ISSN 0352-3551

UNIVERSITY OF LJUBLJANA
FACULTY OF CIVIL AND GEODETIC ENGINEERING

UNIVERZA V LJUBLJANI
FAKULTETA ZA GRADBENIŠTVO IN GEODEZIJO

Acta hydrotechnica 17/24 (1999)

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TOMAŽ UMEK **CELOSTNO GOSPODARJENJE Z VODAMI NA OBALNEM OBMOČJU**

COMPREHENSIVE WATER MANAGEMENT IN THE COASTAL REGION

Published by the Hydraulics Division FGG
Editor-in-Chief : Matjaž Mikoš

Izdaja Hidrotehnična smer FGG
Glavni urednik : Matjaž Mikoš

Acta hydrotechnica **Letnik 17, št. 24, 59 str., Ljubljana, junij 1999**

ISSN 0352-3551 UDK (05) 532;556;626/628.6
Indeksirana v: COBISS, ICONDA
http://ksh.fgg.uni-lj.si/KSH/acta/index.htm

Izdaja Hidrotehnična smer na Fakulteti za gradbeništvo in geodezijo Univerze v Ljubljani ob sofinanciranju Ministrstva za znanost in tehnologijo Republike Slovenije. Objavljeni prispevki izražajo mnenje avtorjev, ne pa vedno tudi mnenja izdajatelja.

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Tisk : Univerzitetna tiskarna v Ljubljani
Naklada : 250 izvodov

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Acta hydrotechnica **Vol. 17, No. 24, 59 p., Ljubljana, June 1999**

ISSN 0352-3551 UDC (05) 532;556;626/628.6
Indexed in: COBISS, ICONDA
http://ksh.fgg.uni-lj.si/KSH_ANG/acta/index.htm

Published by the Hydraulics Division at the Faculty of Civil and Geodetic Engineering, University of Ljubljana, with financial support of the Ministry of Science and Technology of the Republic of Slovenia. Published material expresses the authors' opinion and not necesserily that of the publisher.

Editors : Assist. Prof. Matjaž Mikoš, Dr.sc.techn. - Eitor-in-Chief & in-Charge
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Proof reading of Slovenian text: STAMAT, Ljubljana - Lidija Jesenovec
Proof reading of English text: Prof. Diane O'Connor
Printed by : University Press, Ljubljana
Number of copies : 250

Opinion of the Ministry of Science and Technology of the Republic of Slovenia (letter No. 415-54/91 from December 2, 1992) is that Acta hydrotechnica is one of the products for which 8 % VAT must be paid.

Acta hydrotechnica 17/24 (1999)

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UVODNIK

V tokratni številki Acta hydrotechnica je objavljen razširjeni povzetek magistrskega dela mag. Tomaža Umeka, mladega raziskovalca na Katedri za mehaniko tekočin z laboratorijem Fakultete za gradbeništvo in geodezijo Univerze v Ljubljani, zaposlenega v Uradu za gospodarske javne službe občine Izola.

Mag. Tomaž Umek je končal gimnazijo v Ljubljani. Študij je nadaljeval na Fakulteti za gradbeništvo in geodezijo, Oddelku za gradbeništvo, kjer je leta 1994 diplomiral na hidrotehnični smeri. Po opravljeni diplomi se je zaposlil v podjetju Hidro Koper, kjer je opravljal strokovne naloge v javni vodnogospodarski službi. Istega leta se je vpisal na podiplomski študij gradbeništva - hidrotehnična smer. Novembra 1998 je končal študij z magistrsko nalogo s področja gospodarjenja z vodami.

Kot mladi raziskovalec je bil med študijem vključen v raziskovalno delo Katedre za mehaniko tekočin z laboratorijem. V okviru podiplomskega študija je sodeloval pri strokovnih nalogah s področja gospodarjenja z vodami. V okviru programa Tempus je bil na krajšem strokovnem usposabljanju pri prof. Bendoricchiu v Padovi.

Magistrsko delo mag. Tomaža Umeka je nastajalo kot povzetek študija, naravnanega v spoznavanje sistema gospodarjenja z vodami. Republika Slovenija, kot ena od držav, ki se pripravljajo na vstop v EZ, bo morala v procesu usklajevanja zakonodaje v celoti prevzeti veljavni pravni red EZ, gospodarjenje z vodami pa urediti tako, da bo lahko izpolnjevala obveznosti, ki jih prinaša tudi skupna politika do voda. Zato je bil temeljni namen naloge pripraviti osnutek Vertikalnega poročila za RS, struktura naloge pa v celoti sledi strukturi poročila v projektu EUROWATER. Projekt podpira tudi Evropska komisija, ukvarja pa se z institucionalnimi mehanizmi in strukturami gospodarjenja z vodami v evropskih državah in primerja njihovo učinkovitost glede na zakonodajo Evropske zveze.

Omenjena magistrska naloga podaja pregled trenutnega položaja na področju gospodarjenja z vodami na obalnem območju in v celotni Sloveniji. V prvem delu naloge je obravnavana problematika gospodarjenja z vodami na obalnem območju. Avtor ugotavlja, da je za postavitev ustreznega sistema celostnega gospodarjenja z vodami na obalnem območju nujna zakonodajna ureditev, ki bo uveljavila organiziranost in financiranje sistema gospodarjenja z vodami v celotni Republiki Sloveniji. Ugotovljena je predvsem velika kriza zaradi neurejenosti razmer na področju gospodarjenja z vodami, ki se odraža v neurejenih vprašanjih pri programiranju, načrtovanju, financiranju, organiziranosti, izvajanju in nadzorovanju vodnogospodarske dejavnosti. Posledica takšnih razmer je tudi odliv usposobljenih strokovnjakov v druge dejavnosti.

Vsaka nova zakonska ali podzakonska ureditev bo povzročila dinamično spreminjanje vsebine izdelanega poročila, to pa pomeni, da je izdelana naloga podlaga za nadaljnje neprekinjeno delo pri spremljanju stanja na področju gospodarjenja z vodami. Zavedati se moramo, da izdelava Vertikalnega poročila ni enkratno dejanje. Vertikalno poročilo podaja trenutni položaj in ključne elemente gospodarjenja z vodami, ki pa se z usklajevanjem in spremembami zakonodaje lahko spremenijo. Sprotno dopolnjevanje (predvsem glede na izboljšanje kakovosti poročila) mora postati obvezna naloga ministrstva, pristojnega za področje voda.

Ljubljana, junij 1999 Glavni urednik

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EDITORIAL

This issue of Acta hydrotechnica is publishing an extended summary of a Master's Thesis by Tomaž Umek, a junior researcher in the laboratory of Chair of Fluid Mechanics, Faculty of Civil and Geodetic Engineering (University of Ljubljana), who is now employed in the Office for Public Company Services, Municipality of Izola.

M.Sc. Tomaž Umek completed high school in Ljubljana. After that he studied at the Faculty of Civil and Geodetic Engineering, Department of Civil Engineering, where he graduated in 1994 from the Hydraulic Division. After his studies he was employed at the water management company Hidro Koper, as a hydraulic engineer in the public water management service. In the same year he enrolled in the Master's Program of the Hydraulic Division. In November, 1998 he completed his study with a Master's Thesis in the field of Water Management.

As a junior researcher he was included in the faculty's research team. He participated in expert and professional projects in the field of water management. Within the framework of the Tempus Program, he took short postgraduate courses in Padua (Italy).

This Master's Thesis by Tomaž Umek developed as a complete summary of his studies, which he choose to focus into an understanding of water management. In the process of legislation harmonization, the Republic of Slovenia, as one of the EU Candidate States, will have to adopt the entire Acquis Communitair and organize water management in such a way that it can fulfill the obligations resulting from the common water policy. The basic purpose of this thesis was, therefore, to prepare a draft of the Vertical Report for the Republic of Slovenia and the structure of the thesis fully follows the structure of the EUROWATER Project Report. The project is also supported by the European Commission and it deals with the institutional mechanisms and structures of water management in European countries, comparing their efficiency with regard to European Union legislation.

The thesis offers a temporary overview of the current situation in the water management field in the whole country, with the first part dealing with the issues of water management in the coastal area. It has been noted that the establishment of an adequate integrated system of water management in the coastal area necessarily requires a legislative regulation that would establish an organisation, and the financing of the system of water management in the whole Republic of Slovenia. A great crisis was ascertained, springing from the disorderly conditions in the water management field and reflected in the unsolved issues in the programming, planning, financing, organisation, execution and supervision of water management activities. One of the consequences of such a situation is the loss of experts to other activities and fields.

Each new legal and executive regulation will cause a dynamic change in the content of the created report, meaning that the report is the basis for further ongoing work in the development of conditions in the water management field. We must be aware that writing the Vertical Report is not a unique act. The Vertical Report presents the current situation and the key elements in water management which can change with the harmonization and adoption of legislation. A parallel and complementary work (especially concerning the quality of the report) has to become an obligatory task of the ministry responsible for waters.

Ljubljana, June, 1999 Editor-in-Chief

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TOMAŽ UMEK

mag., univ.dipl.inž.gradb. – M.Sc., Diploma in Civil Eng.
Občina Izola, Urad za gospodarske javne službe –
– Municipality of Izola, Office for Public Company Services
Sončno nabrežje 8, SI - 6310 IZOLA

CELOSTNO GOSPODARJENJE Z VODAMI NA OBALNEM OBMOČJU

razširjeni povzetek magistrskega dela
Fakulteta za gradbeništvo in geodezijo Univerze v Ljubljani
zagovor magistrskega dela je bil opravljen 12. novembra 1998

COMPREHENSIVE WATER MANAGEMENT IN THE COASTAL REGION

extended summary of the Master Thesis
Faculty of Civil and Geodetic Engineering, University of Ljubljana
the defence of the Master Thesis was on 12 November, 1998

© *Acta hydrotechnica* **17/24 (1999)**, 59 p., Ljubljana

IZVLEČEK

Naloga podaja pregled trenutnega stanja na področju gospodarjenja z vodami na obalnem območju in v celotni Republiki Sloveniji. Temeljni cilj naloge je bil priprava osnutka Vertikalnega poročila za RS. Poročilo ima enakovredno strukturo, kot je bila predpisana v projektu EZ (Evropske zveze) EUROWATER, ki se ukvarja z institucionalnimi mehanizmi in s strukturami gospodarjenja z vodami v evropskih državah ter primerja njihovo učinkovitost glede na zakonodajo Evropske zveze. V nalogi je izdelana analiza tistih členov Zakona o vodah iz leta 1981, ki še veljajo. Pri tem je pomembna ugotovitev, da v pričakovanju nove vodne zakonodaje "pozabljamo", da tudi omenjeni členi še veljavnega Zakona o vodah omogočajo vrsto ukrepov. Ker so za celostno gospodarjenje z vodami pomembni tudi drugi zakoni in podzakonski predpisi, je v nalogi prikazano, kako je sistem gospodarjenja z vodami povezan z drugimi sektorji. Tako bi v prihodnje lahko pristopili k načrtovanju gospodarjenja z vodami sistematično in celovito.

Ključne besede: *gospodarjenje z vodami, prostorsko planiranje, zakonodaja*

UDK 556.18:711(094)

ABSTRACT

The thesis gives an account of the current situation in water management in the coastal region and the whole of the Republic of Slovenia. Its basic goal was to prepare a draft for a Vertical Report for the Republic of Slovenia. The structure of the Report is in accord with that prescribed in the EU (European Union) EUROWATER project, which deals with institutional mechanisms and structures for water management in European countries and compares their efficiency and compliance with EU laws. The thesis also includes an analysis of the 1981 Water Act articles still in force. It should be stressed, though, that while the new Water Act is soon expected, we should remember that the articles of the 1981 Act still in force enable us to take various measures. Due to the importance of other laws and executive regulations to integrated water management, the thesis demonstrates how the water management system is linked to other sectors. This would enable water management planning to be approached in a systematic and integrated way in the future.

Key words: *Water Management, Land Use Planning, Legislation*

UDC 556.18:711(094)

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1. UVOD

V zadnjih letih je vodno gospodarstvo v Sloveniji v veliki krizi, predvsem zato, ker so se v zadnjem desetletju drastično zmanjšala sredstva, namenjena za opravljanje dejavnosti v širšem okviru gospodarjenja z vodami. V zadnjih letih so se v proračunu stalno zmanjševala sredstva za vzdrževanje in urejanje vodnega režima. V obdobju 1986 - 1995 je bilo za te namene na voljo v povprečju 0,51 odstotkov bruto družbenega proizvoda (BDP), s tem da so se razpoložljiva sredstva zmanjševala od 0,71 odstotkov na začetku obdobja, na 0,42 odstotkov v letu 1990, pri čemer je bil del teh sredstev že takrat namensko usmerjen v podporo ukrepom, ki so bili kot prioritetni vključeni v državnih planih. V letu 1991 je delež sredstev, namenjenih vodnemu gospodarstvu padel na 0,18 odstotkov BDP, v letih 1992 in 1993 na 0,09 odstotkov BDP, v letu 1994 na 0,08 odstotkov, v letu 1995 pa celo na 0,07 odstotkov DP. Doseženo je bilo kar 6-kratno zmanjšanje potrebnih sredstev. Pred leti je bilo v Sloveniji namenjenih približno 50 odstotkov sredstev glede na primerljive deleže v Evropi, danes pa le še 8,5 odstotkov. Primerjava je narejena glede na delež v družbenem proizvodu, ne pa na realno vložena sredstva zaradi neprimerljive gospodarske rasti (Uprava RS za varstvo narave, 1996).

Posledice tega zmanjšanja se kažejo že tudi v sami organiziranosti na področju gospodarjenja z vodami. Poleg navedenega je nujno potrebno opozoriti tudi na to, da je ob nazadovanju vodnogospodarske dejavnosti zelo hitro propadala tudi stroka in se do danes skoraj sesula. To že lahko in bomo v prihodnje še bolj občutili, saj bo prav njena obnova dolgotrajen proces, ki pa ga ne bo mogoče občutneje skrajšati, ne glede na potrebe in sredstva, ki bi jih bili morda pripravljeni v ta namen zagotoviti.

Zakon o javnih gospodarskih službah (Uradni list RS št. 32/93) ureja problematiko organiziranosti javnih služb le na ravni lokalne skupnosti, ne definira pa organiziranosti integralnega upravljanja na celotnem področju

1. INTRODUCTION

In recent years water management in Slovenia has found itself in a huge financial crisis due to drastic cuts in funding over the last decade. Budgetary means for maintaining and managing the water management system have constantly been reduced. Between 1986-1995 budgetary means averaged around 0.51% of the Gross Domestic Product (GDP), being at 0.71% in 1986 and then falling to 0.42% in 1990. In addition, a part of this funding had already been intended for financing priority measures included in Government plans. In 1991 the share fell to 0.18% of GDP, in 1992 and 1993 it further fell to 0.09%, then to 0.08% in 1994, reaching as little as 0.07% of the GDP in 1995. The budgetary allotment for water management thereby dropped sixfold. Relative to Europe, Slovenia assigned around 50% less of its budgetary means to water management, while this share has now fallen to 8.5%. This comparison has been calculated regarding the share these funds make up of the budget and not the nominal invested funds due to incomparable production growth (The Administration of the Republic of Slovenia for the Protection of Nature, 1996).

The effects of these cuts are regrettably already visible in the organisation of the water management system. The cause for concern is in the fact that this regression of water management activities has also caused a rapid decline in the profession, which today is virtually on its knees. This is and will be felt even more strongly in the future as its restoration will be a long term process regardless of the funds and priorities assigned to it. The Public Companies Act (Official Gazette RS No. 32/93) deals with the organisation of public companies on a local basis only and it does not define the organisation of integrated water management in watersheds, which usually cross the boundaries of local communities. The experts

gospodarjenja z vodami v povodjih, ki v večini primerov segajo preko območij lokalnih skupnosti. Strokovna javnost se tega problema zelo zaveda, zato že nekaj let od države pričakuje, da sprejme ustrezne ukrepe za izboljšanje stanja.

Že v letu 1991 je bila pripravljena Strategija vodnega gospodarstva Slovenije (Steinman et al., 1993), ki pa žal ni doživela politične potrditve. Od države se pričakuje predvsem, da s sprejetjem ustrezne zakonodaje poda zakonske podlage in poskrbi za ustrezno organiziranost gospodarjenja z vodami na državni ravni. Seveda se ob tem pričakuje tudi sistemsko rešitev financiranja na področju gospodarjenja z vodami. S takšnimi izhodišči bo mogoče organizirati gospodarjenje z vodami tudi na lokalnih in regionalnih ravneh (vodnih območjih).

Na regionalni ravni je na področju gospodarjenja z vodami pomemben predvsem konflikt rabe voda. Problemi se lahko uspešno rešujejo na lokalni in regionalni ravni, saj jih podrobneje lahko poznajo le strokovnjaki, ki živijo in delajo v regiji - a celovito, na vodnem območju. Pričakuje se tudi, da se na lokalni in regionalni ravni izdelujejo analize omenjenih konfliktov rabe in predlagajo rešitve na ustreznih strokovnih podlagah. Potem pa naj organ odločanja, ustanovljen z ustrezno zakonsko podlago, sprejme načrt gospodarjenja z vodami (Umek, Banovec, 1998).

Omeniti moramo tudi problem, s katerim se srečamo pri obravnavanju problematike gospodarjenja z vodami; to so terminološke težave oz. težave z izrazoslovjem. Tega so se zavedali že pripravljavci Strategije vodnega gospodarstva (Steinman et al., 1993), zato so strategiji dodali tudi "delovni osnutek glosarja strokovnih pojmov". In kako so opisali pojem GOSPODARJENJA Z VODAMI:

"Gospodarjenje z vodami je vrednostna opredelitev, ki izhaja iz temeljnega postulata, da so vode obnovljiva, vendar omejena naravna dobrina, s katero moramo ravnati smotrno. V ožjem smislu besede pomeni gospodarjenje doseganje ciljev, s čim manjšimi stroški oziroma doseganje najboljših rezultatov z danim obsegom sredstev."

Med pripravljanjem nove zakonodaje o vodah bo treba razrešiti tudi težave z

in the field are aware of the issue and have been expecting the state to take appropriate measures for quite some years.

A Strategy for the water management in Slovenia was prepared as early as 1991 (Steinman et al., 1993), but was unfortunately not ratified. The state is expected to adopt appropriate legislation and thereby establish a legal basis and provide a proper organisational structure for water management on the state level. The state is also expected to regulate finances in the field of water management. All this should enable the organisation of water management on local and regional levels (water areas).

On the regional level of water management, the most significant conflicts concern the usage of water. Such problems can be successfully dealt with on a local and regional level with the insight of local experts, but integrally in the water area. Analysis of the above mentioned conflicts should be made either locally or regionally and suitable solutions based on expert opinions should be proposed. Following those proposals a decision-making body set up on a legal basis should approve a scheme for water management (Umek, Banovec, 1998).

Another problem that we face while dealing with water management is the lack of suitable terminology. The authors of the Strategy for Water Management (Steinman et al., 1993) were aware of that, so they added a "working draft of a glossary of technical terms". This is how they described the term WATER MANAGEMENT:

"Water management is a value definition which originates from the basic postulate that waters are a renewable but limited natural resource which has to be dealt with appropriately. In its narrow sense, management indicates reaching goals as economically as possible or achieving the most with the given means."

The terminology problems concerning water management will also have to be dealt with during the formulation of legislation. The

izrazoslovjem, ki se nanaša na gospodarjenje z vodami. Terminološki slovar naj v celoti vsebuje tudi izraze, ki so vsebovani v dokumentih EZ. Tako se bomo izognili nesporazumom glede ustreznega prevajanja posameznih direktiv in ugotavljanja skladnosti naše zakonodaje z evropsko.

2. GOSPODARJENJE Z VODAMI V EZ

Problema oblikovanja ustrezne politike do voda in gospodarjenja z vodami se je začela zavedati tudi Evropska zveza (EZ), ki je pristopila k reševanju tega problema. Pokazala se je namreč potreba po uskladitvi zakonodaje in predpisov na področju gospodarjenja z vodami.

Glede na ugotovljeno različnost je pet držav članic EZ (Francija, Nizozemska, Velika Britanija, Nemčija, Portugalska) v letu 1993 pričelo z obsežnim projektom, katerega temeljni cilj je bil izdelava pregleda institucionalnih - organizacijskih okvirjev za gospodarjenje z vodami tako v preteklosti, kot tudi v prihodnosti, hkrati pa ugotavljanje možnosti za usklajeno politiko do voda na področju držav članic (Correia, 1997).

Projekt je obsegal dva pristopa obravnave problematike gospodarjenja z vodami: *Vertikalno poročilo*, ki se nanaša na interne zadeve držav, in *Horizontalna poročila*, ki primerjajo ureditve za posamezna področja gospodarjenja z vodami med državami .

Glavne cilje projekta bi lahko povzeli v naslednjih točkah (Correia, 1997):

1. opis razvoja institucionalnih okvirjev gospodarjenja z vodami v petih sodelujočih državah v projektu,
2. primerjava nekaterih modelov in ključnih dejavnikov na področju gospodarjenja z vodami in primerjalna ocena uporabljenih ukrepov na kritičnih področjih,
3. upoštevanje možnosti prihodnjega usklajevanja, integralne politike do voda na evropski ravni, z upoštevanjem načela subsidiarnosti,
4. opis informacijskih sistemov v vodnem gospodarstvu s posebnim poudarkom na prekomejni problematiki in ocena vloge EEPA (European Environmental

glossary of technical terms should contain all the terms found in the EU documents. That should prevent misunderstandings while translating EU Directives and ascertaining the harmonisation of Slovene and European legislation.

2. WATER MANAGEMENT IN THE EU

Formulating a suitable policy towards water and water management was put on the EU agenda as the need for harmonising different legislation and regulations became apparent.

Five of the states that comprise the EU (France, the Netherlands, Great Britain, Germany and Portugal) therefore began an extensive project in 1993. Its primary goal was to elaborate a survey of institutional and organisational water management frameworks of the past as well as for the future and to research possibilities for harmonising water policy in Member States (F.N. Correia, 1997).

The project included two approaches to water management issues: the *Vertical Report*, which deals with internal state matters and the *Horizontal Report*, which compares regulations in different countries.

The primary goals can be summed up in the following items (Correia, 1997):

1. A description of the development of institutional water management frameworks in the five countries taking part.
2. A comparison of some models and key factors in the field of water management and a comparative estimation of measures applied to critical areas.
3. Consideration of the possibility of further harmonisation towards an integrated water management policy on a European level, bearing in mind the principle of subsidiary.
4. A description of information systems in the water management, especially stressing international problems and assessing the role of the EEPA (European Environment Protection Agency) in the process of harmonising information systems for water

Protection Agency) v procesu usklajevanja informacijskega sistema za potrebe gospodarjenja z vodami in
5. učinkovitost ekonomskih instrumentov na področju vodne in okoljske politike.

Ker so tudi znotraj EZ različne oblike organiziranosti gospodarjenja z vodami po posameznih državah, so v EZ pričeli z enotnim opisovanjem obstoječega stanja na enotni način Vertikalnega poročila (Vertical report). Osnova za izdelavo poročila je bila predpisana struktura, ki je vsebovala 60 naslovov (tem), ki predstavljajo tudi kazalo Vertikalnega poročila (National Water Authority of Hungary, 1997).

