water losses together with (8) general rules on ownership, operation and maintenance of the system. Partners have reported that in Adriatic region is especially important to include article regarding drought.

4.8. Delivery point

Delivery point is installation point on the border between supplier and recipient. Water utility managers in DRINKADRIA project have stated that this is very important issue to discus and settle. Several issues need to be defined here: (1) general (only water meter or also other installations), (2) location, (3) ownership operation and maintenance and (4) access.

4.9. Water meter

Water meters are very important object (measurements need to be accurate and reliable) and several things need to be defined: (1) general (definition, ownership, installation, testing and calibration etc.), (2) accuracy thresholds, (3) maintenance, (4) testing and calibration, (5) water meter replacement, (6) inaccurate and not measured quantities and (7) reading. Good working water meter ensures that parties can trust each other about metered volumes of water.

4.10. Regular charges and payment

Regular charges are charged and payed every accounting period. A detailed methodology should also be defined for calculation of regular charges. Following sub-chapters are proposed: (1) types and amounts of regular charges, (2) methodology on defining charges, (3) regular charges and withdrawn quantity, (4) closing balance accounting, (5) projections, (6) accounting period, (7) issue of invoice, (8) deadline to pay invoice, (9) late payment, (10) special payment arrangements, (11) currency exchange rate, (12) method of payment, (13) data on invoice and (14) recipient query for incorrect invoice.

4.11. Irregular charges and payments

Irregular charges and payments cover costs which are no included in calculation of regular charges as defined in provided methodology.

4.12. Penalties

Three types of penalties are researched here: (1) minor breach penalty, (2) unauthorised excessive withdraw of water penalty (in case that recipient withdraws more water than agreed as annual quantity) and (3) material breach penalty.

Chapter Minor Breach penalty should cover happens when supply and/or recipient do not hold up to their part of the bargain.

4.13. Breach

Firstly, there is a definition of what is not a breach. Secondly and thirdly there are sub-chapters about the contents of minor and material breach.

4.14. Risk management

Risk management is very important and addresses rules on: (1) deduction of water supply, (2) insurance, (3) guarantees and (4) damage caused between parties.

4.15. Vis major

Definition of different vis major events is presented in first chapter. Following chapters cover: suspension of obligations, remedy of an event of vis major, mitigation and unavoidable contract termination.

4.16. Dispute resolution

Chapter of dispute resolution is very important in case of conflict between involved parties. several topics are covered: (1) general (parties agree that they will deal with dispute accordingly to this article), (2) when dispute arises, (3) negotiations, (4) mediation, (5) arbitration and (6) court of jurisdiction.

4.17. Record keeping and information access

Both parties should determine how record keeping should be done and information access should be handled. It also ensures that both parties achieve data and recipient has access to information related CB water supply.

4.18. Contact information, communication, notice and meetings

This chapter describes which contact information should be obligatory and other things that should also be coordinated between the two parties (communication and notices in accordance with protocol and meetings).

4.19. Public relations

Two things must be discussed here: (1) communication with end customer and (2) confidentiality.

4.20. Construction

This article is needed in case that new (or existing in large extent) cross border water supply needs construction works or significant installation of instruments or maintenance

works. If it is more appropriate, parties should omit this article and sign separate contract which affects only constructions works. When talking about construction there are some general topics that must be considered: (1) planning, (2) design, (3) construction and (4) timeline of construction.

4.21. General

This chapter covers several different topics: (1) regulatory approval, (2) legal authority, (3) legislative and regulatory changes, (4) relationship between parties, (5) supremacy of this contract, (6) contract binding on successors in tile, (7) counterparts, (8) governing law, (9) sub-contracting and (10) liability of expenses.

4.22. Protocols

Protocols define more detailed regulations regarding management and performance of CB WSS. Additional drawings and maps should be provided in appendices.

4.23. Appendices

Recommended appendices for CB WSS are: (1) map of delivery point and all instruments, (2) water quality protocol/thresholds, (3) price model, (4) drafts of forms (invoice, monthly registered water volume, testing and maintenance results – water meter, monitoring results of water quality, notice draft, forecast expected water quantity demand and forecast expected nominal capacity) and (5) map/scheme of CB WSS.

4.24. Signature and approval

Formal information regarding document is defined in this chapter: (1) contract number of supplier/recipient, (2) on behalf of supplier and recipient, (3) signature for supplier and recipient, (4) approval of contract for supplier and recipient, (5) date of signature and (6) location of signature.

5. Challenge: Development of Pricing model for fair price of water for CB WSS

The provision of drinking water is characterized by the use of high value assets indicating high capital intensive sector and significant entry barriers (limited competition between the suppliers - natural monopoly). Besides high investment costs the infrastructure is characterized by low mobility since it's constructed for a specific purpose. The technology of water supply exhibits the scale and scope economies [36, 37] over a fairly wide range of output. Additionally, the market of drinking water supply services is characterized by low price elasticity since these services represent basic structural services and substantial economies of scale [38].

In order to achieve maximum social efficiency and minimize dead weight losses the pricing should be at the level of long run marginal cost. Due to the fact that water utilities are usually a natural monopoly and therefore marginal costs are lower than average costs, such pricing would lead to a unit price that is below average costs and utility will not generate enough funds to cover all costs. Economic theory developed several second best solutions to overcome this problem and advocates the use of subsidies and taxation as a form of lump sum transfer to make up the loss [39]. Coase [40] criticised this approach as he considered subsidies to be distortionary and proposed the use of two part tariff: fixed charge covering the cost of network connection and a volumetric charge set at the marginal cost of supply. Fixed charge should be set at the level to finance the fixed costs, i.e. difference between average and marginal costs. This approach is applied in several countries around the world although there are variations in defining relevant marginal costs. AWWA [41] pointed out that marginal cost estimation represents a forward-looking process which includes forecasting future costs and use with marginal cost of water varying with time (peak versus off-peak demand) and location (consumers located at different points of the serviced area). The calculation of marginal costs includes forecasting operating costs, capacity costs and demand in future time periods. Water rates, which are based on marginal costs, are forward-looking and reflect future costs to be incurred or avoided in supplying water [41]. In the case of cross-border (bulk water supply), the supply is agreed and represents a part of the system of the public water supply and cannot be regarded as the sale of excess or surplus amounts of water. The use of marginal cost approach requires the definition and estimation of the cost function based on several assumptions.

Several empirical studies analysed pricing policies in different countries around the world. Two thirds of municipals in Canada use constant charges (combination of connection fee and constant marginal price) and declining block-rate pricing structure being more common for non-residential customers. Also Renzetti [42] analysed municipal water supply and sewage treatment facilities in Ontario, Canada, in nineties and found out that prices for residential and commercial users covered only one-third and one-sixth of the estimated marginal costs of service providers, respectively. This situation encourages excessive consumption on the part of households and businesses and overinvestment in water supply facilities. While, on the one hand, it would be necessary to adjust prices of water to cover the marginal costs of supply, the major constraint is the absence of water meters in

municipalities that experience high growth of population [42]. In this chapter we outline a simple model for calculating the “fair” price for cross border water supply (CBWS) based on experience of project partners from different countries within DrinkAdria project [34]. Within public water supply the costs of the operation of entire system are usually averaged. The CBWS price comparison based on actual data for five cross border deliveries gathered within DrinkAdria poject, reveals different price structures between public utilities companies for different types of users (national vs cross border).

In order to enable a fair cost allocation and transparent wholesale rate calculation, a distribution of the costs of the water supply between (national) public water supply for end users and bulk water supply for large users (in this case water utilities) should be made. The important issue in allocation of the costs of bulk water supply (wholesale) is which costs should (could) be allocated to the purchaser of bulk drinking water. As stated by Zieburtz & Staff [43] in wholesale water supply it is important to understand which facilities are needed to provide the service (e.g. certain facilities as transmission line can be built specifically for wholesale user). Thus, the methodology for the wholesale user should take into account the necessary replacement/ repairs of the specific facility in order to enable a more transparent approach. Schematically we could describe the cost allocation with Figure 3.

Primarily the proposed pricing model enables both parties involved in cross-border water supply a better understanding of the cost structure. It also helps understanding CBWS situation, which is in a way unique if compared with national water supply systems and provides a possible path for more accurate and fair division of costs between supplying and receiving party.