VSEBINA VERTIKALNEGA POROČILA

I. UVOD

II. SPLOŠNA UREDITEV NAČRTOVANJA IN GOSPODARJENJA Z VODAMI
1. Zakonodajna ureditev
2. Institucionalne ureditve (organiziranost)
3. Kulturni, zgodovinski in tehnični vplivi na obstoječi sistem institucij
4. Načrtovanje v vodnem gospodarstvu in družbeni ter gospodarski razvoj
5. Institucije in mehanizmi za povezovanje sektorskih potreb po vodi v celostno načrtovanje in gospodarjenje z vodami
6. Načela in mehanizmi gospodarjenja
7. Usklajevanje in razvijanje raziskav ter izobraževanja na področjih, povezanih z vodami

III. RAZPOLOŽLJIVOST IN (PO)RABA VODE
A) Razpoložljivost voda
8. Hidrološke danosti
9. Stanje kakovosti voda

B) (Po)Rabe voda
10. Ohranjanje ekosistemov
11. Preskrba prebivalstva s pitno vodo
12. Ravnanje s komunalnimi odpadnimi vodami
13. Industrija
14. Kmetijstvo
15. Hidroenergetika
16. Plovba
17. Ribištvo in ribogojstvo
18. Turizem in rekreacija
19. Odlaganje in odvzem plavin
20. Varovanje pred poplavami in izsuševanje zemljišč

C) Uravnoteženost razpoložljivih voda in potreb po vodi
21. Količnik (razmerje) med potrebami po vodi in razpoložljivimi količinami
22. Sektorski količnik (razmerje) rabe vode med kmetijstvom in industrijo
23. Regionalni in sektorski pritiski na vode

management needs.
5. The effectiveness of economic implementations in the field of water and environmental policy.

The Vertical Report, a unified description of the current condition in the field of water management, was implemented due to differences within the EU itself. The basis for the report was a prescribed structure, which consisted of 60 area titles (themes), which also formed the index of the Vertical Report (National Water Authority of Hungary, 1997).

STRUCTURE OF THE COUNTRY REPORTS

I. INTRODUCTION

II. GENERAL FRAMEWORK FOR WATER PLANNING AND MANAGEMENT
1. Legal framework
2. Institutional framework
3. Cultural, historical and technical factors affecting the present institutional system
4. Liaison of water resources planning and social and economic development
5. Institutions and mechanisms for the integration of sectoral water requirements in global water planning and management
6. Economic principles and mechanisms
7. Coordination and development of research and training in the water related areas

III. AVAILABILITY AND USES OF WATER
A) Availability of water
8. Hydrological characterisation
9. Characterisation of water quality

B) Uses of water
10. Ecosystem management
11. Public water supply
12. Public wastewater disposal
13. Industry
14. Agriculture
15. Hydropower
16. Navigation
17. Professional fishing and fish farming
18. Leisure and recreation
19. Dredging and mining
20. Flood control and land drainage

C) Balance of availability and needs
21. Ratio of demand and availability
22. Sectoral ratios of water use in agriculture, energy and industry
23. Regional and sectoral stresses on water

IV. JAVNI IN ZASEBNI DEJAVNIKI IN NJIHOVA VLOGA NA RAZNIH NIVOJIH NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

A) Dejavniki na državnem, regionalnem (vodno območje) in lokalnem nivoju

24. Opis vladnih in nevladnih institucij, ki neposredno sodelujejo pri gospodarjenju z vodami
25. Celostni in sektorski mehanizmi ali institucije pri načrtovanju voda
26. Sodni sistem (pritožbe) in druge oblike reševanja konfliktnih situacij
27. Mehanizmi za osveščanje javnosti in njeno sodelovanje

B) Povezanost z Evropsko zvezo in ostalimi mednarodnimi ustanovami (telesi)

28. Vladne ustanove (agencije), odgovorne za sodelovanje pri določanju mednarodne politike do voda
29. Ustanove (agencije), postopki in problemi pri uveljavljanju in nadzoru mednarodnih sporazumov in EZ smernic
30. Prekomejni problemi na vodah, sporazumi in organi (telesa) sodelovanja
31. Drugi mednarodni sporazumi, pomembni za gospodarjenje z vodami

C) Vloga in sodelovanje nevladnih organizacij in ostalih interesnih skupin

32. Okoljske in potrošniške nevladne organizacije
33. Gospodarska združenja (trgovska, obrtna,…)
34. Strokovna in znanstvena združenja

V. GLAVNE NALOGE NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

A) Določanje politike in vodnogospodarsko načrtovanje

35. Določanje politike
36. Vodnogospodarsko načrtovanje

B) Gospodarjenje z vodami

37. Ohranjanje ekosistemov
38. Hidroenergetika
39. Plovba
40. Turizem in rekreacija
41. Ostale rabe voda na vodotokih in morju

C) Zajem voda in dobava za različne načine rabe

42. Pobuda (iniciativa) in sprejemanje odločitev
43. Financiranje in izvedba (izgradnja)
44. Obratovanje in vzdrževanje
45. Sistem dovoljevanja in nadzor
46. Raziskovanje, razvoj in inovativnost rešitev

D) Zbiranje in čiščenje odpadnih voda različnih porabnikov

47. Pobuda (iniciativa) in sprejemanje odločitev
48. Financiranje in izvedba (izgradnja)
49. Obratovanje in vzdrževanje
50. Sistem dovoljevanja in nadzor
51. Raziskovanje, razvoj in inovativnost rešitev

VI. POMEMBNEJŠI TRENDI PRI NAČRTOVANJU IN GOSPODARJENJU Z VODAMI

52. Glavni trendi porabe voda
53. Nastajajoča politika in zakonodaja
54. Regionalno proti centralnemu

IV. PUBLIC AND PRIVATE ACTORS AND THEIR ROLES AT DIFFERENT LEVELS OF WATER PLANNING AND MANAGEMENT

A) Actors at national, regional and local levels

24. Description of governmental and non-governmental institutions directly contributing to water management
25. Global and sectoral mechanisms or institutions for water planning
26. Judiciary system and other forms of conflict resolution
27. Mechanisms for public awareness and participation

B) Interface with European Community and other international bodies

28. Governmental agencies responsible for participating in the definition of EU policies
29. Agencies, procedures and difficulties in the implementation end enforcement of EU directives
30. Transboundary water problems, agreements and bodies
31. Other international accords relevant to water management

C) Specific roles of NGOs and other interest groups (NGO should be plural but not possessive.)

32. Environmental and consumer NGOs
33. Trade associations
34. Professional and scientific associations

V. MAIN FUNCTIONS IN WATER PLANNING AND MANAGEMENT

A) Policy making and water resources planning

35. Policy making
36. Water resources planning

B) Water resources management

37. Ecosystem management
38. Hydropower
39. Navigation
40. Leisure and recreation
41. Other instream uses of water

C) Water abstractions and supply for various uses

42. Initiative and decision making
43. Financing and building
44. Operating and maintaining
45. Regulation and control
46. Research, development and innovative solutions

D) Wastewater disposal from various uses

47. Initiative and decision making
48. Financing and building
49. Operating and maintaining
50. Regulation and control
51. Research, development and innovative solutions

VI. RELEVANT TRENDS IN WATER PLANNING AND MANAGEMENT

52. Major trends in water use
53. Pending policies and legislation
54. Regional versus central
55. Public versus private

55. Privatno proti javnemu
56. Ostali glavni trendi institucionalnih ureditev
57. Sedanji trendi pri raziskavah in razvoju

VII. SPLOŠNA OCENA INSTITUCIONALNEGA SISTEMA NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

58. Najpomembnejše prednosti obstoječega sistema
59. Najpomembnejše pomanjkljivosti in glavni konflikti obstoječega sistema
60. Skupna ocena

Vertikalno poročilo nam podaja ključne elemente gospodarjenja z vodami, ki so obdelani sistematično in na enakih - primerljivih temeljih. Seveda je bilo pri tem treba dodatno upoštevati posebnosti in zgodovinsko ozadje politike do voda posameznih držav članic.

Na podlagi izdelanih vertikalnih poročil posameznih držav je bilo podrobno obdelanih deset (horizontalnih) področij. Tako so nastala *horizontalna poročila*, ki so ključnega pomena za evropsko politiko do voda in za katere lahko rečemo, da predstavljajo sintezo vertikalnih poročil:

- politika gospodarjenja z vodami v Evropski zvezi,
- povezave med vodno in okoljsko politiko,
- meddržavni in medregionalni problemi pri gospodarjenju z vodnimi viri,
- ekonomski instrumenti gospodarjenja z vodami in mehanizmi financiranja vodnogospodarske infrastrukture,
- gospodarjenje z vodami (na državnem in drugih ravneh),
- načrtovanje in gospodarjenje z vodami v povodjih,
- problematika nadzora onesnaževanja voda,
- vodna zakonodaja v državah EZ,
- razvoj in uporaba politike do voda,
- subsidiarnost - vzajemnost in politika do voda.

Na sliki 1 je prikazana relacija med Vertikalnimi in Horizontalnimi poročili.

56. Other major trends in institutional arrangements
57. Current trends in research and development

VII. GLOBAL APPRAISAL OF THE INSTITUTIONAL SYSTEM FOR WATER PLANNING AND MANAGEMENT

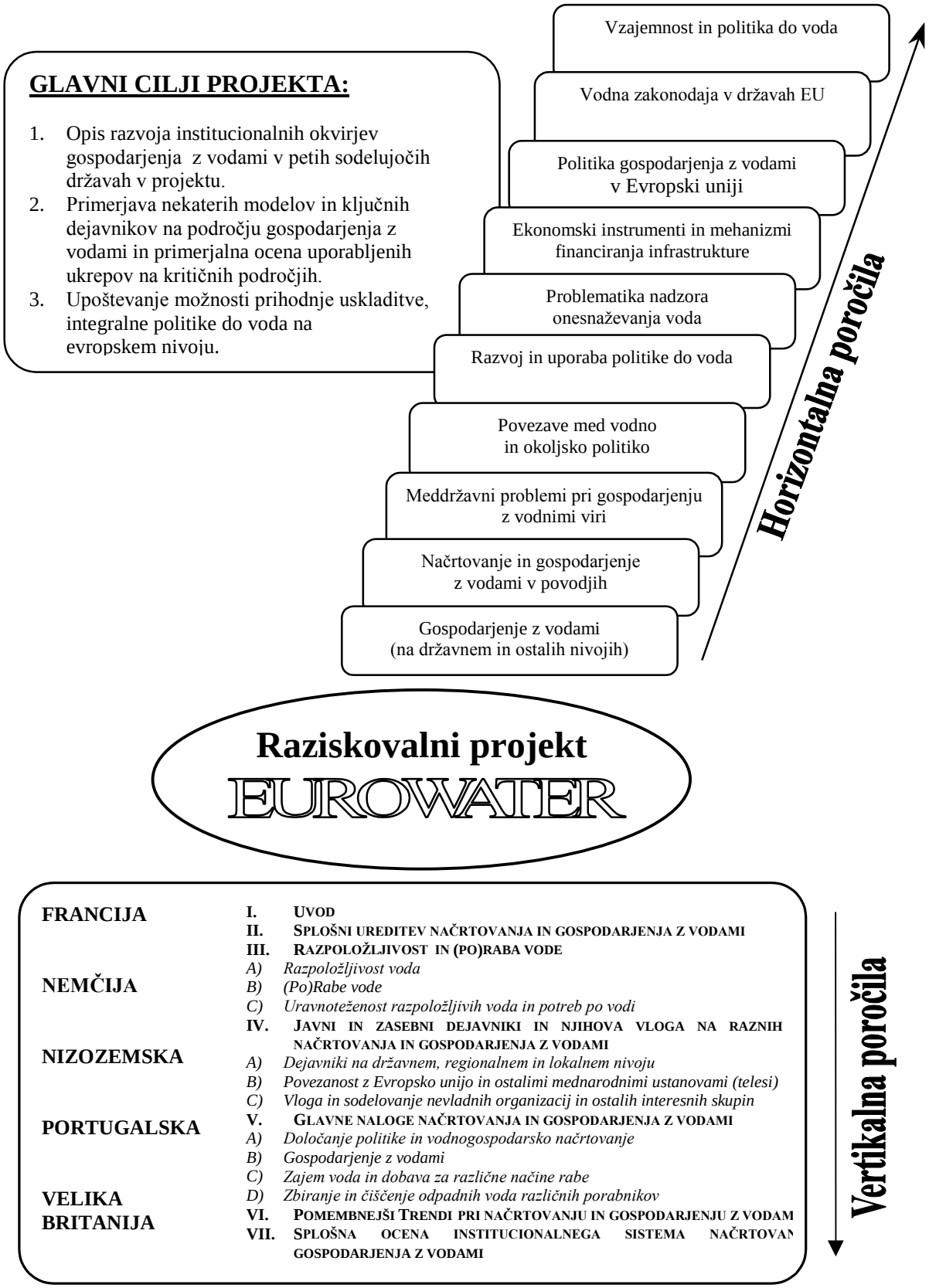
58. Most relevant merits of the existing system
59. Major shortcomings and conflicts of the existing system
60. Overall appraisal

The *Vertical Report* includes key elements of water management treated systematically and comparably and at the same time takes into consideration the peculiarities and historical background of water policies in individual Member States.

On the basis of the Vertical Reports, ten (horizontal) areas were treated in detail. That resulted in the *Horizontal Reports*, which were compiled as a synthesis of Vertical Reports and which embody key positions in European water policy:

- water management policy in the EU
- connections between water and environmental policy
- international and inter-regional problems in managing water resources
- economic implementation in water management and mechanisms for financing the water management infrastructure
- water management (on state and other levels)
- planning and managing water management in watersheds
- the issue of the supervision of water pollution
- water legislation in the EU states
- development and implementation of water policy
- subsidiary - reciprocity and water policy.

Figure 1 shows the relationship between the Vertical and Horizontal Reports.



Slika 1. Povezanost med Vertikalnim in Horizontalnimi poročili (Correia, 1998)

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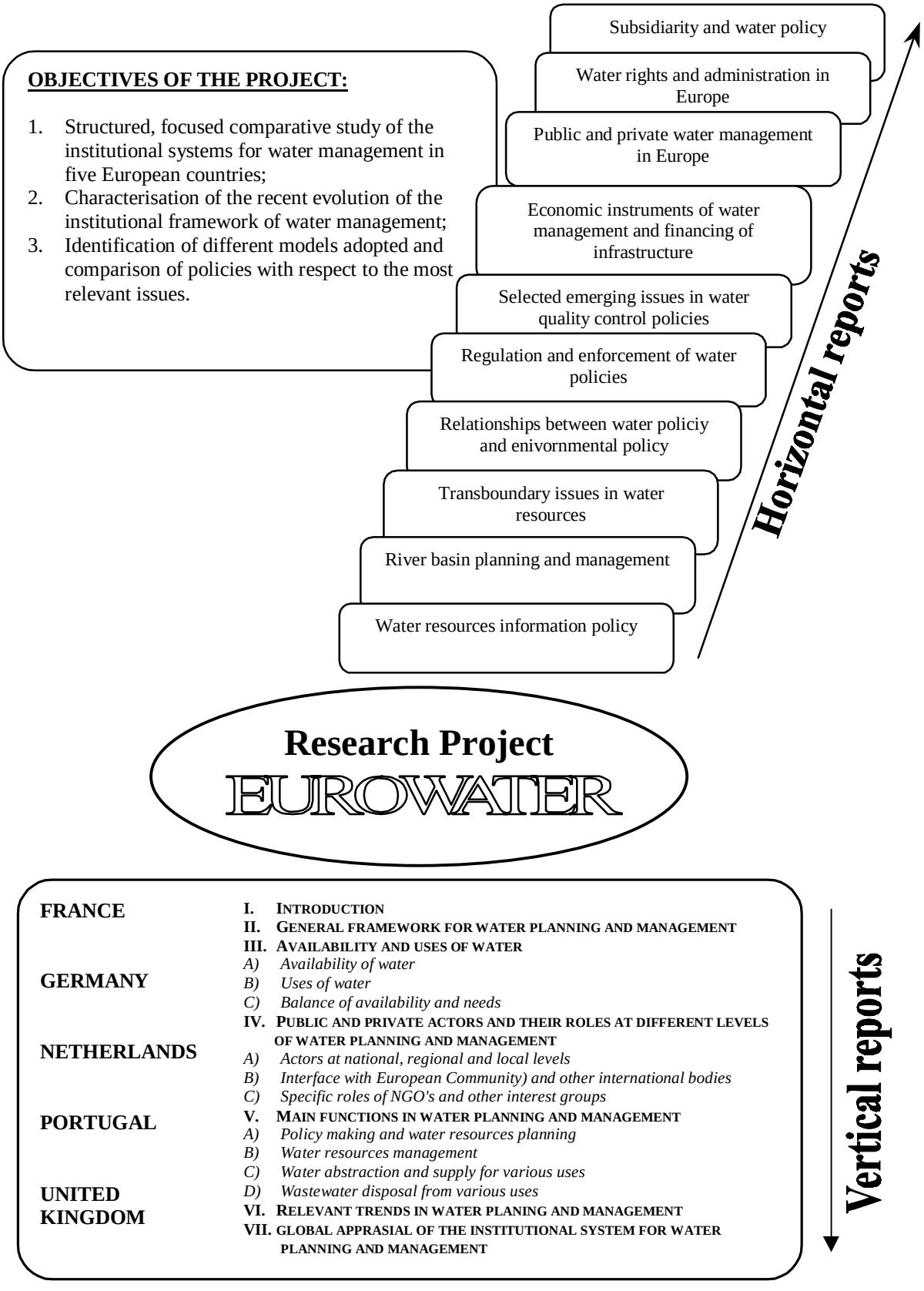
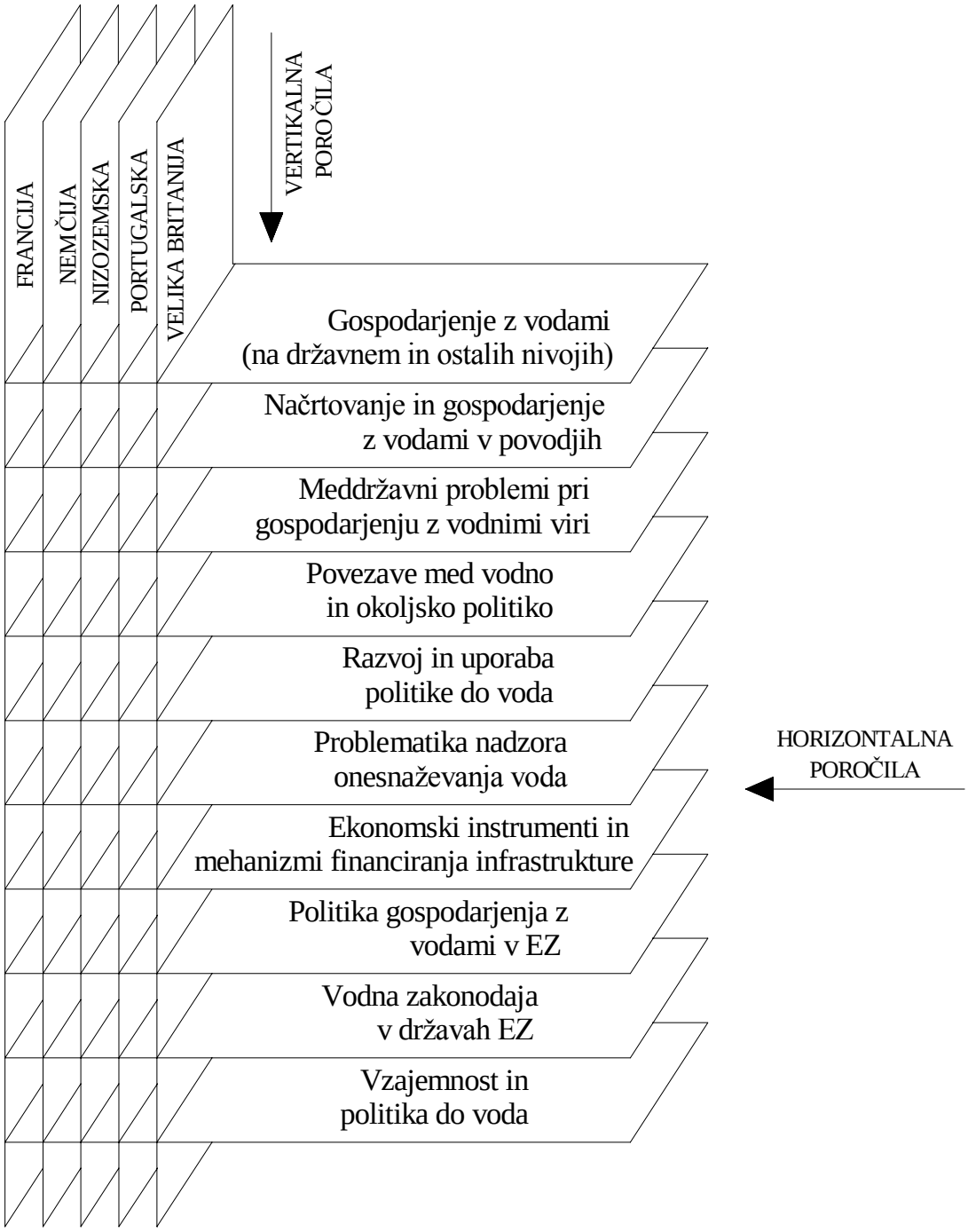


Figure 1. Structure and objectives of EUROWATER research project (Correia 1998).



Slika 2. Tematike, analizirane v Horizontalnih poročilih (Correia, 1998)

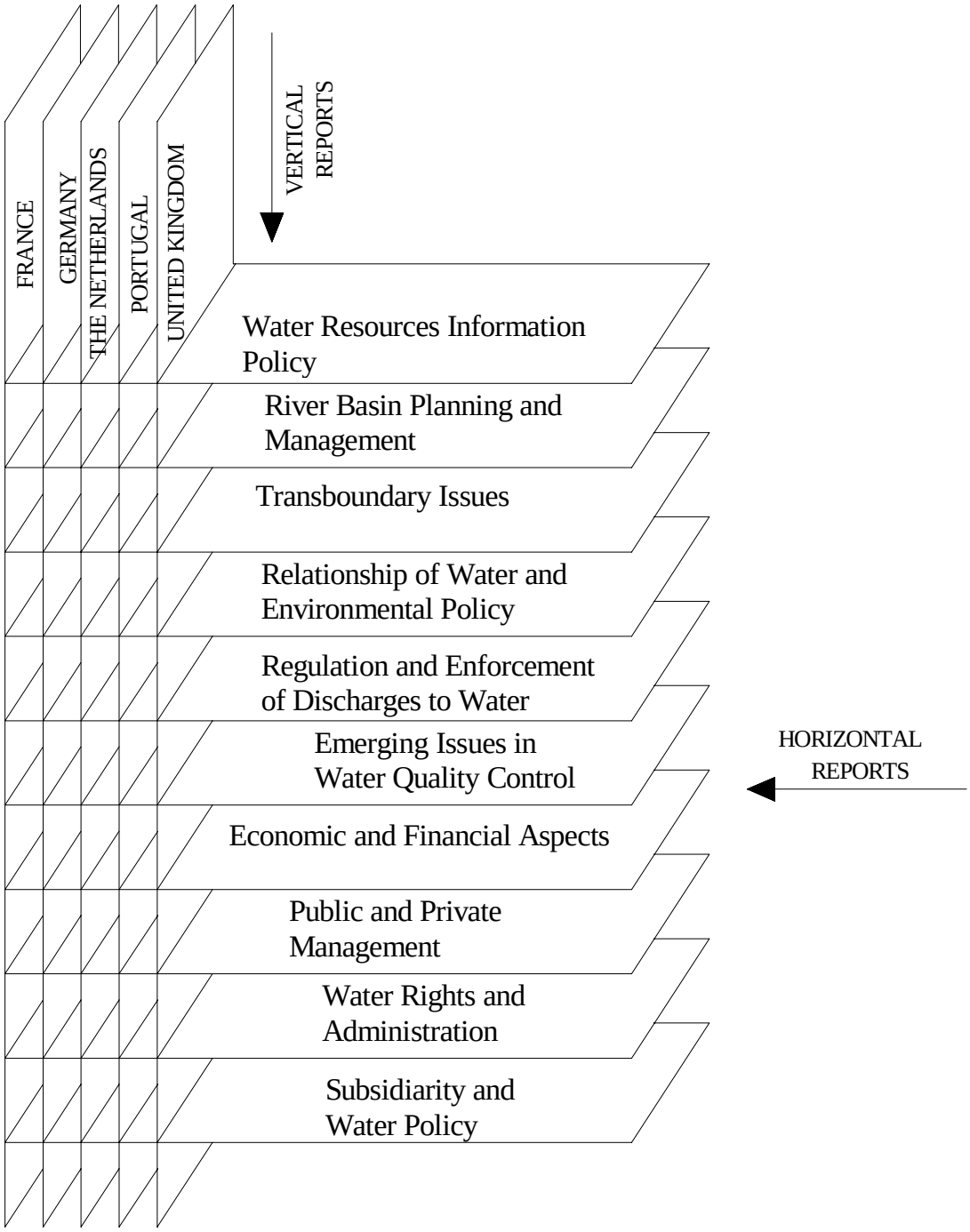


Figure 2. Topics analysed in Horizontal Reports (Correia, 1998).

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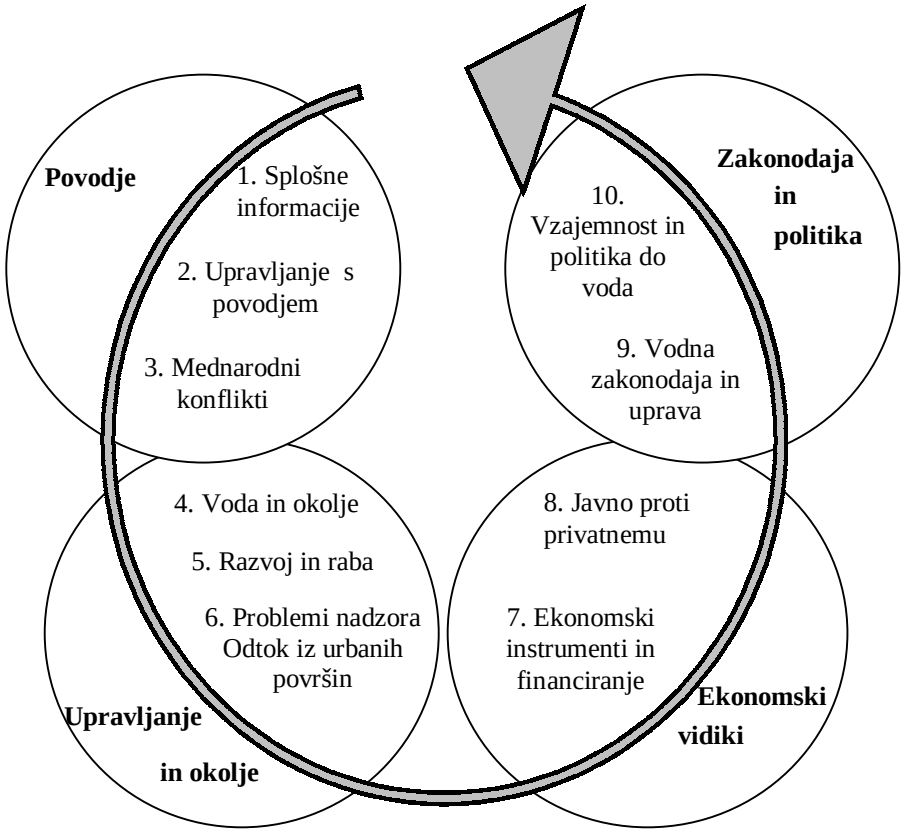

Slika 3. Posamezni sklopi, ki so analizirani v Horizontalnih poročilih (Correia, 1998)

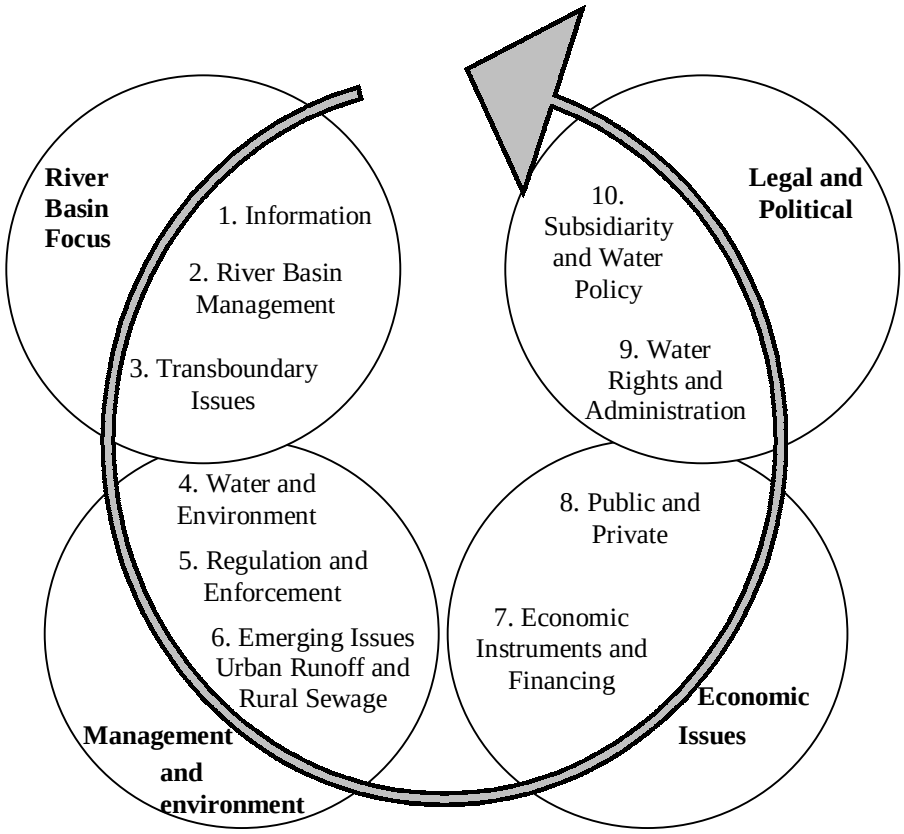

Figure 3. Clusters of the topics of the Horizontal Reports (Correia, 1998).

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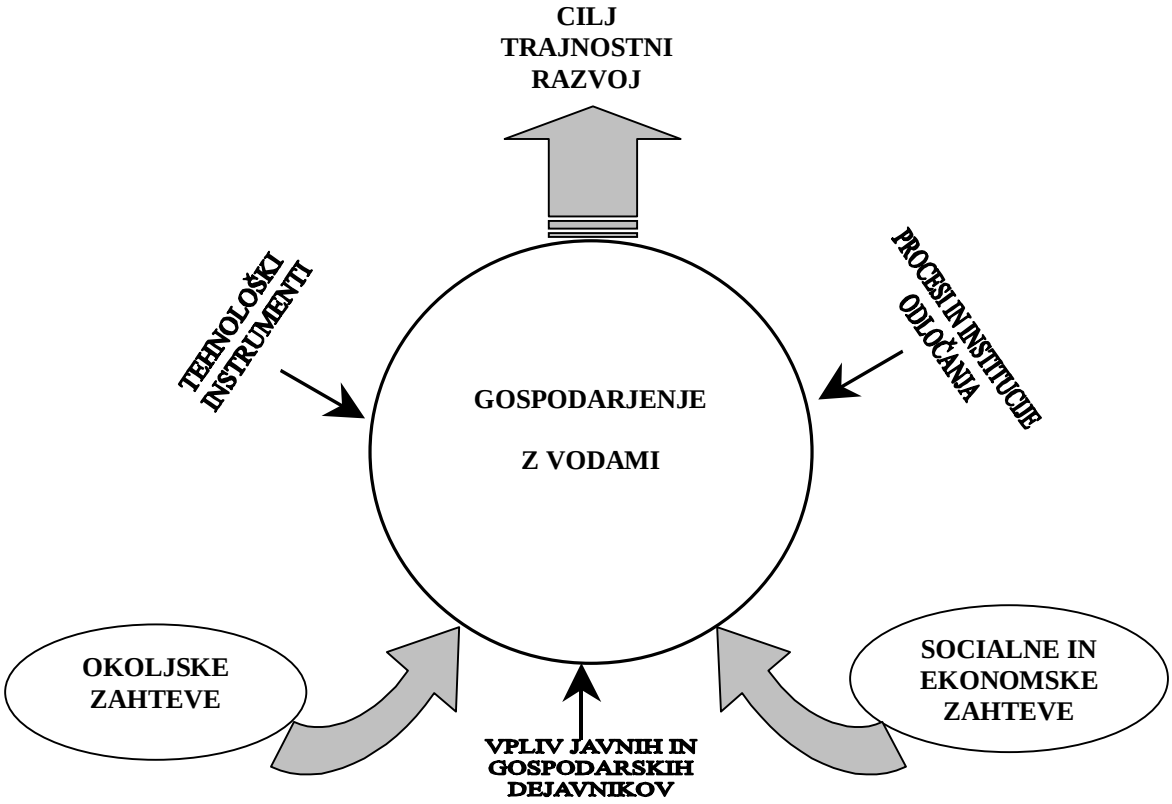


Slika 4. Vpliv zunanjih dejavnikov v procesu doseganja cilja - trajnostnega razvoja (Correia, 1998).

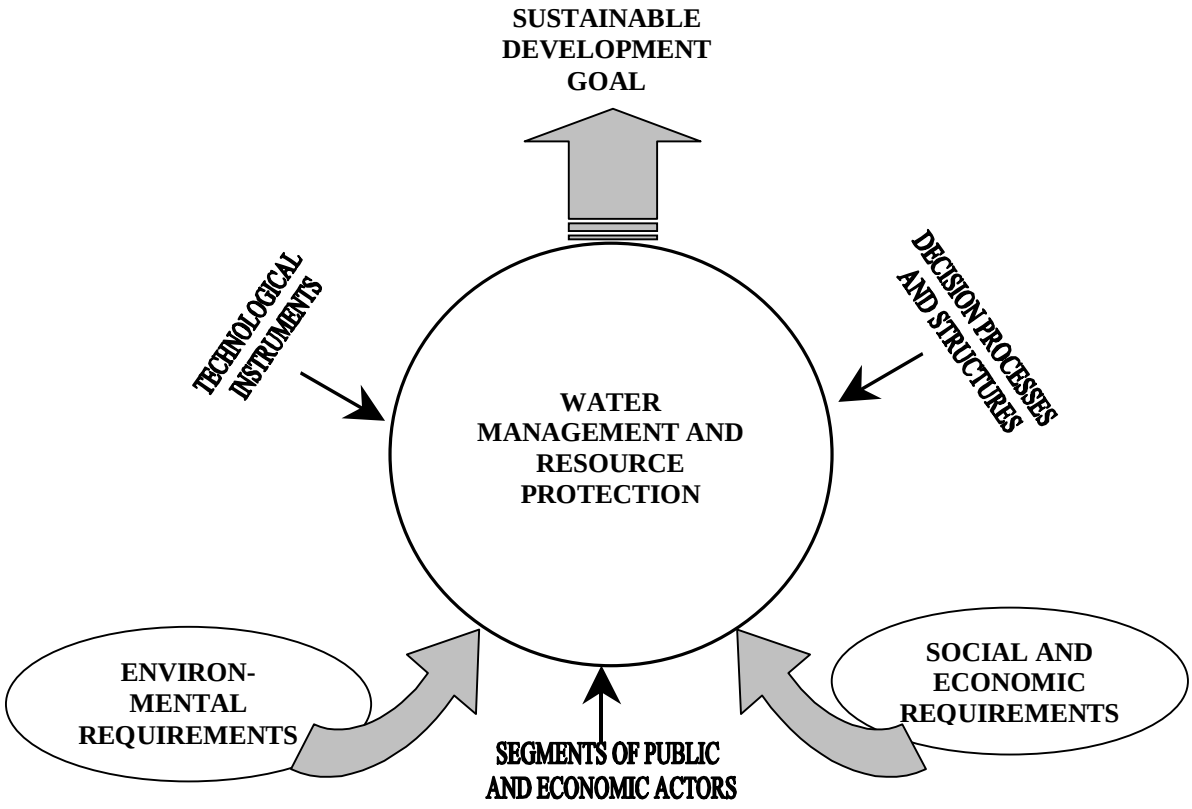


Figure 4. Complexity of water policy and its contextual factors (Correia, 1998).

Tematike, ki jih podrobneje analizirajo horizontalna poročila, bi v grafični obliki lahko predstavili na način, kot ga prikazuje slika 2.

Teme, ki jih analizirajo horizontalna poročila, bi lahko razdelili v štiri glavne sklope. Posamezni sklopi se delijo na področja, ki so v vertikalnih poročilih podrobneje razčlenjena. Celotna obravnavana problematika pa tvori zaključeno celoto, kot je prikazano na sliki 3.

Opisani način strukturiranja, ki so ga uporabljali v izdelanih dokumentih (nastajali so v obdobju 1993-1996) v sodelujočih državah iz EZ, so bila izhodišča za strukturo, uporabljeno v nalogi Koncept gospodarjenja z vodami, ki je bila izdelana na FGG v letu 1997 (Kompare et al., 1997). Ostale vsebine za pregled o (upravni, institucionalni) strukturi gospodarjenja z vodami pa so pri nas obdelane tudi v številnih drugih dokumentih.

V procesu približevanju EZ bo morala tudi Slovenija področje gospodarjenja z vodami predstaviti na način, ki se je v EZ že uveljavil. Izdelava vertikalnega poročila bo podala jasen pregled trenutnega položaja na področju gospodarjenja z vodami pri nas in omogočila primerjavo stanja z drugimi evropskimi državami. Takšno poročilo bo lahko v veliko pomoč tudi pri pisanju nove zakonodaje za področje voda, saj mora ravno Zakon o vodah odgovoriti na večino vprašanj, ki so temelj za izdelavo vertikalnega poročila. To pa pomeni, da predstavlja vertikalno poročilo dobre temelje zakonodaji za področje gospodarjenja z vodami.

Nadaljnji razvoj projekta EUROWATER

V EZ so po analizi izvedenega projekta ugotovili, da je njihov pristop obravnavanja področja gospodarjenja z vodami šele začetek resnega dela. Zato so se odločili, da bo treba izdelati analizo politike do voda (koncepta gospodarjenja z vodami) v sodelujočih državah v projektu. Poudarek naj bi bil predvsem na regijah, sodelujočih - akterjih v procesu gospodarjenja z vodami, definiranju ciljev in pogojih za njihovo doseganje, instrumente - dejavnosti za doseganje ciljev in nazadnje oceno obstoječega koncepta. Eden izmed glavnih ciljev je trajnostni razvoj, ki pa na področju gospodarjenja z vodami ni

Topics minutely analysed in the Horizontal Reports can be graphically presented as shown in Figure 2.

Themes analysed by the Horizontal Reports can be divided into four major groups which are then further divided into areas and analysed in more detail in the Vertical Reports, while all of the discussed issues form an integrated system as shown in Figure 3.

The structuring method used in the above mentioned Reports (made between 1993-1996) formed a starting-point for a research thesis entitled "The Concept of Water Management", completed in 1997 at the Faculty of Civil Engineering and Geodesy in 1997 (Kompare et al., 1997). The rest of the topics concerning (administrative, institutional) water management structure are dealt with in numerous other documents.

Slovenia will have to present the field of water management in a way already established in the EU. Preparing a Vertical Report will give a clear account of the current situation in the field of water management in Slovenia and enable a comparison between itself and other European states. Such a report would also greatly simplify the writing of the new Water Act, as that law, in particular, must answer many questions which form the basis for making the Vertical Report. The Vertical Report thus forms a good basis for legislation in the field of water management.

Future development of the EUROWATER PROJECT

After an analysis of the completed project, the EU realised that their approach to the field of water management is only the beginning and therefore decided that an analysis of the water policy (the concept of water management) in the five collaborating Member States must be made. It would first and foremost stress regions and institutions involved in the process, define the goals and conditions for their attainability, instruments, activities needed to attain goals and a survey of the existing concept. One of the main goals is sustainable development, which is, however, not easily attainable. Such a vision, which

preprosto dosegljiv cilj (npr. uvedba boljših tehnologij ipd.), temveč zahteva nov pristop pri izdelavi politike gospodarjenja z vodami. Celovitost in kompleksnost dejavnikov, ki vplivajo na politiko gospodarjenja z vodami za doseganje trajnostnega razvoja, je prikazana na sliki 4.

V nadaljevanju projekta bodo zato sodelujoče države izdelale naslednja poročila:
- gospodarjenje v povodjih (načrtovanje in gospodarjenje z vodami v povodjih),
- ekonomika voda in vodna industrija ter
- integracija politik in analiza subsidiarnosti.

Na podlagi izkušenj, ki so jih pridobili v projektu, v katerem je sodelovalo pet držav članic EZ, se je Evropska komisija EZ odločila, da s podobnim projektom prične tudi v državah srednje in vzhodne Evrope, ki so kandidatke za vstop v EZ.

Poleg desetih tem, ki jih obravnavajo horizontalna poročila v prvotnem projektu, so v novem projektu predvidene še tri dodatne teme, ki jih morajo obdelati v državah srednje in vzhodne Evrope, in sicer (Eurowater - CEC Hungary, 1997):
- zagotavljanje kakovosti pri gospodarjenju in upravljanju z vodami (uporaba standardov ISO 9000 in ISO 14000 ter drugih instrumentov za zagotavljanje kakovosti),
- gospodarjenje z vodami v kmetijstvu in uskladitev s predpisi EZ.

3. CELOSTNO GOSPODARJENJE Z VODAMI NA OBALNEM OBMOČJU

3.1 UVOD

Poglavje obravnava gospodarjenje z vodami na obalnem območju. Opisane so najpomembnejše ustanove in dejavnosti na področju gospodarjenja z vodami, poseben poudarek pa je namenjen dejavnostim javne vodnogospodarske službe, javnim gospodarskim službam zbiranja in čiščenja odpadnih voda ter preskrbi s pitno vodo. Obravnavana je problematika gospodarjenja z vodami na obalnem območju in dejavnosti, ki

includes e.g. introducing new technologies, requires a new approach to water management policy. The complexity and integrity of the factors that influence the policy of integrated development in the field of water management is shown in Figure 4.

During the continuation of the project the collaborating countries will have to issue the following reports:
- water management in watersheds (planning and managing water in watersheds)
- water economics and the water resources industry
- the integration of policies and the analysis of subsidiary issues.

Based on experience acquired in the Eurowater project involving five Member States, the European Commission decided to initiate a similar project in candidate states of Middle and Eastern Europe.

In addition to the ten existing issues dealt with in the Horizontal Reports, in the original project three additional issues were addressed for the above mentioned countries (Eurowater - CEC Hungary, 1997):
- assuring the quality of water management (using the ISO 9000, ISO 14000 standards and other instruments for assuring quality)
- water management in agriculture
- harmonisation with EU regulations.

3. INTEGRATED WATER MANAGEMENT IN THE COASTAL REGION

3.1 INTRODUCTION

This chapter deals with water management in the coastal region. The most important institutions and activities in the field of water management in the coastal region are described and additional stress is laid on the activities of the public water management service and public services for collecting and treating sewage water and providing drinking water. Issues of water management and activities which contribute to a sustainable

potekajo na obalnem območju za zagotovitev trajnostnega razvoja območja, kjer ima celostno gospodarjenje z vodami pomembno vlogo.

3.2 PREGLED NAJPOMEMBNEJŠIH DEJAVNOSTI GOSPODARJENJA Z VODAMI NA OBALNEM OBMOČJU

V procesih načrtovanja in gospodarjenja z vodami na obalnem območju so posredno ali neposredno vključeni naslednji dejavniki (Umek, 1998):

- nacionalne in regionalne upravne ustanove (Uprava RS za varstvo narave, Uprava RS za pomorstvo,…),
- nacionalne in regionalne javne strokovne institucije (javna vodnogospodarska služba Hidra Koper in Podjetja za urejanje hudournikov, Vodnogospodarski inštitut, …),
- javne gospodarske službe - komunalna podjetja (Komunala Koper, Komunala Izola, Okolje Piran, Rižanski vodovod),
- javne in zasebne gospodarske in negospodarske organizacije (Morska biološka postaja, Medobčinski zavod za varstvo naravne in kulturne dediščine, Zavod za zdravstveno varstvo Koper,…),
- lokalne skupnosti (Mestna občina Koper, občina Izola, občina Piran),
- javnost in nevladne organizacije ter
- potrošniki: organizirani/neorganizirani, javni/zasebni, prebivalci/industrija/ kmetijstvo, itd.

Njihova vloga na različnih ravneh je opredeljena v zakonodaji in je podrobneje opisana v osrednjem delu naloge (Umek, 1998).

Na sliki 5 podajamo pregledno shemo, ki prikazuje porazdelitev funkcij med posameznimi dejavniki v sistemu gospodarjenja z vodami na obalnem območju. Temeljni namen sheme je prikaz, da je sistem gospodarjenja z vodami kompleksen proces, ki zahteva ustrezno organizacijo.

development in the coastal region, where integrated water management plays an important role, are dealt with.