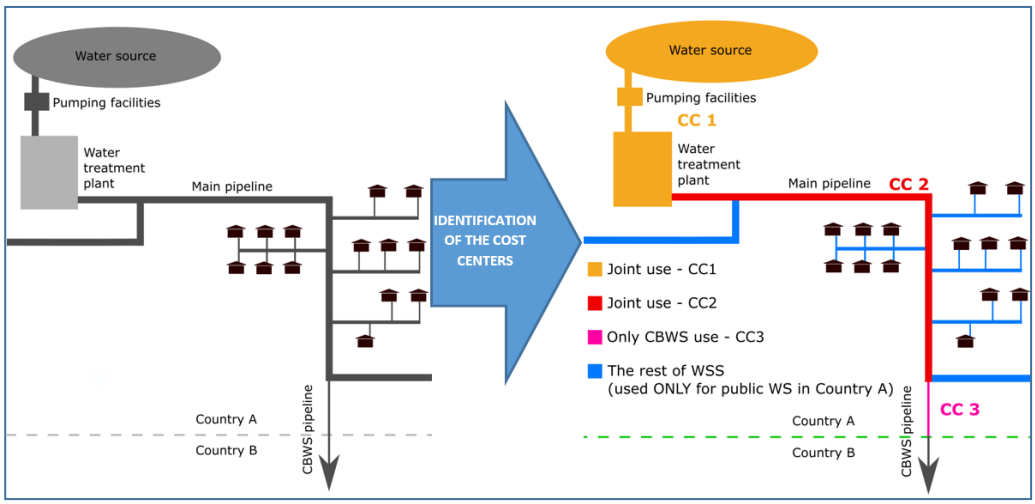

Figure 3: An example of identification of cost centers (CC) [43].

The model uses average cost pricing approach and requires a certain level of decentralised organisation with cost centres[1] as important units. The identification of the cost centres (hereinafter CC) is a necessary requirement (in the case where they are not defined, the best estimate should be used).

First step represents the identification of parts of the main water supply system being involved in the CBWS (Figure 3). Often water utilities manage several water supply systems. Proposed pricing model requires the identification of the specific part of the WSS used for CBWS. In determining the costs of public (national) water supply and CBWS it is important to understand and recognize the facilities that are used for the wholesale water service [43]. Second step requires the identification of the part of WSS that is in »joint use«, i.e. the part which is used to supply both utility's end users and bulk (wholesale) water user (e.g. another water utility), and the part only used to supply bulk water user (or in this case CBWS). Examples of the parts of WSS in joint use could be pumping station, water treatment plant, main water line, etc.) and the examples of parts of WSS only for CBWS could be export water line, water meter, etc.

After all CC of necessary parts of WSS are identified, variable and fixed component should be defined for each cost center (CC). For the part in joint use only a part of total costs should be allocated to CBWS and for this purpose the costs' allocation coefficients need to be used. To acquire a rough estimate of the costs of bulk water supply, we had to divide the costs of the water supply service into the costs for end users (national public water supply users) and the costs of the wholesale of drinking water to a water utility in neighbouring country.

[1] According to Kaplan [53] standard cost center resembles »a production or operating unit in which someone other than the local manager determines the outputs that will be produced as well as the expected inputs required to produce each unit of output.

6. Challenge: Set guidelines for long term CB WS planning

Access to safe drinking water is recognized as a basic human need and a pre-condition for economic and social development at the global level. As a result, more and more countries are considering long term drinking water supply systems planning as a prerequisite for sustainable social and economic development.

Despite that CB drinking water supply systems are not typical in Europe and worldwide, number of them or regional WSS were identified within the scope of DRINKDARIA project. Following problems are common for majority of WSS regardless its size and spatial distribution: losses, aging infrastructure, climate and land use changes, decline of population, chemical or biological contamination, and terrorism. Given the complexity of CB DWSS management, the list of identified issues and constrains is even longer and includes following: no existing/poorly defined legislation that address cross-border/regional DWSS, CB WSS unsettled legal heritage, some parts of CB WSS are not identified, financial problems due to non-payment from customers or legal obstacles (no or poor contracts, validity of contracts, no regulation of payment, no bilateral committees for dispute resolution), no long term planning mechanisms [1, 4, 44–47].

6.1.1. Proposal of Guidelines for long term water supply planning

Guidelines were prepared on basis of DRINKADRIA expert knowledge [35] although that main principles for CB WSS planning are excerpted from literature [48]. Most principles needed to be adopted, since CB/CR WSSs are very specific and complex. Thus, according to relevant stakeholders and decision maker's inputs and current body of knowledge the major principles that would sustain CB/ CR DWSS long term planning within the project area are divided in seven categories.