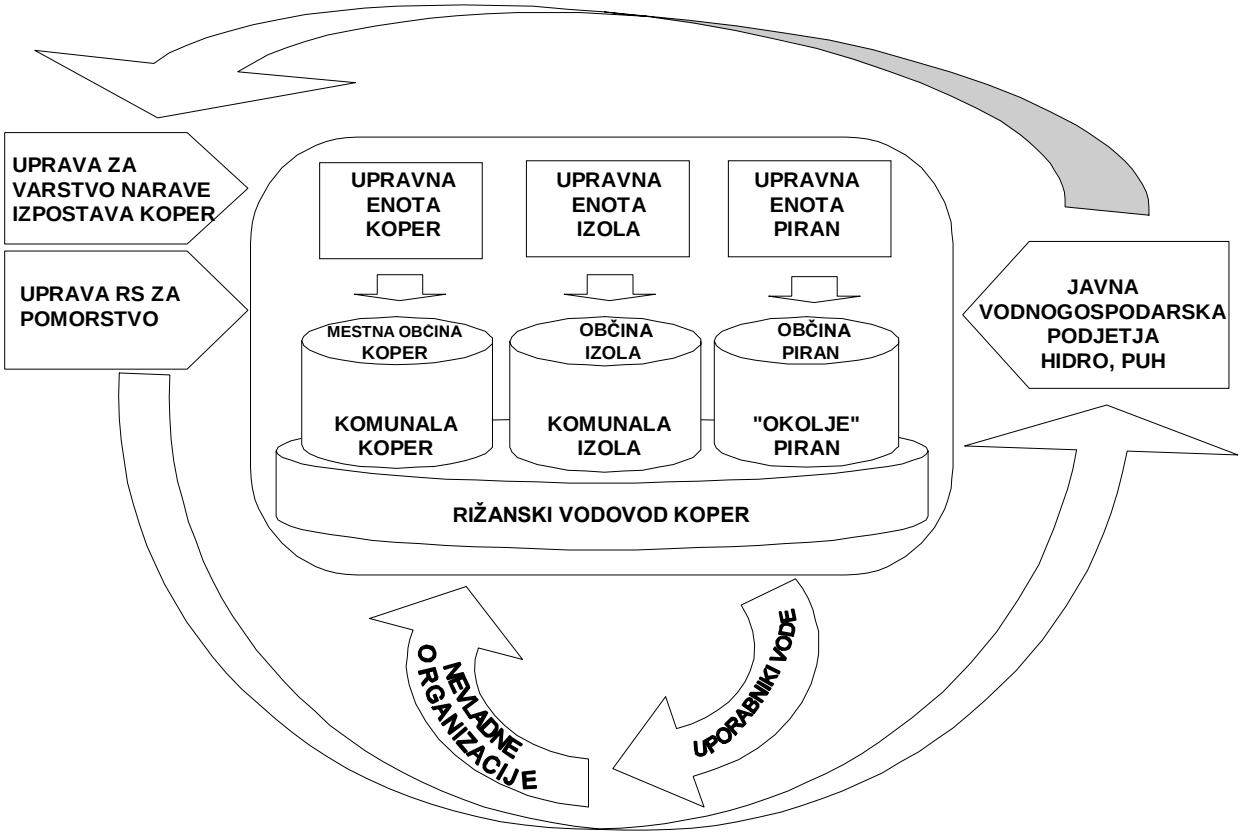
3.2 AN OVERVIEW OF THE MOST IMPORTANT ACTIVITIES IN THE AREA OF WATER MANAGEMENT IN THE COASTAL REGION

Processes of planning and managing waters in the coastal region directly or indirectly include the following factors (Umek, 1998):

- State and regional administrative institutions (The Administration of the Republic of Slovenia for the Protection of Nature, Maritime Transport of the Republic of Slovenia, etc.)
- State and regional public technical institutions (The Hidro Koper - Public Water Management Service, Company for mountain torrents management, The Water Management Institute, etc.)
- Public Company Services - Communal Services (Komunala Koper, Komunala Izola, Okolje Piran, Rižanski vodovod - waterworks)
- other public and private companies and services (The National Institute of Biology, The Inter-municipal Institute for the Protection of Natural and Cultural Heritage, The Institute for Health Protection Koper, etc.)
- municipalities (The City Municipality of Koper, The Municipality of Izola, The Municipality of Piran)
- public and non-governmental organisations
- consumers: organised/non-organised, public /private, inhabitants/industry/agriculture, etc.

Their role on different levels is defined in legislation and described in detail in the central part of the thesis (Umek, 1998).

Figure 5 presents a clear scheme showing the division of functions between individual factors in the field of water management in the coastal region. The basic purpose of the scheme is to show that the system of water management is a complex process demanding suitable organisation.



Slika 5. Dejavniki v sistemu gospodarjenja z vodami na obalnem območju (Umek, 1998)

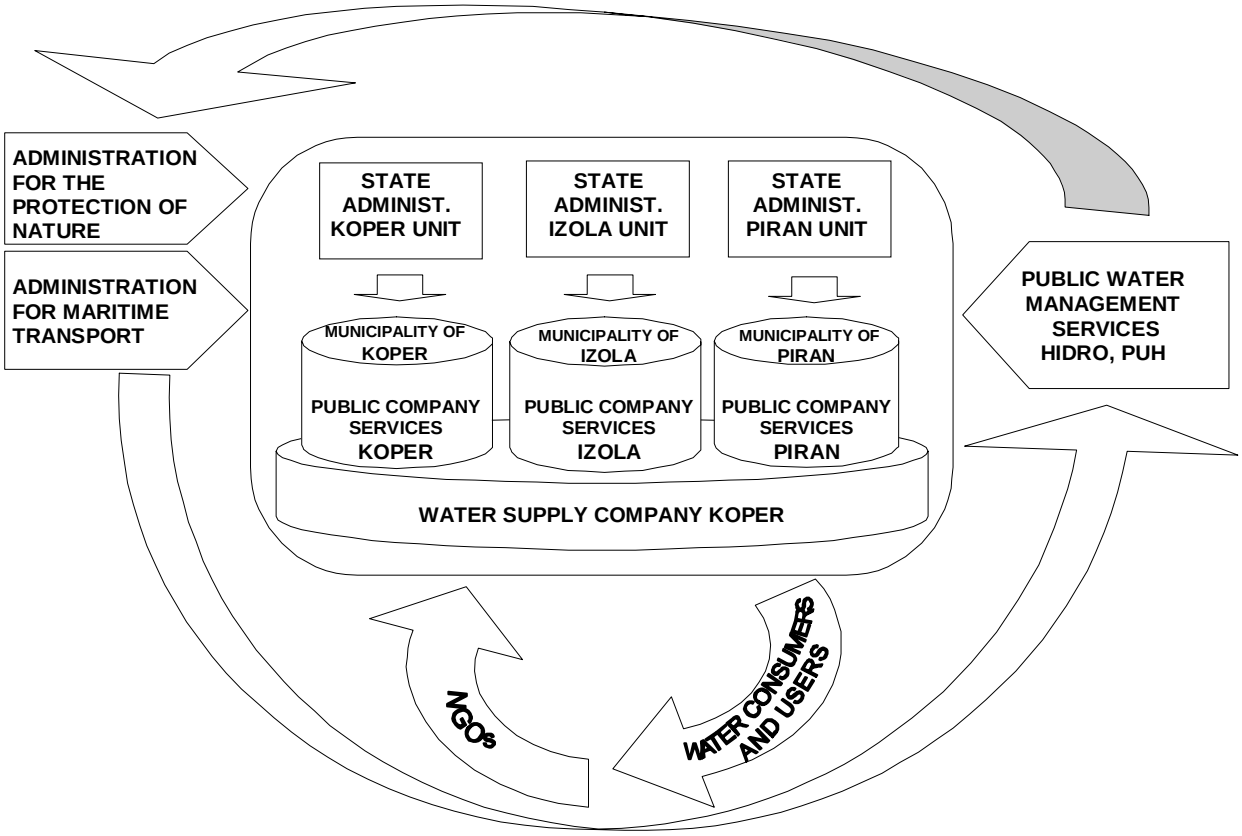


Figure 5. Factors in the water management system of the coastal region (Umek, 1998)

3.3 SPLOŠNA OCENA CELOSTNEGA GOSPODARJENJA Z VODAMI NA OBALNEM OBMOČJU

Stanje na področju celostnega gospodarjenja z vodami na obalnem območju kaže na stanje gospodarjenja z vodami v celotni državi. Analiza gospodarjenja z vodami na obalnem območju kaže, da se veliko dejavnosti na področju gospodarjenja z vodami izvaja nekoordinirano, znotraj občinskih meja oz. z ozkimi interesi za rešitev posameznih problemov.

V okviru projekta "Integralno upravljanje obalnega območja" (H. Carter, 1997) so bili izdelani predlogi strategij za ustreznejše usklajeno delovanje na celotnem obalnem območju. Kot eno izmed možnih rešitev, ki bi na obalnem območju omogočila koordiniran pristop k reševanju problemov na povodjih, je izdelava Načrtov gospodarjenja z vodami v povodjih obalnega območja. Izdelavo takšnih načrtov predvideva tudi novi Zakon o vodah, ki bo moral vsebovati tudi spremembe na institucionalnem področju, predvsem pa bo moral zagotoviti namenska sredstva za dejavnosti gospodarjenja z vodami.

Na obalnem območju bomo morali poseben poudarek nameniti morju, saj se prav na tem področju pojavlja še več interesentov, s tem pa tudi konfliktov, ki nastajajo zaradi neurejenega položaja pri gospodarjenju z obalnim pasom in priobalnim morjem (Umek, 1998).

4. INSTITUCIONALNA UREDITEV VODNEGA GOSPODARSTVA V SLOVENIJI - VERTIKALNO POROČILO

Za uveljavitev ustreznega sistema celostnega gospodarjenja z vodami na obalnem območju je odločilnega pomena tudi organiziranost gospodarjenja z vodami v celotni Republiki Sloveniji (RS). Zato je v drugem delu naloge izdelan pregled institucionalne organiziranosti gospodarjenja z vodami v RS, in sicer v obliki Vertikalnega

3.3 A GENERAL SURVEY OF INTEGRATED WATER MANAGEMENT IN THE COASTAL REGION

The current condition of the integrated water management system in the coastal region is a good indicator of the condition throughout the State. An analysis of integrated water management in the coastal region showed that most of the measures are uncoordinated and implemented within municipality borders and serve narrow interests.

Within the framework of the "Integrated Management in the Coastal Region" project (H. Carter, 1997), proposals for strategies were developed for more appropriate and harmonised activities throughout the coastal region. One of the possible solutions to achieve a more co-ordinated approach to solving problems in water management in the coastal region was to make a Scheme for Water Management in the water systems of the coastal region. The formation of such a scheme is anticipated in the new Waters Act, which will have to include the changes in the institutional field and primarily assure funding for water management activities.

Particular stress in the coastal region must be placed on the sea. This is the area where new conflicting interests between an ever growing number of those concerned arise due to unregulated legislation in managing the coastal belt and coastal waters (Umek, 1998).

4. INSTITUTIONAL FRAMEWORK FOR WATER MANAGEMENT IN SLOVENIA - A VERTICAL REPORT

The decisive factor in implementing a fitting system of integrated water management in the coastal region is the organisation of water management throughout the Republic of Slovenia. The second part of my M.Sc. thesis therefore includes an overview of the institutional organisation of water management in the Republic of Slovenia, which in the form

poročila, ki ima enako strukturo, kot je bila predpisana v projektu EZ *EUROWATER*. Izdelan predlog bo podlaga za izdelavo Vertikalnega poročila za področje gospodarjenja z vodami, ki ga mora Slovenija izdelati v procesu pridruževanja EZ. Povzetek najpomembnejših ugotovitev iz izdelanega predloga (Umek, 1998) podajamo v nadaljevanju.

4.1 SPLOŠNA UREDITEV NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

Oblikovanje, sprejemanje in izvajanje novega slovenskega pravnega sistema po osamosvojitvi še ni končano. V prehodnem obdobju še veljajo vsi nekdanji zakoni, če niso v nasprotju z nastajajočim novim sistemom. Pričakujemo lahko torej, da bo vrsta starih pravnih instrumentov še nekaj časa veljavnih. Pri oblikovanju nove okoljske zakonodaje posveča Slovenija veliko pozornost usklajevanju z zakonodajo Evropske zveze.

Zakon o varstvu okolja iz leta 1993 je bil kot krovni zakon (lex generalis) podlaga za pripravo drugih pravnih instrumentov. Predpise, smernice in standarde naj bi pripravili na različnih ravneh vlade, odvisno od posameznega pravnega instrumenta. Zakonodajni postopek lahko sproži več ustanov, sam postopek pa sistematično nadzoruje vladna služba za zakonodajo. Strokovnjaki za različna področja so lahko vključeni v različne faze procesa. V pripravljalni fazi oblikovanja pravnega instrumenta je koordinacija med različnimi ministrstvi neformalna, na vladni ravni pa pride do koordinacije na vsaj enem od treh vladnih odborov (OZN - Ekonomska komisija za Evropo, 1997).

V zadnjih letih so bili sprejeti različni pravni instrumenti (zakoni, predpisi, smernice, uredbe itd.), ki so povezani z okoljem, nekateri pa še čakajo na obravnavo v državnem zboru. Nanašajo se tako na splošna vprašanja okoljske politike in upravljanja, kakor tudi na

of a Vertical Report has the same structure as prescribed in the EU Eurowater project. The elaborated proposal will form the basis for a Vertical Report on water management, which has to be completed due to Slovenia's approach to the EU. A summary of the most significant findings from the proposal (Umek, 1998) are given below.

4.1 GENERAL FRAMEWORK FOR WATER PLANNING AND MANAGEMENT

Forming, passing and implementing the new Slovenian legislation has still not been completed since achieving independence. Some previous laws, which are not opposed to the emerging new system, are still in force in this transitional period. Due to that, we can expect that a number of old legislative tools will be in force for some time to come. Slovenia is taking great care that the new environmental legislation will be compliant with the EU legislation.

The 1993 the Environmental Protection Act formed a basis for other legislative tools as a *lex generalis*. Prescriptions, guidelines and standards were to be elaborated on different government levels depending on individual legislative tools. Legislative procedure can be triggered by various institutions, while the procedure itself is under the supervision of the Office for Legislation. Experts from various fields can participate in different phases of the process. The co-ordination between various Ministries during the preparatory phase of a legislative tool is informal, but on a governmental level, co-ordination occurs in at least one of the three government committees (UN - Economic Commission for Europe, 1997).

Various legislative tools (laws, regulations, guidelines, decrees) connected with the environment have been adopted during the last few years, while others are still waiting for parliamentary proceedings. They deal with general questions of environmental policy and management, as well as with specific questions connected with land, nature, waters,

specifična vprašanja, povezana s prostorom, naravo, vodami itd.

V nadaljevanju je izdelan pregled zakonodaje na področju voda s kratkim zgodovinskim orisom, opisana je povezanost Zakona o vodah z ostalo zakonodajo ter podan pregled obstoječega sistema izvajanja upravnih funkcij na področju gospodarjenja z vodami.

4.1.1 Zakonodajna ureditev na področju voda

Področje gospodarjenja z vodami, poleg Zakona o vodah in Zakona o varstvu okolja, urejajo tudi drugi zakoni in dokumenti, ki povezujejo posamezne sektorje (resorje) oz. ministrstva.

Okvirje za načrtovanje in gospodarjenje z vodami podaja veljavna zakonodaja in trenutna organiziranost na področju gospodarjenja z vodami. V nadaljevanju so našteti nekateri pomembnejši zakoni (na podlagi katerih so bili izdani številni podzakonski akti):

- Zakon o vodah, Uradni list SRS št. 38/81, 29/86, 15/91 z vsemi podzakonskimi akti (navodili, strokovnimi navodili, uredbami, odloki,…)
- Zakon o varstvu okolja, Uradni list RS št.32/93 z vsemi podzakonskimi akti (uredbe,…)
- Zakon o urejanju prostora, Uradni list SRS št. 18/84
- Zakon o urejanju naselij in drugih posegov v prostor, Uradni list SRS št. 18/84, 37/85, 29/86, 26/90, UL RS št. 71/93, 47/93, 18/93, 44/97
- Zakon o prevzemu državnih funkcij, ki so jih do 31.12.1994 opravljali organi občin (prenos upravnih nalog občinskih organov na upravne enote), Uradni list RS št. 29/95
- Zakon o gospodarskih javnih službah, Uradni list RS št. 32/93
- Zakon o upravi, Uradni list RS št. 67/94
- Zakon o lokalni samoupravi, Uradni list RS št. 72/93 kasneje dopolnitve in spremembe
- Zakon o organizaciji in delovnem področju ministrstev, Uradni list RS št. 71/94

etc.

The next few pages contain a survey of the legislation concerning waters, and include a short historical outline. The connections between the Water Act and other legislation are described and an overview of the existing system of implementing administrative functions in the field of water management is given.

4.1.1 Legislation in the field of water

The field of water management is regulated by the Water Act and the Environmental Protection Act, together with other laws and documents linking individual sectors or ministries.

The current legislation and organisation in the field of water management provide the framework for planning and managing waters. Some of the more important laws, on the basis of which numerous executive regulations have been issued, are listed below.

- Water Act, Official Gazette (OG) of SRS 38/81, 29/86, 15/91, together with all executive legislation (guidelines, directives, decrees, acts)
- Environmental Protection Act, OG 32/93, together with all executive legislation (guidelines, etc.)
- Land Use Planning Act, OG of SRS 18/84
- Urban Planning Act, OG of SRS 18/84, 37/85, 29/86,,26/90; OG 18/93, 47/93, 71/93, 44/97
- Law on the Transfer of Administrative Tasks of Municipal Organs to Administrative Units OG 29/95
- Public Services Act, OG 32/93
- Public Administration Act, OG 67/94
- Local Public Administration Act, OG 72/93, later amended
- Law on the Organisation and Competence of Ministries, OG 71/94

The connection between the Water Act and other legislation can be roughly divided into three groups:

Povezanost Zakona o vodah z ostalo zakonodajo bi v grobem lahko razdelili na tri skupine:

A) ZAŠČITNA (OKOLJSKA) ZAKONODAJA
- Zakon o varstvu okolja (ZVO) in podzakonski akti,
- Zakon o urejanju naselij in drugih posegov v prostor (ZUNDPP),
- Zakon o urejanju prostora (ZoUP), …

B) ZAKONODAJA, VEZANA NA RABO
- Zakon o kmetijskih zemljiščih,
- Zakon o javnih cestah,
- Zakon o sladkovodnem ribištvu,
- Zakon o graditvi objektov, …

C) *ZAKONODAJA, VEZANA NA IZVAJANJE ZAKONOV*
- Ustava RS,
- Poslovnik državnega zbora,
- Zakon o organizaciji in delovnem področju ministrstev,
- Zakon o upravi,
- Zakon o lokalni samoupravi,
- Zakon o gospodarskih javnih službah,
- Zakon o javnih naročilih,
- Proračunski memorandum, …

Kompleks navedene zakonodaje, vezane na gospodarjenje z vodami, je le delno usklajen, kar povzroča precejšnje težave organizaciji in delovanju sistema gospodarjenja z vodami.

4.1.2 Institucionalna ureditev (organiziranost)

Pristojnosti posameznih ministrstev so določene v Zakonu o organizaciji in delovnem področju ministrstev. Zakon določa, da so za pripravo in izvajanje politike, za predpise in ukrepe ter splošni nadzor nad varstvom okolja pristojni Ministrstvo za okolje in prostor - MOP in organi, ki delujejo v okviru tega ministrstva. Za medministrsko koordinacijo ni nikakršnih formalnih zahtev. Zaradi tega prihaja do takšnih poskusov koordinacije spontano, predvsem na pobudo posameznikov (MOP, 1998).

Državna in lokalna raven (občine) sta dve formalno določeni ravni uprave. V državni

A) (ENVIRONMENTAL) PROTECTIVE LEGISLATION
- Environmental Protection Act and Executive Regulations
- Urban Planning Act
- Land Use Planning Act

B) LEGISLATION CONNECTED WITH USAGE
- Farmland Act
- Public Roads Act
- Law on fresh water fishing
- Law on the construction of infrastructure, etc.

C) LEGISLATION BOUND TO THE IMPLEMENTATION OF LAWS
- Constitution of the Republic of Slovenia
- Standing Orders of the Slovene Parliament
- Public Administration Act
- Local Public Administration Act
- Public Services Act
- Law on Public Procurement
- Budgetary Memorandum, etc.

The above mentioned legislation connected to water management has only been partly harmonised, which causes considerable problems to the organisation and functioning of the water management system.

4.1.2 Institutional framework (organisation)

The responsibility of individual ministries is defined by the Organisation and Competence of Ministries Act, which determines that the preparation and execution of the policy, regulations, measures and the general supervision of the protection of the environment is under the competence (responsibility) of the Ministry of the Environment and Physical Planning and the bodies within the ministry. There are no formal demands for inter-ministerial co-ordination. Consequently, attempts at such co-ordination come spontaneously from individuals.

State and municipal levels are two formally defined levels of administration, while a

strukturi javne uprave ni regionalne ravni. Obstaja pa 58 regionalnih upravnih enot, ki povezujejo ministrstva z lokalnimi upravnimi organi. Upravne enote opravljajo nalogo lokalne uprave. Naloga posebnega sveta je zagotavljanje sodelovanja med regionalnimi enotami MOP in lokalnimi skupnostmi. Poleg tega se z različnimi okoljskimi vprašanji ukvarja tudi Uprava za varstvo narave, katere sektor za gospodarjenje z vodami ima osem izpostav (meje območij so enake mejam nekdanjih območnih vodnih skupnosti), po eno za vsako vodno območje; oddelek za naravo pa ima sedem regionalnih uradov, ki opravljajo nalogo tehničnih nadzornih teles na lokalni ravni. Inšpektorat za okolje in prostor je organiziran v več regionalnih podenot s podobnim pravnim statusom: devet uradov za okoljsko inšpekcijo in dvanajst za inšpekcijo na področju prostorskega planiranja.

Pri urejanju in izvajanju lokalnih zadev širšega interesa se lahko občine združujejo v regionalna združenja. Ta predpis se nanaša zlasti na opremo, ki je potrebna za varstvo okolja na regionalni ravni, npr. zbiranje odpadkov in ravnanje z odpadki ter čistilne naprave za odpadno vodo. Porazdelitev funkcij pri gospodarjenju z vodami na državni, "regionalni" in lokalni ravni je prikazana na sliki 6.

Naloge posameznih ministrstev na področju gospodarjenja z vodami so opisane na naslednji sliki 7.

4.1.3 Razvoj sistema institucij na področju gospodarjenja z vodami

Na preglednici 1 podajamo kratek shematski pregled razvoja ustanov na področju gospodarjenja z vodami v Sloveniji od leta 1945 do danes (Colnarič, 1993).

regional level does not exist in the governmental administrative structure. There are, however, 58 regional administrative units, which link the ministries to local administrative organs. Administrative units do the work of local administration. A special council has the task of linking the regional units of the Ministry of the Environment and Physical Planning with local communities. Different environmental issues are dealt with by the Administration of the Republic of Slovenia for the Protection of Nature as well. Its Water Management Office has eight branches (corresponding to the former borders of regional water communities, one for each region), while its Office for the Protection of Nature has seven regional branches working as technical supervisory bodies on a local level. The Inspectorate of the Republic of Slovenia for the Environment and Land Use Planning consists of nine offices for environmental inspection and twelve offices for land use planning inspection with similar legal status.

Municipalities can join forces in regional associations when managing and executing local matters of wider interest. This regulation holds especially for equipment needed for the preservation of the environment on a regional level, such as collecting and handling refuse and maintaining or building waste water treatment plants. The distribution of functions in water management on a state, "regional" and local level is shown in Figure 6.

The tasks of individual ministries in the field of water management are described in Figure 7.

4.1.3 Institutional development in the field of water management

Table 1 presents a short schematic overview of the development of institutions in the field of water management in Slovenia since 1945 (Colnarič, 1993).

Preglednica 1. Kratek shematski pregled razvoja institucij na področju gospodarjenja z vodami v Sloveniji (Umek, 1998).

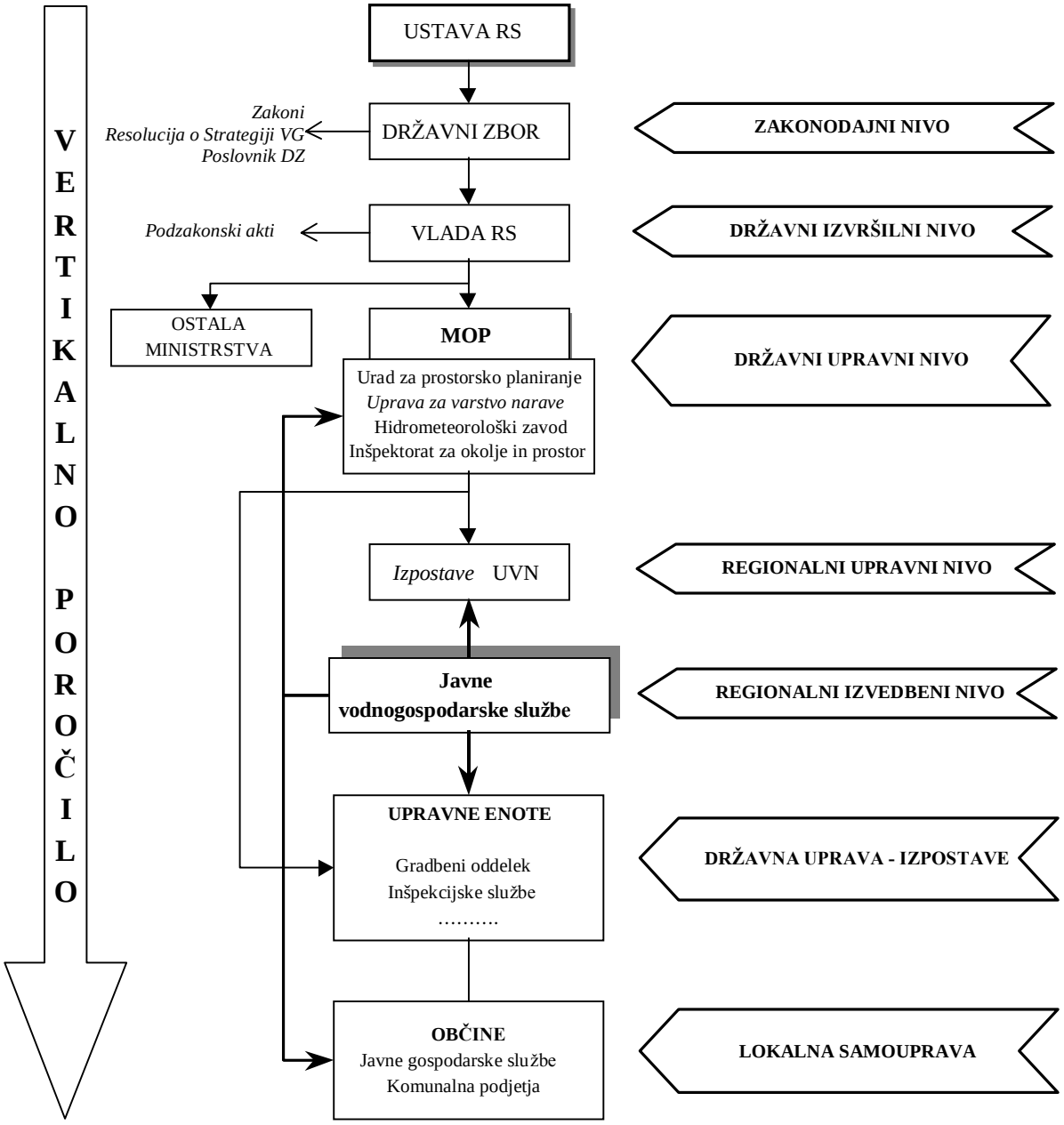
Leto	Institucija ali dogodek	Kratek opis pristojnosti oziroma dogodka
1945	Ministrstvo za gradnje Ljudske republike Slovenije (LRS)	preskrba z vodo, kanalizacija in komunalna hidrotehnika ter obnova podeželja
1947	Ministrstvo za komunalne zadeve LRS	preskrba z vodo, kanalizacija in komunalna hidrotehnika ter obnova podeželja
1947	Ministrstvo za kmetijstvo	melioracije in regulacije rek
1948	Komite za vodno gospodarstvo pri vladi FLRJ	splošno vodenje in skrb za racionalno rabo voda in urejanje vodnega režima
1950	Komite vlade LRS za vodno gospodarstvo	splošno vodenje, koordiniranje in izvajanje nalog na področju vodnega gospodarstva
1951	Republiški strokovni svet za vodno gospodarstvo	vsestransko proučevanje in reševanje strokovnih problemov s področja vodnega gospodarstva
1951	Komite vlade LRS za vodno gospodarstvo	priključena še Uprava za Hidrometeorološko službo in Uprava za regulacije in melioracije (prej pri Ministrstvu za kmetijstvo)
1952	Ustanovitev **VODNIH SKUPNOSTI**	graditev objektov, obratov in naprav za obrambo pred škodljivim delovanjem voda oz. za skupno rabo vode, rekonstrukcije in vzdrževanje objektov
1954	Uprava za vodno gospodarstvo LRS	Uprava postane samostojen republiški upravni organ za zadeve s področja vodnega gospodarstva
1954	Zakon o skladih za urejanje voda	okrajni in mestni skladi, republiški sklad; VIR SREDSTEV: dohodki iz vodnih zemljišč, prispevki uporabnikov voda
1954	Ustanovitev vodnogospodarskih sekcij	šest sekcij, določena delovna področja in naloge posameznih sekcij
1955	Imenovan Strokovni svet Uprave za vodno gospodarstvo	svetovalni organ direktorja Uprave
1958	Uredba o organizaciji in delu Uprave za vodno gospodarstvo	vodenje vodne knjige, katastra kvalitete voda in tehničnega arhiva, vzpostavitev in registracija vodnih uprav, regresiranje nakupa gradbenih strojev in opreme
1963	Zakon o vodnem skladu SRS	sredstva, namenjena za urejanje vodnega režima se namenjajo za graditev, vzdrževanje in obnavljanje regulacijskih in melioracijskih naprav, za urejanje hudournikov,…
1966	Zakon o vodah SRS	tri vodna območja, obveznost izdelave VG osnov, ustanovitev sedem splošnih vodnih skupnosti kot VG organizacij, obvezno vodenje vodne knjige

1974	nov Zakon o vodah SRS	pet vodnih območij, ustanovljene vodne skupnosti, Zveza vodnih skupnosti, VG organizacije, VG osnove, rečno nadzorna služba
1981	sprejet obstoječi Zakon o vodah SRS	samoupravni sporazumi o ustanovitvi območnih vodnih skupnosti, predpisane naloge območnih vodnih skupnosti
1989	Zakon o določitvi nalog, ki jih od 1.1.1990 začasno opravljajo	samoupravne interesne skupnosti (SIS-I) prenehajo z delom
1991	Zavod in Direkcija	Zavod RS za varstvo okolja in vodni režim in Republiška direkcija za varstvo okolja in urejanje voda - strokovne naloge opravlja Zavod, upravne pa Direkcija
1993	Zakon o gospodarskih javnih službah	razveljavljene določbe Zakona o vodah, v veljavi ostanejo določbe 2., 3., 4., 7., 10., 29., 33., 34., 35., 45. do 80. člena in 86. člena
1994	Zakon o organizaciji in delovnem področju ministrstev	Zavod RS za varstvo okolja in vodni režim in Republiška direkcija za varstvo okolja in urejanje voda nadaljujeta delo kot Uprava RS za varstvo narave, beseda voda "izgine" iz imen upravnih in strokovnih organov

Table 1. A short schematic overview of the development of institutions in the field of water management in Slovenia (Umek, 1998).

Year	Institution or event	Description
1945	Ministry for the Construction of the People's Republic of Slovenia (LRS)	Water supply, sewers, sanitary engineering and reconstruction of rural areas
1947	Ministry of Communal Affairs of the LRS	Water supply, sewers, sanitary engineering and reconstruction of rural areas
1947	Ministry of Agriculture	Land improvement and river training
1948	Committee for Water Management of the Government of the FLRJ	General management of justified and rational use of water and management of the water regime
1950	Committee for the Government of the LRS for Water Management	General management, co-ordination and implementation of tasks in the field of water management
1951	Republic Professional Board for Water Management	Comprehensive analysis and the solving of professional problems in the field of water management
1951	Committee of the Gov. of the LRS for Water Management	Incorporation of the Administration for the hydro-meteorological service and administration of regulation works and land improvement
1952	Establishment of Water Boards	Implementation of the construction and devices for the protection of water and the collective use of water; their re-construction and maintenance

1954	Administration for the Water Management of the LRS	The Administration becomes independent administrative body for the matters of water management under the republic jurisdiction
1954	Law on Foundations for Water Management (WM)	Regional and City Funds, Republic Fund, sources of financing, incomes from water, land, and contributions from water users
1954	Establishment of WM Sections	Six sections determined fields of work and tasks of each section
1955	Named a professional council of the Adm. for WM	Council Board of Directors
1958	Regulation on the organisation and work of the Administration for WM	Water book, cadaster (register) of water quality and archives, establishment and registration of water boards, support in purchasing, mechanisation and equipment
1963	Law on the Water Foundation of SRS	Funds at disposal for water management, water regimes, construction, maintenance, restoration of river training works, amelioration works, torrents
1966	Water Act of SRS	Three WM areas, obligation for the preparation of WM baselines (River Basin Characteristics), establishment of 7 general water associations, water book
1974	New Water Act of SRS	Five administrative regions, Regional Water Associations, Association of Water Associations, WM enterprises, WM baselines, service for the supervision of rivers
1981	Adopted existing Water Act of the SRS	Self-governmental agreements on the establishment of regional water associations, their tasks …
1989	Law on the determination of tasks performed temporarily from 1.1.1990	Self-governing communities established on the basis of the Water Act of ’81 cease to exist
1991	Institute and Directorate	Institute of the RoS for the protection of the water regime, State directorate for the protection of the environment and the administering of water. Professional tasks – Institute, administrative tasks – Directorate
1993	Law on Public Services	Abolishment of all provisions of the Water Act except articles 2., 3., 4., 7., 10., 29., 33., 34., 35., 45. to 80., and 86.
1994	Law on the Organisation and Working Areas of the Ministries	The Institute and Directorate are transformed into the Administration for the Protection of Nature The term water “disappears” from the names of professional and administrative state bodies



Slika 6. Porazdelitev funkcij pri gospodarjenju z vodami na državnem, regionalnem in lokalnem nivoju (Umek, 1998).

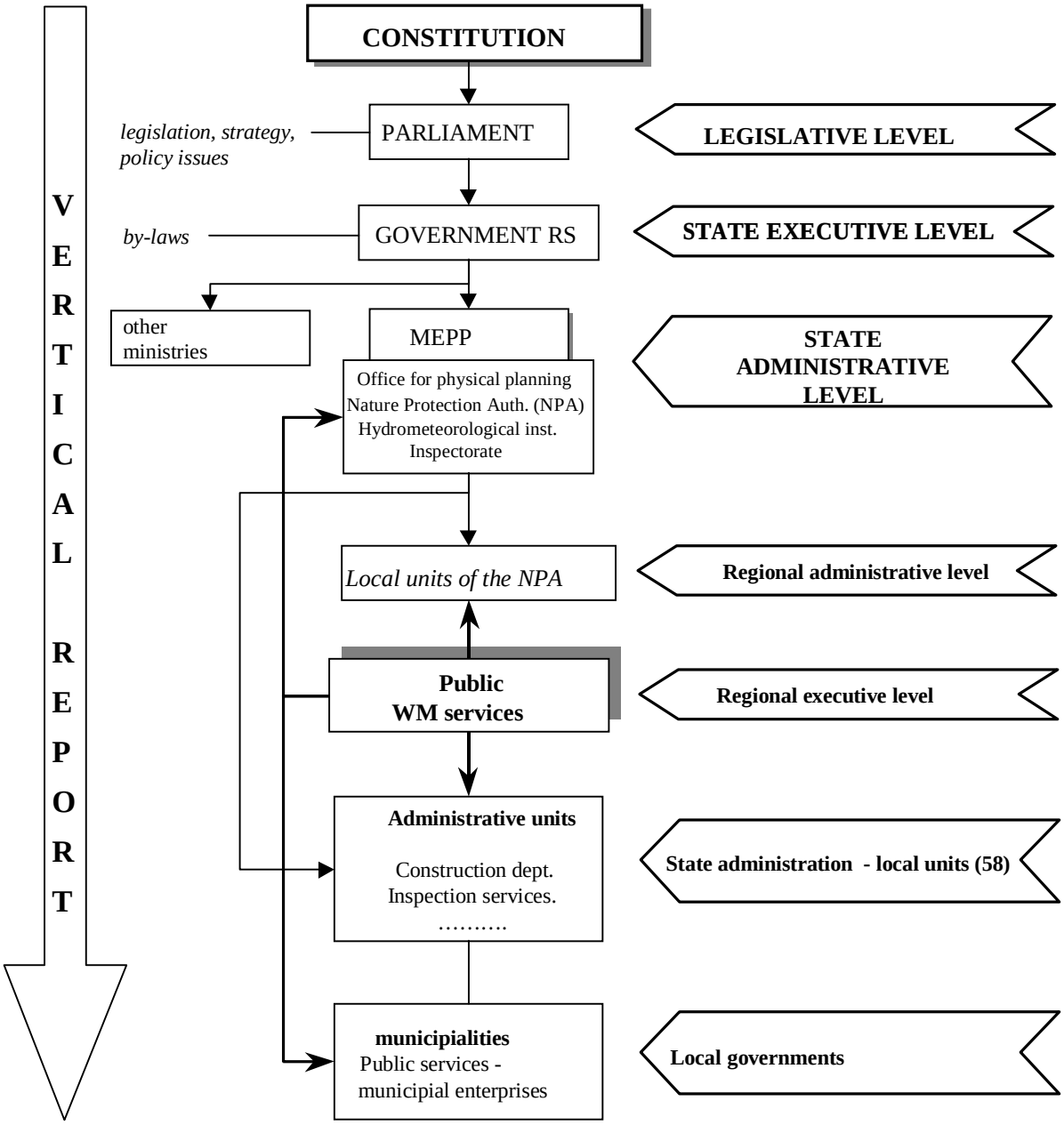
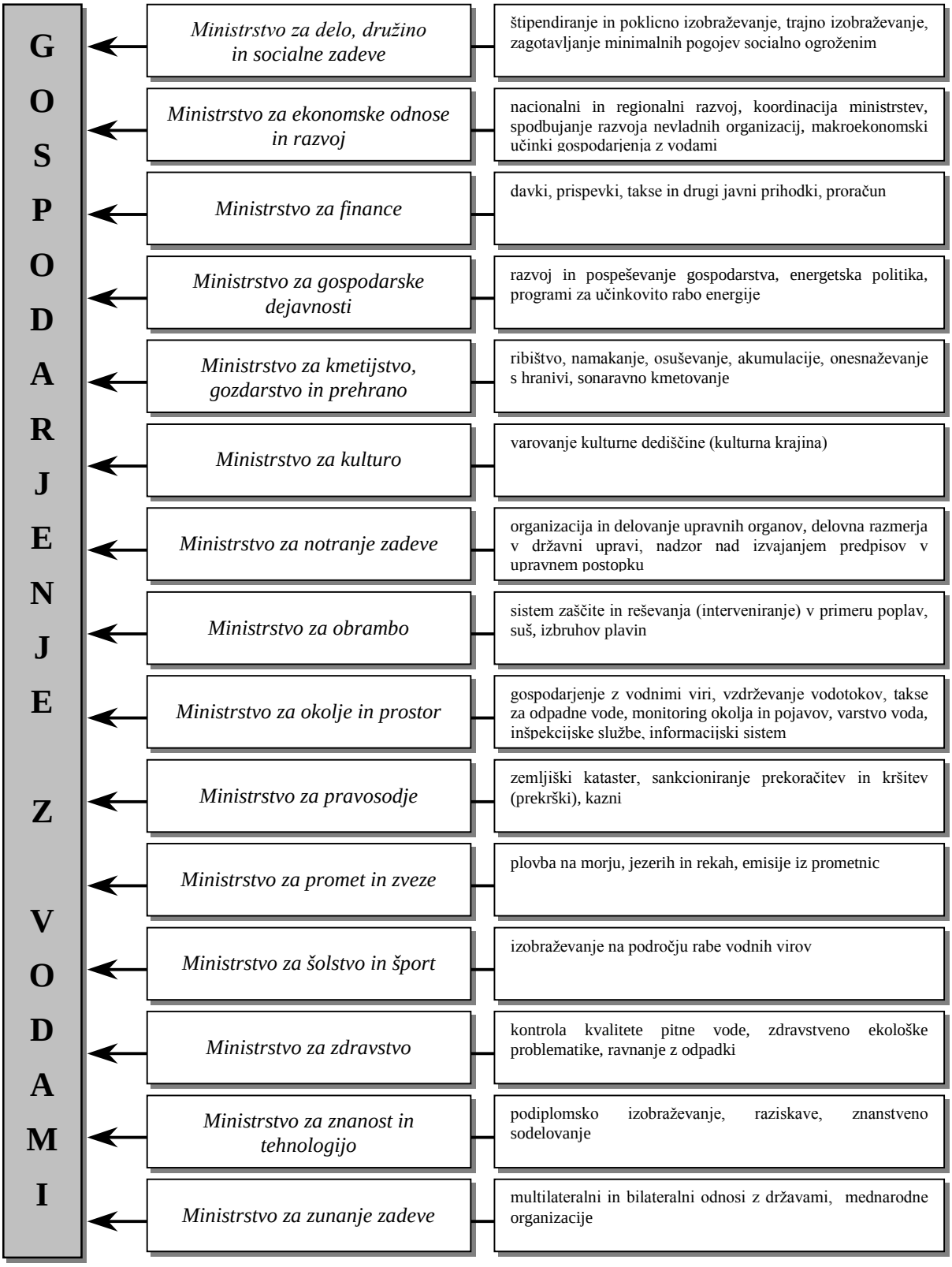


Figure 6. The distribution of functions in water management on a state, regional and local level (Umek, 1998).



Slika 7. Porazdelitev funkcij v sistemu gospodarjenja z vodami med ministrstvi (Umek, 1998).

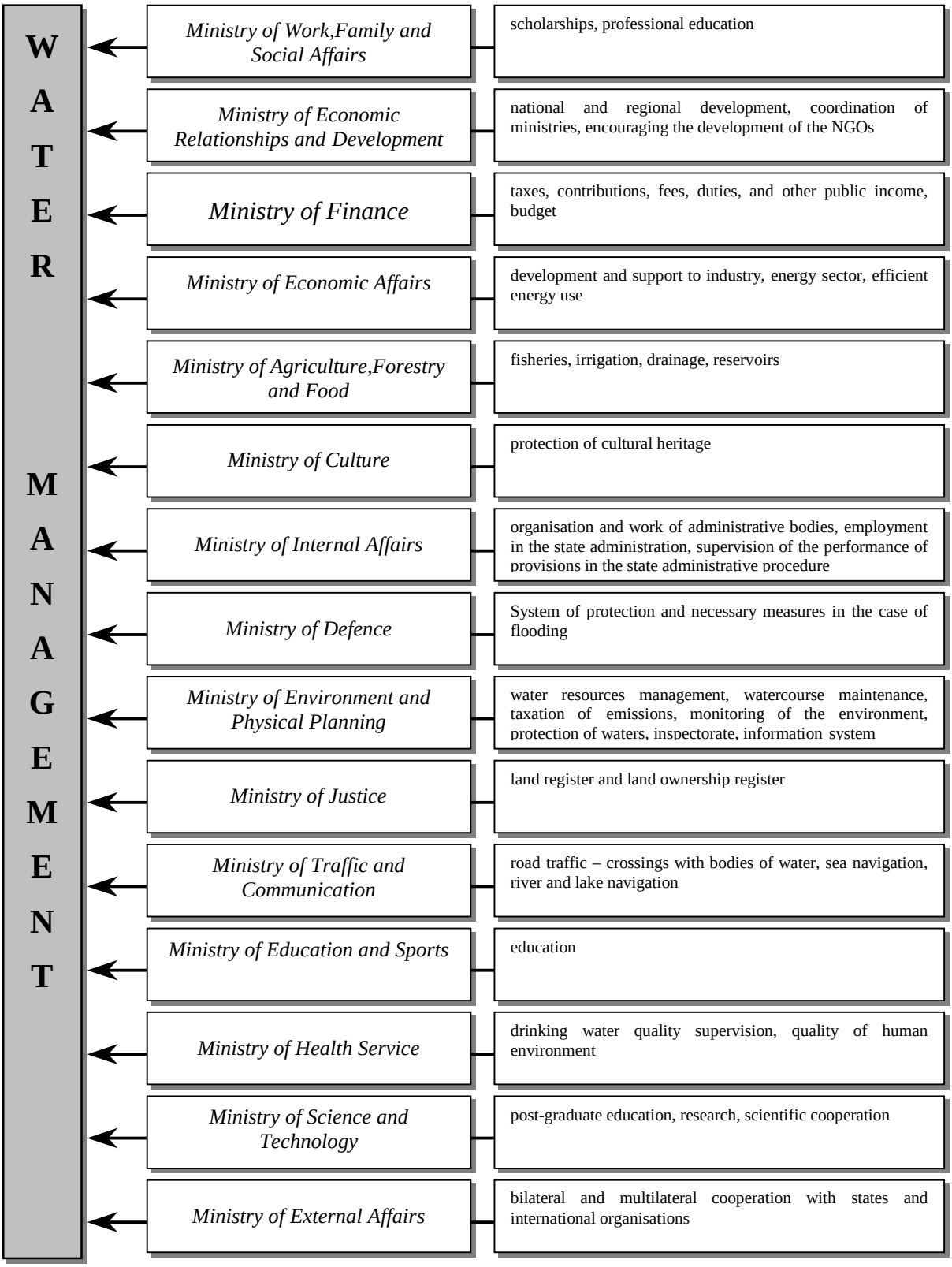


Figure 7. The distribution of water management functions among the ministries (Umek, 1998).

4.1.4 Načrtovanje v vodnem gospodarstvu

V Zakonu o vodah je bilo poglavje PLANIRANJE v celoti razveljavljeno. Zato je na tem področju ostala velika praznina in veliko nerazčiščenih vprašanj, sistemu gospodarjenja z vodami pa je bila povzročena velika škoda. Postavlja se vprašanje, ali planiranje kot temeljni instrument gospodarjenja z vodami s pravnega vidika sploh še obstaja.

Kljub "pravni praznini" pa Zakon o urejanju prostora (Ur. list SRS št 18/94, 15/89 in Ur. list RS št. 71/93) zahteva, da so v prostorskih vsebinah opredeljene temeljne usmeritve in globalna zasnova dejavnosti v prostoru. Te se med drugim nanašajo tudi na pomembnejše vodne vire ter pomembnejša omrežja in naprave za oskrbo s pitno in tehnološko vodo ter za odvajanje in čiščenje odplak.