1. Development of a strategic plan for CB WSSs in Adriatic region

This step has objective to define the goals of stakeholders and decision maker's groups at different level with respect to CB /CR WSS planning and management: European Union, multilateral and bilateral commissions, national, regional, municipal, and utility level. Achievement of efficient stakeholder's management can be made through understanding of their main interests, influences and relationships among them.

2. Identification of all existing and potential CB and CR WSS in Adriatic region

List of all existing CB WSS systems in Adriatic region (until August 2016) is available in Deliverable 5.1 [1] and on http://drinkadria.fgg.uni-lj.si/ [4]. Pilot areas involved in DRINKADRIA project implementation are available on http://drinkadria.fgg.uni-lj.si/pilot-actions/map-of-pilot-areas/ .

3. Assessing CB /CR WSSs technical, managerial and financial capacity in Adriatic region

Important section in CB WSS planning presents assessment of: (1) technical part, (2) managerial part and (3) financial part. Most water utility managers agreed that they have

insufficient funds for implementation of certain tasks, and majority of them complain due to lack of funds for new investments and significant retrofitting.

4. Identifying potential options of CB WSSs in Adriatic region

Good analysis of strengths and weaknesses is very important for establishing new opportunities that are available for CB WSS future plans. Change of future planning should be stimulated by: (1) variation in growth projections, (2) changes in community attitudes, (3) climate and land use changes, (4) changes in technology, etc.

5. Review an evaluation of options for CB WSSs in Adriatic region

Completed analysis usually produces several different scenarios. It is very important that all target groups discuss situation and possibilities that are available to avoid any future disputes and misunderstanding.

6. Implementation options for CB WSSs

Strategic planning takes time and it must include all relevant stakeholders and decision maker's groups for particular WSS. It is essential to underline than any solution selected as the most appropriate requires time to be implement it on all levels.

7. Assessment and evaluation of CB WSS in Adriatic region

Guidelines for long term CB WSS planning is a document that modern water utility managers need to face erratic future. Planning outputs and reports should enable clear communication among all relevant stakeholders' and decision makers' groups that would result in successfully decide on the best way for specific CB WSS operation and maintenance in the future.

7. Conclusion

This report provides a general overview of current situation regarding CB/CR WSS in Adriatic region and emphasizes general aspects and content of technical protocols which are needed for a successful, reliable and high quality level of cross border/region water supply.

The aim of first stage in project was to review the current situation regarding CB/CR WSS in eight partner countries in the project. Partners have reported 47 existing CB/CR WSS. Data was collected and platform [4] was regularly updated until September 2016.

In second stage it was established that contracts which are currently signed in Adriatic region are absolutely too short. Building on this fact a Draft contract was prepared. Proposed draft contract consists of 24 main chapters and 108 sub-articles. A survey about draft contract was made between partners. Three lists were developed: (1) obligatory articles (all involved partners agree that this articles are essential to be included in a good contract), (2) recommended (some partners consider them more important and some consider them less important) and (3) optional articles – inclusion of this articles depends on specifics of every CB/CR WSS [32]. FB 8 prepared a report Analysis on feedback from the utility partners on applicability of protocols [33].

Analysis of prices on several CB WSS was also made. Pricing model was developed that enables to set a rough estimate of fair price. It can be used as a tool to check current prices or as a starting point to define price in negotiation process [34].

It was found that currently no single partner has adopted guidelines for long-term cross-border planning of drinking water. A detailed study was conducted at the international level and report Guidelines for long term CB WS was prepared. Guidelines are available for all interested groups of stakeholders [35].

Several topics were reviewed: history of CB/CR WSS, protocols regarding existing water supply including pricing mechanisms and long term planning. All topics have been covered on limited area (eight partner countries). All method and procedures with tolls can be applied to other countries. During that process specifics of country must be considered and applied in proper extent.

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Annex1: Excel for Draft Contract for CB WSS

Let's grow up together

DRINK ADRIA

Adriatic IPA
Cross Border Cooperation 2007-2013

DR

The project is co-funded by the European Union,

DRAFT CONTRACT

Legend:

	Must be filled out
	Optional

RATES:	Description
1	Undefined / Not well defined
3	OK defined
5	Very well defined

No.	***CONTENTS***	Rate
1	PREAMBLE	
1.1	Legislative alignment	
1.2	Statements and objectives	
1.3	Definitions	
1.4	Interpretation	
1.5	Preceding contracts	
2	OBLIGATIONS	
2.1	Obligations of Supplier	
2.2	Obligations of Recipient	
2.3	Joint obligations	
3	DURATION	
3.1	Commencement	
3.2	Period	
3.3	Review	
3.4	Extension	
3.5	Termination	
4	CURRENT DATA AND PROJECTIONS	
4.1	Demand	
4.2	Nominal capacity	
5	TYPE OF WATER SUPPLY	
5.1	Permanent water supply	
5.2	Temporary water supply	
6	WATER SUPPLY STANDARDS	
6.1	Quantity of water	
6.2	Water source quantity permit limit	
6.3	Limited water supply	
6.4	Water Quality	
6.5	Flow rate	
6.6	Flow velocity rate	
6.7	Pipeline diameter	

6.8	Water pressure	
7	SYSTEM OPERATING STANDARDS	
7.1	Monitoring	
7.2	Normal maintenance and repairs	
7.3	Unexpected failures and leaks	
7.4	Emergency	
7.5	Urgent supply	
7.6	Drought	
7.7	Water losses	
7.8	General rules on ownership, operation and maintenance of the system	
7.9	Active leakage control, Salt intrusion, Water safety plan	
8	DELIVERY POINT	
8.1	General	
8.2	Location	
8.3	Ownership, operation and maintenance	
8.4	Access	
8.5	Rules on Delivery point	
9	WATER METER	
9.1	General	
9.2	Accuracy thresholds	
9.3	Maintenance	
9.4	Testing and calibration	
9.5	Water meter replacement	
9.6	Inaccurate and not measured quantity	
9.7	Reading	
10	REGULAR CHARGES AND PAYMENTS	
10.2	Types and amounts of regular charges	
10.2	Methodology on defining charges	
10.3	Regular charges and withdrawn quantity	
10.4	closing balance accounting	
10.5	Projections	
10.6	Accounting period	
10.7	Issue of invoice	
10.8	Deadline to pay invoice	
10.9	Late payment	

10.10	Special payment arrangements	
10.11	Currency exchange rate	
10.12	Method of payment	
10.13	Data on invoice	
10.14	Recipient query for incorrect invoice	
11	IRREGULAR CHARGES AND PAYMENTS	
12	PENALTIES	
12.1	Minor breach penalty	
12.2	Unauthorised excessive withdraw of water penalty	
12.3	Material breach penalty	
13	BREACH	
13.1	Not a breach	
13.2	Minor breach	
13.3	Material breach	
14	RISK MANAGEMENT	
14.1	Deduction of water supply	
14.2	Insurance	
14.3	Guarantees	
14.4	Damage caused between Parties	
14.5	Water safety plan	
15	VIS MAJOR	
15.1	Event of Vis major	
15.2	Suspension of obligations	
15.3	Remedy of an event of Vis major	
15.4	Mitigation	
15.5	Unavoidable contract termination	
16	DISPUTE RESOLUTION	
16.1	General	
16.2	When dispute arises	
16.3	Negotiations	
16.4	Mediation	
16.5	Arbitration	
16.6	Court of Jurisdiction	
17	RECORD KEEPING AND INFORMATION ACCESS	
17.1	Record keeping	

17.2	Information access	
18	CONTACT INFORMATION, COMMUNICATION, NOTICE AND MEETINGS	
18.1	Contact information	
18.2	Notice and communication	
18.3	Notices in accordance with Protocol	
18.4	Meetings	
19	PUBLIC RELATIONS	
19.1	Communication with end customer	
19.2	Confidentiality	
20	CONSTRUCTION	
20.1	Planning, design and construction	
20.2	Timeline of construction	
20.3	Finances	
21	GENERAL	
21.1	Regulatory approval	
21.2	Legal authority	
21.3	Legislative and regulatory changes	
21.4	Relationship between Parties	
21.5	Supremacy of this Contract	
21.6	Contract binding on successors in title	
21.7	Counterparts	
21.8	Governing law	
21.9	Sub-contracting	
21.10	Liability of expenses	
22	PROTOCOLS	
23	APPENDICES	
24	SIGNATURE AND APPROVAL	

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Instrument for Pre-Accession Assistance

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