Planske vsebine, ki sicer pomanjkljivo, pa vendarle do določene mere obdelujejo vprašanja gospodarjenja z vodami, se nahajajo v prostorskih sestavinah, kjer mora biti določena tudi globalna zasnova namenske rabe, zlasti za:

- pomembnejša območja kmetijskih zemljišč in gozdov, območja za raziskovanje in pridobivanje rudnin, območja pomembnejših vodnih virov ter območja naravnih znamenitosti in kulturnih spomenikov,
- pomembnejša območja za poselitev in na njih območja z večjo koncentracijo proizvodnih dejavnosti,
- pomembnejša območja za turizem in rekreacijo, nevarna in ogrožena območja, pomembnejša območja za potrebe splošne ljudske obrambe,
- območja odlagališč nevarnih in zdravju škodljivih snovi,
- pomembnejše vodnogospodarske ureditve
- varovanje in razvoj krajinskih vrednot na ozemlju celotne republike Slovenije.

Vendar Zakon o urejanju prostora na področju vodnogospodarskega planiranja ne more nadomestiti Zakona o vodah. Postavlja pa se vprašanje, kako se vključevati v proces prostorskega načrtovanja, če so temeljnemu zakonu, ki določa pogoje za gospodarjenje z

4.1.4 Water resources planning

The water management system suffered a major setback, as, in 1993, a Law on public services completely annulled the articles on planning in the Water Act, thereby leaving a huge void and many unresolved questions. The question of whether planning as a basic instrument for water management exists from a legal viewpoint at all could therefore be asked.

Despite this "legal void" the Land Use Planning Act (OG of SRS 18/84,15/89 and OG 71/93) requires that land use include some basic orientations and a global design for land activities. Those requirements include important sources of water, important waterworks and devices for supplying drinking and surface water, as well as wastewater treatment plants, among other things.

Planning demands, although they inadequately deal with questions of water management, are included in land use planning where a global design for intentional use must be specified, especially for:

- more important areas of farmland and forests, areas for mineral research and extraction, areas of more important water sources and areas of natural and cultural importance
- more important areas for settlement and on them areas with a larger concentration of manufacturing activities
- more important tourist and recreational areas, dangerous and endangered areas, areas important for military defence
- dumping areas for dangerous and hazardous substances
- more important water resources industrial developments
- the protection and development of regional values throughout the territory of the Republic of Slovenia.

The Land Use Planning Act, however, cannot cover the water management planning needs that should be formalised in the Water Act. The question arises, therefore, how to have water management planning included in the process of land use planning if the basic law which determines the conditions for

vodami, črtali zelo pomembno poglavje? Trenutno stanje na zakonodajnem področju je takšno, da drugi zakoni dopuščajo (in celo zahtevajo) vključevanje "vodarske" stroke pri pripravi različnih dokumentov na različnih nivojih načrtovanja, sam Zakon o vodah pa ne vsebuje več nobenega določila, ki bi to omogočal (Umek, 1998).

4.2 RAZPOLOŽLJIVOST IN (PO)RABA VODE

Na ozemlju Slovenije, ki meri 20.230 km^2 površine, pade letno v povprečju okoli 1500 mm padavin, oziroma 1.005 m^3/s ali 31.693.680.000 m^3 vode. Od tega izhlapi letno v povprečju 650 mm, oziroma 417 m^3/s ali 13.150.512.000 m^3 vode, kar predstavlja 41,5 %. Glede na to odteče iz ozemlja Slovenije v povprečju 588 m^3/s ali 18.543.168.000 m^3 vode.

Slovenija ima razmeroma bogate zaloge podzemne vode, ki pa je neenakomerno porazdeljena. Skupna bilanca vodnih količin podzemnih voda v Sloveniji znaša cca. 43,8 m^3/s. Vendar se kažejo velike razlike v prostorski razporeditvi razpoložljive podzemne vode. Ocenjuje se, da je od teh voda v kritičnih obdobjih na voljo le 38 m^3/s, kakovost te vode pa je vedno bolj vprašljiva.

Poraba pitne vode v Sloveniji dosega približno 16,5 m^3/s, torej izkoriščamo že blizu 43 odstotkov rezerv podtalnih voda. Za oskrbo prebivalstva porabimo približno 7,0 m^3/s zajetih pitnih voda, ostalo pa porabi industrija in drobno gospodarstvo (MOP, 1998).

Pomanjkanje sistemskih in ekonomskih instrumentov, s katerimi bi uravnavali razmerje med ceno vode in možnostmi ter vrednostmi vodooskrbnih sistemov, vnaša v sisteme upravljanja in financiranja oskrbe z vodo napake, ki omogočajo neracionalna ravnanja s pitno vodo.

Lahko bi zaključili, da razpoložljive količine zadoščajo trenutnim količinskim in kvalitativnim potrebam po vodi. Vendar se razmerje med potrebami in razpoložljivimi količinami, brez ustrezne politike in načrtovanja v gospodarjenju z vodami, lahko poslabšajo predvsem v kvalitativnem pogledu,

managing waters has had some very important articles annulled. The current condition is that other laws allow, and indeed demand, the inclusion of "water" experts in preparing various documents on different levels of planning, while the Water Act does not include any provisions which would enable that (Umek, 1998).

4.2 AVAILABILITY AND USES OF WATER

The annual rainfall in Slovenia, which measures 20,230 km^2, is around 1500 mm, which is 1,005 m^3/s or 31,693,680,000 m^3 of water. The annual level of evaporation is 650 mm, which is 417 m^3/s or 18,543,168,000 m^3 of water.

Slovenia has relatively large underground water resources, which, however, are not equally allocated. The total volume of water is approximately 43.8 m3/s. Large differences exist, furthermore, in the allocation of usable underground water. Estimates show only 38 m3/s in critical periods and its quality is becoming more and more questionable.

The average use of drinking water in Slovenia is 16.5 m3/s, which is close to 43% of the underground water reserves. Inhabitants use approximately 7.0 m3/s of allocated drinking water and the rest is used by industry and small businesses. (The Ministry for the Environment and Physical Planning, 1998).

The lack of a system and economic tools which would balance the ratio between the cost of water and the possibilities and value of systems for supplying water hampers the proper functioning of systems for managing and financing the supply of water. This leads to the irrational management of drinking water.

We could say that such quantities suffice for the current quantitative and qualitative needs for water. The ratio between demand and available sources can deteriorate, however, without suitable policy and planning in water management. The quality of water,

kar nazorno prikazujejo kvalitativna poročila in raziskave. Nujno potrebna je tudi sanacija obstoječih vodooskrbnih sistemov, predvsem v zmanjševanju izgub vode in v spodbujanju industrije k izkoriščanju vodnih virov, ki niso namenjeni vodooskrbi. Razmerje med porabo vode v industriji in kmetijstvu se bo v bližnji prihodnosti povečalo v prid kmetijstvu, predvsem zaradi potreb po vodi za namakanje. Te pa se na vododeficitarnih območjih, kljub dopolnilni naravi namakanja, brez zadrževalnikov in večjih posegov v prostor ne bo moglo zagotoviti.

Vse sedanje potrebe po vodi so splošne narave, zato se bo v prihodnosti potrebno posvetiti tudi posebnim potrebam po vodi, kot so: potrebe, ki se nanašajo na varstvo narave, rekreacijo, privlačnost pokrajine in okolja itd.

4.3 JAVNI IN ZASEBNI DEJAVNIKI IN NJIHOVA VLOGA NA RAZNIH RAVNEH NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

Glavne naloge načrtovanja in gospodarjenja z vodami so določali razveljavljeni deli še veljavnega Zakona o vodah. Ti so določali izdelavo strokovnih podlag za načrtovanje gospodarjenja z vodami, in sicer na podlagi izdelave vodnogospodarskih temeljev in planov vodnega gospodarstva. Pomembno vlogo v sistemu načrtovanja so imele vodne skupnosti, katerih naloge so bile:

- sprejemanje planskih aktov za določanje in izvajanje vodnogospodarske politike na vodnem območju,
- skrb za varnost pred škodljivim delovanjem voda, sprejemanje ukrepov za obrambo pred poplavami, za vzdrževanje, rekonstrukcijo in graditev vodnogospodarskih objektov in naprav v splošni rabi ter za vzdrževanje vodotokov, spodbujanje in usmerjanje graditve vodnogospodarskih objektov in naprav v posebni rabi,
- skrb za ohranitev vodnih količin in zalog na vodnem območju, spodbujanje in sodelovanje pri graditvi zbiralnikov in

especially, can deteriorate, which can be clearly seen from the reports and research on quality. The existing water supply systems are in dire need of repair, especially concerning reducing the loss of water and stimulating industry to exploit water resources not meant for the drinking water supply. Agriculture will, due to irrigation, soon consume more water than industry. But that water will not be available in water deficient areas without reservoirs and other major interventions.

All of the current needs for water are of a general nature, so we will have to be careful to devote some attention to specific needs such as protecting nature, recreation, the appeal of a certain landscape and the environment, etc.

4.3 PUBLIC AND PRIVATE ACTORS AND THEIR ROLES ON VARIOUS LEVELS OF WATER MANAGEMENT PLANNING

The main task of water planning and management were determined by the invalidated parts of the still valid Water Act. These determined the requirements for the preparation of the supporting documentation for the water management decision making in the form of River Basin characteristics and plans for water management. An important role in the planning system was played by the water communities, their tasks being**:**

- the adoption of plans for determining and implementing water management policy in the water areas
- security concerning the harmful effects of water, the adoption of measures for flood control; the maintenance, reconstruction and building of water management structures and installations in general use and the maintenance of watercourses; the stimulation and guidance of the development of water management structures and installations for specific use
- concern for the preservation of water supplies and resources in the water areas; stimulation of and co-operation in the construction of reservoirs and other structures that enable a permanent level of

drugih objektov, ki omogočajo trajnejše zadrževanje voda in bogatenje podtalnice, sodelovanje pri odkrivanju vodnih virov in graditev javnih in drugih vodooskrbnih naprav,
- skrb za varstvo kakovosti voda in vodnih zalog, izvajanje ukrepov za izboljšanje kakovosti voda, spodbujanje in sodelovanje pri graditvi objektov in naprav za varovanje voda pred onesnaženjem,
- zagotavljanje sredstev za urejanje vodnega režima,
- sodelovanje pri izdelavi občinskih predpisov s področja vodnega gospodarstva in pri vseh vodnogospodarskih vprašanjih ter
- opravljanje drugih zadev v zvezi z urejanjem vodnega režima na vodnem območju.

Vendar je bilo tudi poglavje Zakona o vodah, ki je določalo pristojnosti in naloge vodnih skupnosti, razveljavljeno. S tem je vodnogospodarsko načrtovanje izgubilo »temelje«, saj je prenehala obstajati ustanova, ki je bila odgovorna za celostno načrtovanje na vodnem območju. Danes del teh nalog opravlja Uprava RS za varstvo narave, pomemben del načrtovanja na vodnem območju, to je sodelovanje z lokalnimi skupnostmi, pa je ostal nerešen (Umek, 1998).

V procese načrtovanja in gospodarjenja z vodami so posredno ali neposredno vključeni naslednji dejavniki - akterji:
- nacionalne in regionalne upravne ustanove (Uprava RS za varstvo narave, Uprava RS za zaščito in reševanje, Uprava RS za pomorstvo itd.),
- nacionalne in regionalne javne strokovne in raziskovalne ustanove (javne vodnogospodarske službe pri vodnogospodarskih podjetjih, Vodnogospodarski inštitut, FGG-Hidrotehnična smer, Inštitut za hidravlične raziskave itd.),
- javne gospodarske službe - komunalna podjetja, podjetja za preskrbo s pitno vodo,
- javne in zasebne gospodarske in

water and the stabilization of ground water levels; co-operation in discovering water sources and the construction of public and other water supply installations
- concern for the preservation of the quality of water and water resources; the implementation of measures for the improvement of water quality; the stimulation of and co-operation in the construction of structures and installations for the protection of waters from pollution
- securing the means for the regulation of the water system
- co-operation in the preparation of municipal regulations in the area of water management and all water management issues
- the settling of other affairs concerning the regulation of the water system in the water area

However, the article of the Water Act that determined the jurisdictions and tasks of the water communities was invalidated too. Thereby, water management planning lost its foundations, since the institution in charge of the integrated planning in the water area ceased to exist. Part of these tasks are now performed by the Administration of the Republic of Slovenia for the Protection of Nature, but an important part of planning in the water area, co-operation with the local communities, has been left unsolved (Umek, 1998). Directly or indirectly included in the processes of water management and planning are the following factors and institutions:
- national and regional administrative institutions (the Administration of the Republic of Slovenia for the Protection of the Nature, Administration of the Republic of Slovenia for Civil Protection and Disaster Relief, the Maritime Transport Administration of the Republic of Slovenia, etc.)
- national and regional public expert and research institutions (public water management services in the water management companies, the Water Management Institute, the Faculty of Civil Engineering and Geodesy - the Department of Hydrology and Hydraulic Engineering, the Institute for Hydraulic Research, etc.)
- public companies - communal companies, companies for the supply of drinking water

negospodarske organizacije,
- lokalne skupnosti (občine, mestne občine),
- javnost, gospodarska in strokovna združenja in nevladne organizacije.

4.4 GLAVNE NALOGE NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

4.4.1 Določanje politike

V letu 1991 se je začela priprava Strategije vodnega gospodarstva Slovenije (Steinman et al., 1993). Temeljni nameni v procesu izdelave so bili naslednji:
- izdelati ključno podlago za pripravo nove zakonodaje,
- uskladiti cilje gospodarjenja z vodami,
- uveljaviti instrumentarije, ki bi zagotovili varovanje vodnega bogastva in njegovo smotrno rabo in
- predstaviti sektorski dokument za enakopravno vključevanje vodnega gospodarstva v dejavnosti slovenske družbe, vzporedno z drugimi sektorskimi strategijami.

Izrecno je bilo poudarjeno, da ni obdelano poglavje rabe in izrabe voda, saj takrat niso bili znani širši razvojni cilji republike Slovenije (Strategija gospodarskega razvoja Slovenije je bila pripravljena šele leta 1995). V času nastajanja vodnogospodarske strategije tudi drugih sektorskih strategij še ni bilo, temveč so nastajale istočasno oziroma kasneje. Posamezni sektorski dokumenti so nastajali ločeno drug od drugega, zato bi v teh dokumentih zaman iskali naslonitev na problematiko voda - očitno so upoštevali, da pokriva problematiko voda sektorska, to je vodnogospodarska strategija.

Na izdelan osnutek vodnogospodarske strategije je bila že znotraj sektorja Ministrstva za okolje in prostor, pristojnega za vode, podana vrsta pripomb, tako s strani recenzentov kot s strani uslužbencev resorne državne uprave. Pokazalo se je, da je nujno

- public and private companies and services
- municipalities and city communities
- the public, business and expert associations and non-governmental organisations.

4.4 MAIN FUNCTIONS IN WATER PLANNING AND MANAGEMENT

4.4.1 Policy making

In 1991 the preparation of the Water Management Strategy (Steinman et al., 1993) was initiated in Slovenia. The basic goals of the process were as follows:
- to establish a key foundation for the preparation of new legislation
- to harmonise the goals of water management
- to promote the implementation of instruments that would ensure the preservation and reasonable use of water resources
- to introduce a sectional document on the equal incorporation of water management into the activities of Slovene society, in parallel with other sectional strategies.

It was specifically emphasised that the chapter on the use of water resources is not treated since the broader Slovene development goals were not yet known (The Strategy of Economic Development was not formed before 1995). In the period of the formation of the water management strategy, other sectional strategies had not yet been made; they were either being made concurrently or at a later stage. The individual sectional documents were being made separately; therefore, there are no references to the water issues; it was apparently taken into account that the water issues are covered by the sectional **,** i.e.: water management strategy.

Several annotations were received by the water sector of the Ministry of the Environment and Physical Planning concerning the water management strategy draft, from the reviewers, as well as from the employees of the competent administration. Consequently, it is imperative to clear up the

potrebno v sami vodnogospodarski stroki razjasniti temeljne dileme. Ena od tipičnih značilnosti podanih pripomb je izvirala iz dejstva, da se tudi sam pojem vodno gospodarstvo različno razumeva, podobne razlike pa nastopijo tudi pri vodnogospodarskem načrtovanju in razumevanju širše vloge vodnega gospodarstva.

Od izdelanega osnutka vodnogospodarske strategije do danes je minilo sedem let. V tem času nismo dobili nobenega politično potrjenega dokumenta, ki bi se ukvarjal z gospodarjenjem z vodami, zaman pa smo čakali tudi na novi Zakon o vodah. Vendar pa strokovna javnost v tem času ni mirovala. Izdelanih in napisanih je bilo precej nalog in strokovnih prispevkov, ki so se posredno in neposredno ukvarjale s tematiko gospodarjenja z vodami. Tako so bile v letu 1997 na Hidrotehničnem odseku Fakultete za gradbeništvo in geodezijo izdelane strokovne podlage za Koncept gospodarjenja z vodami, v letu 1998 pa Strokovne podlage za spremembe in dopolnitve prostorskih sestavin planskih aktov na ravni države. Prav tako v letu 1998 so na Vodnogospodarskem inštitutu v Ljubljani izdelali nalogo Vodnogospodarski načrt povodja (Načrtovanje v vodnem gospodarstvu).

4.4.2 Vodnogospodarsko načrtovanje

Vodnogospodarsko načrtovanje je v tesni povezavi s politiko gospodarjenja z vodami. Že iz vsebine prejšnje točke pa lahko ugotovimo, da politike gospodarjenja z vodami pravzaprav nimamo. Tudi trenutno stanje na zakonodajnem področju je takšno, da drugi zakoni dopuščajo (in celo zahtevajo) vključevanje "vodarske" stroke pri pripravi različnih dokumentov na različnih ravneh načrtovanja, sam Zakon o vodah pa ne vsebuje več nobenega določila, ki bi to omogočal.

Zakon o vodah (Uradni list SRS 38/81) je v 41. členu določal izdelavo vodnogospodarskih osnov. Vodnogospodarske osnove so bile

basic dilemmas of the water management field itself. One of the typical characteristics of the annotations stems from the fact that the term water management is understood in different ways (water management v.s. water administery) and similar differences arise in water management planning and the understanding of the broader role of water management. (The Slovenian language does not specifically have a corresponding translation for the word “management”.)

It has been seven years since the Water Management Startegy Draft was completed. Since then there has been no officially verified document dealing with water management and the new Water Act has not been adopted either. The experts in the field have not rested, however. Several papers and articles have been written dealing directly or indirectly with the issues of water management. Expert grounding for the Concept of Water Management was carried out in the Hydro-technical Department of the Faculty of Civil Engineering and Geodesy in 1997, and in 1998 the expert grounding for the changes and supplementation of the land use planning components of the planning documents on the national level were also carried out. Furthermore, a research paper was completed in 1998 at the Water Management Institute in Ljubljana entitled *The Water Management Plan of the Water System (Planning in Water Management).*

4.4.2 Water management planning

Water management planning is closely connected to the policy of water management. But, as is evident from the previous point, policy in water management is virtually non existent. The present state in the legislative field is such that other laws allow for (and even demand) the inclusion of the water field of expertise in the drafting of various documents at different levels of planning, yet the Water Act does not include a provision that would enable that.

Annuled Article 41. of the Water Act (O.G. SRS 38/81) provided for the formulation of the water management bases that were an expert foundation for the drafting of the planning

strokovna podlaga za sestavo planskih aktov. Prav tako so na podlagi prikaza danosti vodnega režima v povodju in časovnem obdobju dajale izhodišča in možnosti prihodnjega vodnogospodarskega razvoja.

V območnih vodnih skupnostih so izdelovali tudi plane vodnih skupnosti, ki so bili podlaga za izvajanje vodnogospodarskih dejavnosti v povodjih, pri njihovi izdelavi pa so sodelovali tako uporabniki kot izvajalci. Kako temeljito so bile nekatere zadeve predpisane, bi lahko pokazala analiza, ki bi vsebino predpisanih Vodnogospodarskih osnov in prihodnjega Načrta gospodarjenja s porečji primerjala s smernicami Evropske zveze.

4.5 POMEMBNEJŠE SMERNICE PRI NAČRTOVANJU IN GOSPODARJENJU Z VODAMI

Smernice načrtovanja in gospodarjenja z vodami bo natančneje podal Program gospodarjenja z vodami v RS, od novega Zakona o vodah pa pričakujemo, da bo upošteval evropske smernice in smernice razvoja na področju gospodarjenja z vodami, predvsem pa Direktivo Sveta evropske skupnosti (Komisija EZ, 1998), ki podaja podlago za ukrepe na področju enotne (skupne) politike do voda. Na splošno bi lahko smernice opisali takole:

Razvoj nacionalne politike gospodarjenja z vodami po povodjih mora zagotoviti:
- celostno gospodarjenje z vodami,
- jasno strukturo ustanov upravljanja,
- učinkovito podporo monitoringa in informacijskih sistemov.

Razvoj ekonomike gospodarjenja z vodami mora postopno zagotoviti:
- plačilo za rabo vode - voda je ekonomska kategorija,
- namensko združevanje sredstev za pokrivanje posebnih stroškov zaradi rabe vode posameznih uporabnikov (kar izhaja iz vode, se vrača v vodo),

acts. On the basis of the representation of the natural potentials of a water system in a watershed within a given time frame, they also provided starting points and possibilities for the future development of water management.

In the regional water communities, plans for water communities (existing until 1989) were also being made, which were the basis for the execution of water management activities in the watersheds, with both users and contractors co-operating in the formulation of the plans. How strictly some issues were provided for could be shown by an analysis comparing the contents of the prescribed River Basin Charactersitics and the future River Basin planning system prescribed by the European Union Directives.

4.5 RELEVANT TRENDS IN WATER PLANNING AND MANAGEMENT

The guidelines for water management and planning will be more precisely provided in the Programme of Water Management in the Republic of Slovenia. The new Water Act is also expected to consider the European guidelines, the developments in the field of water management and especially the EU Council Directive (European Commission, 1998) which provides a basis for measures in the field of common water policy. In general, the guidelines can be described as follows:

The development of the national water management policy in watersheds has to guarantee:
- an integrated approach to water management
- a clear structure of administrative institutions
- efficient monitoring and information system support

The development of water management economics has to gradually guarantee:
- payment for the use of water - water is an economic category
- the earmarked pooling of funds to cover special expenses arising from the use of water by individual users (what comes from water goes back to water)
- the efficient and reasonable use of water becoming an economic stimulation to

- učinkovito in smotrno rabo voda, ki postaja ekonomska spodbuda razvoja.

Razvoj mehanizmov in ustanov za povečanje nadzora izvajanja programa gospodarjenja z vodami mora zagotoviti:
- jasno delitev pristojnosti, obveznosti in urejenosti financiranja,
- usposobljenost za ugotavljanje smernic, načrtovanja in programiranja ukrepov,
- učinkovit inšpekcijski nadzor ter spremljanje izvajanja in učinkovitosti izvedbenih dejavnosti ter
- prekomejno in meddržavno sodelovanje pri reševanju vodnogospodarske problematike.

Državne upravne ustanove Republike Slovenije, še posebej MOP, se premalo zavedajo pomembnosti pospeševanja in razvijanja instrumentov za izvajanje gospodarjenja z vodami, saj je nerazumljivo, da se tako zavlačuje sprejem Zakona o vodah. Poleg tega se država očitno umika iz sistema gospodarjenja z vodami, saj prodaja svoje lastniške deleže v vodnogospodarskih podjetjih (v njih bo v večini primerov ostala udeležena s približno 25 odstotki) za potrebe "zapolnitve privatizacijske luknje". Na tem mestu pa moramo omeniti še naslednje: Leta 1996 je bil izveden prenos vodnogospodarskih objektov in naprav v splošni rabi, katerih lastniki so bila vodnogospodarska podjetja, v državno zakladnico. Pred izvedbo prenosa teh sredstev so bili objekti knjiženi kot osnovno sredstvo vodnogospodarskih podjetij, ki so z objekti gospodarili. To pomeni, da so jih vzdrževali in zanje odvajali tudi amortizacijo. S prenosom lastništva na državno zakladnico (ocenjena vrednost objektov je okoli 100 milijard tolarjev) pa ni bila zagotovljena kontinuiteta gospodarjenja, saj država ni določila, kdo je odgovoren za gospodarjenje.

Zaradi vseh v nalogi naštetih težav pri gospodarjenju z vodami je torej res že skrajni čas, da dobimo nov Zakon o vodah. Ta mora podati celovit pravni okvir za gospodarjenje z vodami. Poleg tega pa bo podlaga za potrebne pomembne odločitve v zvezi z odvzemi voda, preskrbe z vodo, varovanjem vodnih virov,

development

The development of mechanisms and institutions to increase control of the execution of the management programme has to guarantee:
- a clear division of jurisdiction, obligations and financial arrangements
- the qualifications for establishing guidelines, planning and the programming of measures
- efficient inspection control and the monitoring of the execution and efficiency of the work carried out
- inter-regional and international co-operation in the solving of water management issues

The state administration institutions of the Republic of Slovenia, especially the Ministry of the Environment and Physical Planning, are not fully aware of the importance of the acceleration and development of the instruments that would enable the carrying out of water management and it is incomprehensible that the adoption of the new Water Act has been so delayed. Furthermore, the state is apparently withdrawing from the water management system, since it is selling its ownership shares in the water management companies (its ownership share will in most cases be 25%), to fill the privatisation gap. The following also needs to be mentioned at this point: in 1996, the water management infrastructure in public use, the owners of which were the water management companies, was transferred to the state treasury. Before the completion of the transfer of these resources, the infrastructure was accounted for as the basic property of the water management companies that administered the infrastructure. This means that the companies both maintained and covered the maintenance costs. With the transfer of ownership to the state treasury (the estimated value of the infrastructure is around 100 billion tolars, i.e.:approx. 1,3 billion DEM in 1996), the continuity of management was not ensured, because the state has not determined who is responsible for the management.

Due to all the above-mentioned problems in water management, it is high time to adopt the new Water Act. It must establish an integrated legal framework for water management. In addition, it will present the basis for important decisions concerning obtaining water, water

rabo vode in nadomestil, ki se nanašajo na rabo voda ter drugih finančnih virov za smotrno gospodarjenje z vodami. Zakonu naj bi sledili še ostali podzakonski predpisi, ki naj bi "varovali" vode pred različnimi oblikami onesnaženja. Pomemben del zakona bo moral biti namenjen tudi ustanovam in službam, ki bodo delovale na področju gospodarjenja z vodami.

Celotna vizija reševanja dolgoročnih problemov gospodarjenja z vodami je naloga vlade. Da bi lahko pripravili dolgoročen program, je pomembno določiti cilje, prioritete in sredstva za izvajanje programa.

Razvoj primernega političnega okvira za gospodarjenje z vodami je treba dopolniti z ustreznimi organizacijskimi ukrepi. Kljub obstoju (regionalnih) izpostav je koordinacija med državno in lokalnimi ravnmi težavna. Mogoče bi bilo koristno, če bi bila urejena formalna regionalna upravna struktura. Planski oddelek v okviru MOP ni dovolj močan, da bi lahko koordiniral postopke bodisi z drugimi ustanovami MOP ali z vsako od osmih izpostav.

Nekdanja Zveza vodnih skupnosti Slovenije je imela poseben planski oddelek za vodnogospodarsko načrtovanje, katerega temeljna naloga je bila, da v skladu s takratnim družbenim planiranjem pripravlja srednjeročne in dolgoročne plane ter letne plane. Planski oddelek je bil organiziran tako, da je bil sposoben organizirati delo in postaviti cilje ter da je znal zagovarjati predvidene rešitve (posege), izdelavo načrtovalskih (planskih) nalog in strokovnih podlag, planske dokumente pa je zaupal izvajalskim organizacijam.

4.6 SPLOŠNA OCENA INSTITUCIONALNEGA SISTEMA NAČRTOVANJA IN GOSPODARJENJA Z VODAMI

Prednosti in pomanjkljivosti obstoječega sistema načrtovanja in gospodarjenja z vodami bodo v tem poglavju podane samo taksativno (T. Umek, 1998).

supply, the protection of water sources, water use and compensations related to water use, and other financial sources for reasonable water management. The Act is to be followed by other executive regulations that are supposed to "protect" the waters from pollution. An important part of the Act should also be designed for institutions and services that will operate in the field of water management.

The whole vision of the solution of long term issues of water management is a task for the government. In order to prepare a long-term programme it is important to establish the goals, priorities and means to execute the programme.

The development of a suitable political framework for water management needs to be supplemented by appropriate organisational measures. Although (regional) administrations exist, co-ordination between the state and the local levels is difficult. It may be useful to have a well-regulated formal regional administrative structure. The planning department of the Ministry of the Environment and Physical Planning is not powerful enough to co-ordinate the procedures, not with other institutions in the ministry, nor with each of the eight branch offices.

The former Association of Water Communities of Slovenia had a special planning department for water management planning, the primary function of which was to prepare long-term and annual plans in accordance with the then existing social planning. The planning department was organised in such a way that it was capable of organising work and setting the goals, and was able to defend the proposed solutions (interventions), formulate the planning tasks and expert foundation, but entrusted the preparation of the planning documents to contracted organisations.

4.6 A GENERAL ASSESSMENT OF THE INSTITUTIONAL SYSTEM OF WATER PLANNING AND MANAGEMENT

In this chapter the advantages and disadvantages of the existing water management and planning system will be listed in detail.

4.6.1 Najpomembnejše prednosti obstoječega sistema

Med bistvene splošne prednosti, ki so predvsem rezultat učinkovitega delovanja neokrnjenega obstoječega sistema v preteklosti, lahko prištevamo:
- s pitno vodo iz javnih vodooskrbnih sistemov je preskrbljenih 77 odstotkov prebivalcev,
- pitna voda iz javnih vodooskrbnih sistemov je redno kontrolirana (kontrola kakovosti) in v večini primerov sprejemljive kakovosti,
- zaradi premajhnih sredstev za vzdrževanje vodotokov so ti ostali večinoma blizu naravnega stanja,
- kakovost nekaterih voda se je v zadnjih letih celo izboljšala, vendar predvsem zaradi ekonomskih težav večjih onesnaževalcev,
- organizirana mreža hidroloških in meteoroloških opazovanj z obsežnimi bazami podatkov,
- delovanje nevladnih organizacij v okoljevarstvenem in naravovarstvenem ozaveščanju javnosti,
- obvezno in dejavno vključevanje ribiških družin v vzdrževanje vodotokov.

Prednosti obstoječega institucionalnega sistema so:
- obstoj regionalnih izpostav Uprave za varstvo narave, ki je pristojna za vode, v mejah posameznih vodnih območij,
- obstoječ sistem organizacije in delovanja javnih vodnogospodarskih služb,
- dolgoletna tradicija delovanja vodnogospodarskih podjetij, kar se kaže v strokovni usposobljenosti zaposlenih v javnih vodnogospodarskih službah, usposobljenost teh delavcev za kakovostno delo ter uporaba posebnih znanj, pridobljenih z izkušnjami,
- tradicija izvajanja vodnogospodarskih dejavnosti v vodnogospodarskih javnih službah,

4.6.1 The most important advantages of the existing system

The main general advantages that are, above all, the result of the efficient functioning of the existing integrated system in the past are:
- 77% of the population is provided with drinking water from the public water supply system
- drinking water from the public water supply systems is regularly checked (quality control), and is, in most cases,of acceptable quality
- the waterways are, due to a lack of maintenance means, mostly close to their natural condition
- the quality of some water has even improved in recent years, but mostly because of the economic difficulties of the major polluters
- an organised network of hydrological and meteorological observations with extensive data bases exists
- nongovernmental organisations take action concerning the environmental awareness of the public
- fishing organisations are active in the maintenance of waterways.

The main advantages of the existing institutional system are:
- there are the regional branches of the Administration of the Republic of Slovenia for the Protection of Nature, which is competent for waters in the border regions of the individual water areas
- there are the existing organizational system and activities of the public water management services
- a long tradition of water management companies exists, as evidenced in the professional qualifications of the employees in water management services, the ability of the employees to carry out high quality work, and the use of specialized knowledge attained by experience
- a long tradition of water-management activities in public water management services exists
- technically well equipped public water

- relativno dobra tehnična opremljenost vodnogospodarskih javnih služb,
- prostorska skladnost delovanja javnih vodnogospodarskih služb z območji regionalnih izpostav Uprave za varstvo narave,
- obvladovanje odtočnega režima voda zaradi dolgoletnih izkušenj delavcev javnih vodnogospodarskih služb,
- predpisani obvezni emisijski in imisijski monitoring onesnaževalcev,
- spodbujanje onesnaževalcev k zmanjšanju obremenjevanja vodotokov s progresivno naravnanimi taksami za obremenjevanje voda in olajšavami, ki omogočajo naložbe v zmanjševanje onesnaževanja voda.

4.6.2 Glavne pomanjkljivosti in glavni konflikti obstoječega sistema

Med bistvene splošne pomanjkljivosti spadajo:

- načrtovanje v gospodarjenju z vodami je prisotno le v segmentu kratkoročnega načrtovanja sanacijskega in interventnega vzdrževanja,
- vodnogospodarske bilance razpoložljivih voda in porabe so pokazale, da vodnih virov ni toliko, kot smo mislili, kakovost pa se slabša,
- ocene kakovosti pitne vode se izdelujejo na podlagi posameznih parametrov, ne upošteva pa se njihovo medsebojno in kumulativno delovanje,
- v načrtovanju posameznih vodno-gospodarskih rešitev niso definirane norme in postopki kakovostnega načrtovanja,
- najpomembnejši del vseh sistemov VG v najvišji fazi razvoja predstavljajo akumulacije, ki pa jim pri nas nekontrolirana urbanizacija zaseda dragoceni prostor, zaradi raznih razlogov pa so njihove lokacije, namen in čas izgradnje sporni,
- za prehod na večje regionalne sisteme in zagotavljanje zadostne zanesljivosti

management services exist
- there is a genuine accordance(agreement) of the activities of the public water management services with the areas of the regional branches of the Administration of the RS for the Protection of Nature
- there is controlled runoff based on the long term experience of the public water management services
- the prescribed obligatory monitoring of polluters emmisions and monitoring of the state of environment exists
- there exists encouragement for polluters to reduce pollution of bodies of water with progressive taxation for wastewater discharges and tax relief that enables(encourages) investments that result in the reduction of water pollution

4.6.2 The main deficiencies and conflicts in the existing system

The major general deficiencies are:

- water management planning is only present in the short term planning segment of sanitation and intervention maintenance
- the water management balances of the available water and water use have shown that water resources are not as abundant as we had thought, and that the quality is decreasing
- water quality estimations are being made on the basis of individual parameters whose mutual and aggregate effects are not taken into consideration
- standards and procedures of quality planning are not defined in the planning of the individual water management programmes
- the most important part of all the systems in water management in its highest phase of development is the retention capacity; in Slovenia uncontrolled urbanization is taking up valuable space for potential reservoirs and retentions, and for various reasons, their locations, functions and time of construction are questionable
- the transition from the extensive to the intensive use of water is too slow (concerning recirculation, multiple use, more rational irrigation, clean technologies)
- there is insufficient pre-investment that

preskrbe ni bilo zadostnih predinvestiranj,
- današnjem gospodarskem in ekonomskem položaju ni zadostnih sredstev,
- ureditev kontinuiranih kaskadnih sistemov za izrabo vodnega potenciala, ki je (tako rekoč) edini obnovljivi vir, je sporna z različnih vidikov, zaradi dajanja prednosti kratkoročnim cenejšim virom pa je graditev takih objektov zastala,
- izgradnja reverzibilnih HE, ki dajajo visokovredno konično energijo, nima potrebne prioritete,
- dovoljenja za izgradnjo malih HE na povsem naravnih delih vodotokov so izdana brez ustreznih strokovnih podlag,
- zaradi nestrokovnih posegov v povodjih se spreminjajo odtočni režimi vodotokov,
- majhna transparentnost enot, ki se ukvarjajo z vodooskrbo oz. gospodarjenjem z vodami.

Med pomanjkljivosti na institucionalnem področju prištevamo:
- počasno ter strokovno pomanjkljivo sprejemanje nove vodne zakonodaje,
- prelivanje javnih sredstev, namenjenih za gospodarjenje z vodami, v druge sektorje in dejavnosti,
- sredstva vodnih povračil in taks za obremenjevanje voda se ne "vračajo" v celoti za dejavnosti gospodarjenja z vodami,
- vodna povračila se plačujejo za osnovno rabo vode (pitna voda), za posebno (namakanje) pa ne,
- nepoznavanje temeljnih ekonomskih instrumentov v gospodarjenju z vodami,
- nadomestila za odvajanje meteorne vode se ne zbirajo,
- ni kontrole nad izvajalci emisijskega monitoringa,
- javne vodnogospodarske službe se soočajo z negotovostjo zaradi sedanje in prihodnje organiziranosti, s težavami zaradi premajhnih sredstev za izvajanje dejavnosti, z odhajanjem strokovnjakov v druge sektorje in dejavnosti, z veliko

would guarantee an adequately reliable supply and enable a transition to larger regional systems
- the arrangement of continuous cascade systems for the use of water energy potential, which is virtually the only renewable source, is questionable from various view points, and, because short term cheaper energy sources have been given priority, the building of such an infrastructure has been halted
- the construction of reversible hydroelectric power stations that produce high value peak power has not been given the necessary priority
- building permits for small hydroelectric power stations on the natural parts of waterways are issued without appropriate expert analysis
- inexpert measures in the watersheds are causing undesirable changes of the runoff
- there is low transparency of companies involved in water supply and wastewater collection and treatment.

The deficiencies in the institutional area are:
- there is the slow and technically inadequate adoption of new legislation
- there is an outpouring of funds previously earmarked for water management, to other sectors and activities
- taxes originating from water use do not fully "return" to water management activities
- water taxes are paid for certain uses (i.e. drinking water), but not for all of them (i.e. irrigation)
- there is a lack of knowledge of the basic economic instruments in water management
- compensation for urban runoff is not collected
- there is no supervision of emission monitoring
- public water management services are insecure about the present and future organization; they are facing problems arising from insufficient funding for their activities; experts are departing into other sectors and services and there is an increasing dependence on budgetary funding
- availability of sufficient skilled workers

odvisnostjo od proračunskih sredstev,
- kadrovsko vprašanje (izobraževanje zaposlenih in zaposlovanje) je eno najresnejših problemov za nadaljnji razvoj sistema gospodarjenja z vodami,
- gospodarjenje z vodami se je omejilo na izdajanje pogojev v vodnogospodarskih soglasjih in dovoljenjih, brez združevanja in odločanja vseh uporabnikov vode,
- ni več gospodarja vodnogospodarskih objektov in naprav v splošni rabi, saj so objekti leta 1996 prešli iz lastništva vodnogospodarskih podjetij na državno zakladnico, država pa ni določila gospodarja teh objektov,
- nedorečene pristojnosti Uprave RS za varstvo narave, kar vodi k neorganiziranosti na relaciji Uprava za varstvo narave, izpostav Uprave za varstvo narave in javnih vodnogospodarskih služb,
- slaba informiranost o izvedenih študijah na področju gospodarjenja z vodami, zato širša strokovna javnost ne ve natančno, katere "študijske" aktivnosti potekajo,
- pomanjkljivo in pogosto neučinkovito delovanje pristojnih inšpekcijskih služb,
- pomemben segment nadzora, rečnonadzorna služba je brez pravih pristojnosti,
- zaradi pomanjkanja celovitega načrtovanja v gospodarjenju z vodami je ponavadi odločanje o večjih naložbah brez strokovnih podlag,
- strokovni nadzor porabe javnih sredstev za vzdrževanje je pravno sporen, saj se za vzdrževalna dela na eni strani zahteva spoštovanje predpisov o graditvi objektov, nadzor pa izvajajo inženirji, ki nimajo pooblastila za izvajanje nadzora (pooblaščeni inženirji),
- nejasna vloga v sprejemanju in presoji upravičenosti vodnogospodarskih rešitev regionalnih Zavodov za kulturno in naravno dediščino,
- vključevanje nevladnih organizacij v procese odločanja pri večjih in pomembnih naložbah je nujno, vendar je večinoma

(the education of employees, employment) is one of the most burning issues for the future development of the water management system
- water management has limited itself to issuing conditions to the water management agreements and licenses, without the integration and decision-making input of all water users
- there is no single manager of the water management infrastructure and installations in general use, since the ownership of the infrastructure was transferred from the water management companies to the state treasury in 1996, and the state still hasn't appointed a manager
- there are undefined jurisdictions for the Administration of the RS for the Protection of Nature, leading to disorganization in the relationship between the Administration of the RS for the Protection of Nature, its regional branches and the public water management services
- there is poor information on research studies in the area of water management, resulting in the wider professional public not knowing exactly which activities are being carried out
- an insufficient and often inefficient functioning of the competent inspection services exists
- an important segment of development, the river-supervision service, has no real legal jurisdiction
- due to a lack of integrated planning in water management, decisions about major investments are often without sufficient expert foundation
- the competent supervision of the use of public funds for maintenance is legally questionable. On one hand, maintenance workers are required to follow building regulations, while the supervision is carried out by engineers who have no authority to supervise (authorized engineers)
- there is an unclear role of the Institutes for the Cultural and Natural Heritage in adopting and assessing the reasoning of the water management solutions
- the incorporation of non-governmental organizations in the decision making processes in bigger and important investments is necessary, but it is usually

pogojeno z javnim in političnim prestižem brez iskanja najboljših razpoložljivih rešitev problema.

4.6.3 Skupna ocena

Spremembe političnega sistema in sprejetje nekaterih novih zakonov (Zakon o varstvu okolja, Zakon o gospodarskih javnih službah itd.) so na področju gospodarjenja z vodami prinesle velike spremembe. Država je postala lastnik vodnogospodarskih objektov in naprav, ni pa določila, kdo je odgovoren za gospodarjenje z njimi. Prav tako je bil delno razveljavljen Zakon o vodah, črtana pa so bila pomembna določila, ki so zagotavljala načrtovanje in financiranje vodnogospodarskih dejavnosti. Zaradi neurejenih razmer, ki se odražajo v neurejenih vprašanjih pri programiranju, načrtovanju, financiranju, organiziranosti, izvajanju in nadzorovanju vodnogospodarskih dejavnosti, je področje gospodarjenja z vodami v RS v veliki krizi. Posledica takšnega položaja je tudi odliv usposobljenih strokovnjakov v druge dejavnosti. Nov Zakon o vodah, ki bi lahko rešil trenutno "kaotične" razmere, se pripravlja že dvanajst let. V pričakovanju na novo zakonodajo pa "pozabljamo", da tudi še veljavni členi Zakona o vodah omogočajo vrsto ukrepov. Trenutne razmere zahtevajo takojšnje ukrepanje in morda je ravno proces pridruževanja v EZ priložnost, da postavimo gospodarjenju z vodami v Republiki Sloveniji nove, zdrave temelje (Umek, 1998).

5. ZAKLJUČEK

Magistrska naloga podaja trenutni pregled razmer na področju gospodarjenja z vodami v času, ko v Republiki Sloveniji potekata dva pomembna procesa: priprava novega Zakona o vodah (sedanji velja od leta 1981) in proces izpolnjevanja pogojev za včlanitev RS v Evropsko zvezo.

Ker so v državah članicah Evropske zveze pričeli s poenotenjem sistemov celostnega gospodarjenja z vodami, smo se v nalogi naslonili na rezultate projekta Evropske zveze

conditioned by public and political prestige, not by a desire to search for the best available solutions to the problem.

4.6.3 Joint estimation

The changes in the political system and the adoption of several new acts (the Protection of the Environment Act, the Public Services Act, etc.) have brought about major changes in the field of water management. The state has become the owner of the water management infrastructure, but there is no clear provision on who is responsible for its management. The Water Act was also partly invalidated and several provisions that ensured the planning and financing of water management activities were abrogated. The unsettled circumstances reflected in the unsettled issues of the programming, planning, financing, organizing, monitoring, execution and supervision of water management activities has plunged the field of water management in Slovenia into a deep crisis. One of the consequences of this situation is a drain of qualified experts into other activities. The new Water Act that could settle the momentarily chaotic circumstances has been in preparation for twelve years. Yet, while waiting for the new legislation, we tend to forget that the still valid articles of the Water Act enable numerous measures to be taken. The momentary circumstances demand immediate action and the EU accession process may be the right opportunity to build new, firm foundations for water management in Slovenia (Umek, 1998).

5. CONCLUSION

This M.Sc. thesis presents a current overview of the water management situation at a time when two important processes are under way in the Republic of Slovenia.

The preparation of the new Water Act (the present one has been in force since 1981) and the process of fulfilling the conditions for Slovenian membership in the European Union.

The European Member States have begun the harmonization processes of integrated water systems management; therefore, the thesis considers the results of the EU

EUROWATER. Projekt podpira tudi Evropska komisija, ukvarja pa se z institucionalnimi mehanizmi in strukturami gospodarjenja z vodami v evropskih državah in primerja njihovo učinkovitost glede na zakonodajo Evropske zveze. Tako je bilo za nekaj držav Evropske zveze izdelano Vertikalno poročilo, ki podaja pregled in oceno institucionalnih, pravnih, ekonomskih in socialnih izhodišč, potrebnih za operacionalizacijo pobude na področju skupne politike do voda.

Republika Slovenija, kot ena od držav, ki se pripravljajo na vstop v EZ, bo morala v procesu usklajevanja zakonodaje v celoti prevzeti veljavni pravni red EZ, gospodarjenje z vodami pa urediti tako, da bo lahko izpolnjevala obveznosti, ki jih prinaša tudi skupna politika do voda. Zato je bil temeljni namen naloge pripraviti osnutek Vertikalnega poročila za RS, struktura naloge pa v celoti sledi strukturi poročila v projektu EUROWATER.

Podana naloga prinaša pregled trenutnega položaja na področju gospodarjenje z vodami na obalnem območju in v celotni RS. V prvem delu naloge je obravnavana problematika gospodarjenja z vodami na obalnem območju. Ugotovili smo, da je za postavitev ustreznega sistema celostnega gospodarjenja z vodami na obalnem območju nujna zakonodajna ureditev, ki bo uveljavila organiziranost in financiranje sistema gospodarjenja z vodami v celotni Republiki Sloveniji. Ugotovljena je predvsem velika kriza zaradi neurejenosti razmer na področju gospodarjenja z vodami, ki se odraža v neurejenih vprašanjih pri programiranju, načrtovanju, financiranju, organiziranosti, izvajanju in nadzorovanju vodnogospodarske dejavnosti. Posledica takšnih razmer je tudi odliv usposobljenih strokovnjakov v druge dejavnosti.

Pri pripravi naloge se nismo mogli izogniti veljavnim členom Zakona o vodah, ki so ostali po sprejemu ustavnih amandmajev (ki so odpravili npr. vodne skupnosti), po sprejemu Zakona o varstvu okolja (ki je vode določil kot lastnino države), ter druge zakonodaje, ki je posegla na področje gospodarjenja z vodami. V analizi ključnih zakonodajnih,

EUROWATER project. The project is also supported by the European Commission and it deals with the institutional mechanisms and structures of water management in European countries, comparing their efficiency with regard to European Union legislation. Thus the Vertical report was issued for some European Union Member States, giving an overview and an estimation of the institutional, legal, economic and social starting points necessary to make operational initiatives in the field of common waters policy.

In the process of legislation harmonization, the Republic of Slovenia, as one of the EU Candidate States, will have to adopt the entire Acquis Communitair and organize water management in such a way that it can fulfill the obligations resulting from the common water policy. The basic purpose of this thesis was, therefore, to prepare a draft of the Vertical Report for the Republic of Slovenia and the structure of the thesis fully follows the structure of the EUROWATER Project Report.

The thesis offers a temporary overview of the current situation in the water management field in the whole country, with the first part dealing with the issues of water management in the coastal area. It has been noted that the establishment of an adequate integrated system of water management in the coastal area necessarily requires a legislative regulation that would establish an organization and the financing of the system of water management in the whole Republic of Slovenia. A great crises was ascertained, springing from the disorderly conditions in the water management field and reflected in the unsolved issues in the programming, planning, financing, organization, execution and supervision of water management activities. One of the consequences of such a situation is the loss of experts to other activities and fields.

When preparing the thesis, we were unable to avoid the articles of the Water Act left in force following the adoption of constitutional amendments (that have abolished, for example, the water communities association), after the adoption of the Protection of the Environment Act (which declared water to be state property), and other legislation that touched upon the area of water management.

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organizacijskih in drugih nedorečenosti je bilo ugotovljeno, da dosedanje priprave na novo zakonodajo o vodah niso bile najustreznejše, saj je bilo pripravljenih že dvanajst verzij osnutkov Zakona o vodah, vendar še vedno ni jasno, kakšen bo končni Osnutek. V pričakovanju na novo zakonodajo pa "pozabljamo", da tudi še veljavni členi Zakona o vodah omogočajo vrsto ukrepov.

Ker so za celostno gospodarjenje z vodami pomembni tudi drugi zakoni in podzakonski predpisi, je v nalogi prikazano, kako je sistem gospodarjenja z vodami povezan z drugimi sektorji, da bi v prihodnje lahko pristopili k načrtovanju gospodarjenja z vodami sistematično in celovito.

Vsaka nova zakonska ali podzakonska ureditev bo povzročila dinamično spreminjanje vsebine izdelanega poročila, to pa pomeni, da je izdelana naloga podlaga za nadaljnje neprekinjeno delo pri spremljanju stanja na področju gospodarjenja z vodami. Zavedati se moramo, da izdelava Vertikalnega poročila ni enkratno dejanje. Vertikalno poročilo nam podaja trenutni položaj in ključne elemente gospodarjenja z vodami, ki pa se z usklajevanjem in spremembami zakonodaje lahko spremenijo. Sprotno dopolnjevanje (predvsem glede na izboljšanje kakovosti poročila) mora postati obvezna naloga ministrstva, pristojnega za področje voda.

Po sprejetju novega Zakona o vodah bo treba izdelati dokumente, ki jih bo zakon predpisal. Za strokovnjake s tega področja bo to velika obveznost, pa tudi izziv za stroko, ki se bo morala tudi kadrovsko okrepiti. Za celostno gospodarjenje z vodami potrebujemo strokovnjake, ki bodo sprejemali pomembne in odgovorne odločitve, to pa ni mogoče brez stalnega izobraževanja in spremljanja razvojnih smernic stroke v svetu. Le tako bomo lahko dosegli, da bo celostno gospodarjenje z vodami pomemben dejavnik pri doseganju cilja - zagotavljanje trajnostnega razvoja.

In the analysis of the key legislative, organizational and other ambiguities, it was established that the previous preparations for the new water legislation were not sufficiently suitable, since twelve draft versions of the Water Act have been prepared so far, yet it is still not clear what the final Draft will look like. While waiting for the new legislation, we tend to forget that the still valid articles of the Water Act allow for a number of measures.

Since integrated water management also requires other acts and executive regulations, the thesis presents how the water management system is related to other sectors, so that in the future we can approach water management planning in a systematic and integrated way.

Each new legal and executive regulation will cause a dynamic change in the content of the created report, meaning that the report is the basis for further ongoing work in the development of conditions in the water management field. We must be aware that writing the Vertical Report is not a unique act. The Vertical Report presents the current situation and the key elements in water management, which can change with the harmonization and adoption of legislation. A parallel and complementary work (especially concerning the quality of the report) has to become an obligatory task of the ministry competent(responsible) for waters.

After the adoption of the new Water Act the documents prescribed by the act (i.e.: technical guidelines) will have to be formulated. This will be a great obligation for the experts in the field and also a challenge for this field of expertise, which will have to employ new staff. For integrated water management we need experts who will make important and responsible decisions, and that is not possible without regular education and the monitoring of developmental guidelines from world experts. Only in this way will we be able to achieve the goal of integrated water management leading to the assurance of sustainable development.

VIRI - REFERENCES

Carter, H. (1997a). Management of River Basins, Draft Programme for Management of River Basins, Slovenia Coastal Zone Management Project, Phare ZZ 96 03, 16 str.

Carter, H. (1997b). Sewage Collection, Treatment and Disposal, Draft Proposals of Future Plans, Slovenia Coastal Zone Management Project, Phare ZZ 96 03, 15 str.

Colnarič, N.(1993). Vloga vodne knjige v vodnogospodarskem informacijskem sistemu, magistrska naloga, FAGG GG, Univerza v Ljubljani, 75 str. in 5 prilog.

Correia, F. Nunes (1997). Introduction to WATER 21, Workshop Sustainability indicators and criteria for water policy formulation, Project Water 21, Phase 3, Lizbona, 11 str.

Correia, F. Nunes (1998). EUROWATER PROJECT: Background, objectives and main results, 4th National Congress on Water Resources - Portuguese Water Resources Association, Lizbona, 13 str.

Komisija Evropske skupnosti (1998). Predlog za DIREKTIVO SVETA EUROPSKE UNIJE za določitev okvirjev za ukrepanje Skupnosti na področju politike do voda, COM (97) 614, 97/0067 /SYN), slovenski prevod, verzija junij, delovni osnutek.

Kompare, B. (1997). Strokovne podlage za Koncept gospodarjenja z vodami, Univerza v Ljubljani, FGG-Hidrotehnična smer, str. 60.

Ministrstvo za okolje in prostor (1998). Okoljska pristopna strategija Slovenije za vključitev v Evropsko unijo, 75 str.

Mostert, E.(1998), River basin management in the European Union, How it is done and how it should be done, *European Water Management*, Volume 1, Number 3, str. 26-35.

National Water Authority of Hungary (1997). EUROWATER-CEC Vertical Report. *Institutional framework for water management in Hungary*, 132 str.

OZN, Ekonomska komisija za Evropo (1998). Pregled učinkovitosti okoljske politike Slovenije, 65 str.

Steinman, F. in sodelavci (1993). Strategija vodnega gospodarstva Slovenije. Delovno gradivo, 125 str.

Steinman, F. (1996). Vodnogospodarska strategija - nekaj let kasneje. Zbornik referatov 15. Goljevščkovega spominskega dne, *Acta hydrotechnica 14/12*, str. 9-23.

Umek, T. (1998). Celostno gospodarjenje z vodami na obalnem območju, magistrska naloga, FGG GG, Univerza v Ljubljani, 154 str. in 4 priloge.

Umek, T., Banovec, P.(1998). Celostno gospodarjenje z vodami na slovenskem obalnem območju in regionalne podlage ta vertikalno poročilo, Zbornik referatov 17.Goljevščkovega spominskega dne, *Acta hydrotechnica 16/23*, str. 109-121.

Uprava RS za varstvo narave (1996). Poročilo o povečani ogroženosti zaradi neustreznega vzdrževanja vodnega režima, 25 str.

Zveza vodnih skupnosti Slovenije (1978). Vodnogospodarske osnove.

Publikacije Acta hydrotechnica / Back Volumes of Acta hydrotechnica

LETNIK 1 (1983) / VOLUME 1 (1983)

št.1 (oktober 1983) / No. 1 (October 1983)

Pšeničnik, M. : Razvoj Laboratorija za mehaniko tekočin in Inštituta za zdravstveno hidrotehniko / Development of the Fluid Mechanics Laboratory and the Institute of Sanitary Hydrotechnics

Brilly, M. : Hidrodinamika onesnaženja podzemnih voda, disertacija 25. 4. 1983 / Hydrodynamics of Groundwater Pollution, Doctoral thesis

LETNIK 2 (1984) / VOLUME 2 (1984)

št.2 (junij 1984) / No. 2 (June 1984)

Rakčević, S. : Vzporedni izpust kot nadomestilo za zgornje vodostane pri hidroelektrarnah s francisovimi turbinami, disertacija 27.6.1983 / By-pass Valve as Substitute for Upstream Surge Tanks for Hydroelectric Power Plants with Francis Turbines, Doctoral thesis

LETNIK 3 (1985) / VOLUME 3 (1985)

št. 3 (junij 1985) / No. 3 (June 1985)

Steinman, F. : Prispevek k analizi dinamičnih zakonitosti natege, magistrska naloga 24.11.1983 / A contribution to Analysis of Dynamic Processes in Air-Regulated Siphons, Master thesis

Panjan, J. : Teoretična analiza vplivov na proces sedimentacije, magistrska naloga 17.7.1984 / Theoretical Analysis of the Influences on the Sedimentation Process, Master thesis

1. izr. št. (junij 1985) / Spec. No. 1 (June 1985)

Referati 4. Goljevščkovega spominskega dne 8.3.1985 / Proceedings of the 4th Goljevšček Memorial Day

LETNIK 4 (1986) / VOLUME 4 (1986)

2. izr. št. (junij 1986) / Spec. No. 2 (June 1986)

Referati 5. Goljevščkovega spominskega dne 11.3.1986 / Proceedings of the 5th Goljevšček Memorial day

LETNIK 5 (1987) / VOLUME 5 (1987)

št. 4. (december 1987) / No. 4 (December 1987)

Kovačič, I. : Postopna metoda za račun visokovodnih valov v strugah / Step-by-step Computation Method of Flood Waves in Rivers

Petrešin, E. : Analiza obstoječih analitičnih izrazov koeficientov hrapavosti s predlogom za izboljšavo v vodovodnem omrežju / Analysis of Existing Analytic Expressions for the Roughness Coefficients with a Proposal for their Improvement Concerning Application in Water Supply Network

Pšeničnik, M. : Nova konstrukcija ostnega merila in merske cevke sistema Pitot-Prandtl / New Construction of Point Measuring Device and Pitot-Prandtl Measuring Tube

LETNIK 6 (1988) / VOLUME 6 (1988)

št. 5 (december 1988) / No. 5 (December 1988)

Četina, M. : Matematično modeliranje dvodimenzionalnih turbulentnih tokov, magistrska naloga 20.6.1988 / Mathematical Modelling of Two-Dimensional Turbulent Flows, Master thesis

3. izr.št. (marec 1988) / Spec. No. 3 (March 1988)

Referati 7. Goljevščkovega spominskega dne 11.3.1988 / Proceedings of the 7th Goljevšček Memorial Day

LETNIK 7 (1989) / VOLUME 7 (1989)

št. 6 (april 1989) / No. 6 (April 1989)

Mikoš, M. : Urejanje hribovskih vodotokov, magistrska naloga 20.6.1988 / Control of Mountain Streams, Master thesis

4. izr. št. (april 1989) / Spec. No. 4 (April 1989)

Referati 8. Goljevščkovega spominskega dne 27.3.1989 / Proceedings of the 8th Goljevšček Memorial Day

LETNIK 8 (1990) / VOLUME 8 (1990)

št. 7 (marec 1990) / No. 7 (March 1990)

Gorišek, M. : Simulacija infiltracije padavin v drobnih in grobih peskih s primesmi proda, magistrska naloga 19.7.1989 / Simulation of Infiltration in Coarse and Fine Sands with Gravel, Master thesis

Pleško, T. : Endogena respiracija aktivnega blata v procesu čiščenja odpadnih vod v odvisnosti od temperature vode, magistrska naloga 28.9.1989 / Endogenous Respiration of the Activated Sludge in Sewage Treatment Process in Dependence of Water Temperature, Master thesis

Krajnc, U. : Prognoza spremembe kvalitete Save v akumulacijskem bazenu HE Vrhovo z matematičnim modelom, magistrska naloga 7.11.1989 / Modeling Changes in the Sava River Water Quality Caused by Impunding Water at the Vrhovo Hydroelectric Power Plant, Master thesis

št. 8 (december 1990) (Ob natisu pomotoma označena kot št. 7) / No. 8 (December 1990)

Čehovin, I. : Meritve hidrodinamičnih veličin na hidravličnih modelih, magistrska naloga 7.6.1990 / Measurement of Hydrodynamic Quantities in Hydraulic Models, Master thesis

Marinček, M. : Izračun visokovodnih valov na Savinji s pomočjo kvazidimenzionalnega matematičnega modela, magistrska naloga 9.5.1990 / Modelling Flood Wave Propagation in the Savinja River Using a Quazi Two-Dimensional Mathematical Model, Master thesis

LETNIK 9 (1991) / VOLUME 9 (1991)

ni publikacij / no publications

LETNIK 10 (1992) / VOLUME 10 (1992)

št. 9 (oktober 1992) / No. 9 (October 1992)

Smith, M.B. : Uporaba modelov z distribuiranimi parametri pri obrambi urbaniziranih površin pred poplavami, disertacija 4.5.1992 / A Distributed Parameter Hydrologic Model for Urban Stormwater Protection, Doctoral thesis

Globevnik, L. : Uporaba GIS-OV pri iskanju optimalnih vodnih virov za namakanje Zgornje Vipavske doline, magistrska naloga 15.5.1992 / The GIS Based Analysis of Optimal Water Resources for Irrigation in Upper Vipava Valley, Master thesis

LETNIK 11 (1993) / VOLUME 11 (1993)

št. 10 (november 1993) / No. 10 (November 1993)

Mikoš, M. : Fluvialna abrazija prodnatih plavin, disertacija 21.6.1993 / Fluvial Abrasion of Gravel Sediments, Doctoral thesis

LETNIK 12 (1994) / VOLUME 12 (1994)

št. 11 (maj 1994) / No. 11 (May 1994)

Širca, A. : Modeliranje transporta polutantov po metodi sledenja delcev, magistrska naloga 23.12.1992 / Modelling of Pollutant Transport by Particle Tracking Method, Master thesis

Kobold, M. : Določanje minimalnih pretokov vodotokov v Sloveniji po metodologiji FRIEND, magistrska naloga 7.12.1993 / The Low Flow Estimation of Slovene Streams by FRIEND Methodology, Master thesis

LETNIK 13 (1995) / VOLUME 13 (1995)

ni publikacij / no publications

LETNIK 14 (1996) / VOLUME 14 (1996)

št. 12 (maj 1996) / No. 12 (May 1996)

Zbornik referatov 15. Goljevščkovega spominskega dne 14.marec 1996 / Proceedings of the 15th Goljevšček Memorial Day

št. 13 (maj 1996) / No. 13 (May 1996)

Gorišek, M. : Difuzijsko gibanje snovi raztopljenih v vodi skozi porozni prostor iz drobnozrnatih materialov, disertacija 5.6.1995 / Diffusion of Chemical Species Dissolved in Water in Porous Medium of Fine Grain Soils, Doctoral Thesis

št. 14 (avgust 1996) / No. 14 (August 1996)

Širca, A. : Modeliranje hidrodinamike in transporta živosrebrovih spojin v Tržaškem zalivu, disertacija 27.5.1996 / Modelling of Hydrodynamics and of Transport of Mercury Compounds in Trieste Bay, Doctoral Thesis

LETNIK 15 (1997) / VOLUME 15 (1997)

št. 15 (januar 1997) / No. 15 (January 1997)

Krzyk, M. : Dvodimenzijski matematični model konvekcijsko-difuzijskega transporta snovi in lebdečih plavin v površinskih vodah, magistrska naloga 8.11.1996 / Two-Dimensional Mathematical Model of Convective-Diffusion Transport of Concentration and Suspended Load in Free Surface Flows, Master Thesis

št. 16 (april 1997) / No. 16 (April 1997)

Panjan, J. : Procesi kosmičenja z vidika usedanja in zgoščevanja suspendiranih delcev pri čiščenju odpadne vode, disertacija 10.3.1994 / Flocculation Process in the Light of Sedimentation and Thickening of Suspended Particles in Waste Water Treatment, Doctoral Thesis

št. 17 (julij 1997) / No. 17 (July 1997)

Zbornik referatov 16. Goljevščkovega spominskega dne 13.marec 1997 / Proceedings of the 16th Goljevšček Memorial Day

št. 18 (avgust 1997) / No. 18 (August 1997)

LOC Proceedings of oral presentations FRIEND'97, Postojna 1 - 4 October 1997, Slovenia / Zbornik referatov Mednarodne konference FRIEND'97, Postojna 1. - 4.oktobra 1997, Slovenija

št. 19 (avgust 1997) / No. 19 (August 1997)

LOC Proceedings of poster presentations FRIEND'97, Postojna 1 - 4 October 1997, Slovenia / Zbornik posterjev Mednarodne konference FRIEND'97, Postojna 1. - 4.oktobra 1997, Slovenija

št. 20 (november 1997) / No. 20 (November 1997)

Čenčur-Curk, B. : Terenski eksperimentalni poligoni kot osnova pri študiju prenosa snovi v nezasičeni kraško-razpoklinski kamnini, magistrska naloga 24.10.1997 / Experimental Field Sites as a Basis for the Study of Solute Transport in the Vadose Zone of Karstified Rock, Master Thesis

LETNIK 16 (1998) / VOLUME 16 (1998)

št. 21 (marec 1998) / No. 21 (March 1998)

Šifrant porečja Donave / Danube river basin coding

št. 22 (november 1998) / No. 22 (November 1998)

Vodopivec, N. : Bilanca hranil, proizvodnje in stabilizacije blata pri različnih postopkih biološkega čiščenja odpadnih voda, magistrska naloga 30.6.1998 / Nutrient Balances, Sludge Production and Sludge Stabilisation at Different Waste Water Treatment Technologies, Master Thesis

št. 23 (december 1998) / No. 23 (December 1998)

Zbornik referatov 17. Goljevščkovega spominskega dne 27.marec 1998 / Proceedings of the 17th Goljevšček Memorial Day

LETNIK 17 (1999) / VOLUME 17 (1999)

št. 24 (junij 1999) / No. 24 (June 1999)

Umek, T. : Celostno gospodarjenje z vodami na obalnem območju, magistrska naloga 12.11.1998 / Comprehensive Water Management in the Coastal Region, Master Thesis

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1.2 *Acta hydrotechnica* izhaja dvakrat na leto v obliki zaporednih številk, dodatno razvrščenih v letnik.

1.3 *Acta hydrotechnica* je namenjena objavam prispevkov strokovnjakov in raziskovalcev s področja vodarstva in hidrotehnike. *Acta hydrotechnica* objavlja prispevke s področja vodarstva in hidrotehnike v obliki izvirnih in preglednih znanstvenih člankov, preliminarnih objav in strokovnih člankov.

1.4 Prispevki so napisani enakovredno v slovenskem in angleškem jeziku, kar zagotavlja ohranjanje in razvijanje slovenskega strokovnega izrazoslovja na področju vodarstva in hidrotehnike ter obenem zagotavlja berljivost revije v tujini. Dolžina prispevka je omejena na 30 000 znakov. Dolžina prispevka, ki je povzetek magistrske naloge ali doktorskega dela, je omejena na 100 000 znakov. Prednost pri objavi imajo krajši prispevki.

1.5 Prispevke je treba oddati v elektronski in pisni obliki na uredništvo *Acta hydrotechnica*.

1.6 Vsi prispevki so oblikovno podvrženi uredniški recenziji v skladu s temi navodili in vsebinsko podvrženi recenziji dveh strokovnjakov s področja prispevka.

1.7 Pri oblikovanju prispevkov za *Acta hydrotechnica* je treba upoštevati slovenske standarde za dokumentacijo in informatiko.

1.8 Za vsebino prispevkov in prevod v angleški jezik odgovarjajo avtorji.

1.9 Vsi prispevki so lektorirani, tako slovensko kakor tudi angleško besedilo.

2. Oblikovanje prispevkov za *Acta hydrotechnica*

2.1 Vsak prispevek mora biti sestavljen iz naslednjih enot, enakovredno podanih v slovenskem in angleškem jeziku:

- ❑ naslov prispevka
- ❑ podatki o avtorju ali avtorjih
- ❑ izvleček (abstract) in ključne besede (key-words)
- ❑ glavno besedilo
- ❑ zahvala (acknowledgements) naročniku naloge, raziskave ali študije (neobvezno)
- ❑ pregled uporabljenih izrazov (terminology) in oznak (notations) (neobvezno)
- ❑ viri (references)

Njihov natančnejši opis je podan v naslednjih odstavkih.

2.2 Naslov prispevka naj bo jasen, jedrnat in naj izraža bistvo prispevka. Dolžina naslova je največ 90 znakov, razen ko gre za povzetke magistrskih in doktorskih del, kjer je lahko naslov prispevka enak uradnemu naslovu dela.

2.3 Podatki o avtorju obsegajo ime in priimek, opis znanstvene strokovne stopnje in poln naslov delovnega mesta.

2.4 Vsak prispevek mora spremljati izvleček (abstract) v obsegu okoli 150 besed v vsakem od obeh jezikov. Izvlečka morata strnjeno podati celoten prispevek vključno z zaključki.
Avtor naj navede do 8 ključnih besed.

2.5 Glavno besedilo naj bo razdeljeno po decimalnem sistemu (1. PRVO POGLAVJE, 1.1 PRVO PODPOGLAVJE, 1.1.1 Zadnja poddelitev).
Vire v besedilu navedemo z imenom avtorja in letnico objave (Manning, 1892), (Strickler & Nikuradse, 1924b), (Einstein et al., 1951), (Colebrook, 1932; 1934).
Merske enote naj bodo v skladu z veljavnim sistemom SI. Datum naj bo podan po naslednjem vrstnem redu : dan-mesec-leto (23.4.1998).
Kratice in opombe pod črto naj se uporabljajo le izjemoma.

Ilustracije (preglednice in slike) v besedilu naj bodo skozi vse besedilo enotno oštevilčene z arabskimi številkami in naj se ne okrajšujejo (preglednica 1, slika 14, Table 2, Figure 4). Praviloma mora biti ilustracija dvojezična. Če je ilustracija privzeta iz drugega že objavljenega dela, je potrebno ob njenem opisu dodati tudi njen izvor.

Enačbe v besedilu naj bodo oštevilčene z arabskimi številkami v okroglih oklepajih enotno skozi vse besedilo, pri daljših prispevkih (več kakor 1 avtorsko polo) lahko tudi enotno za vsako poglavje posebej. Navajanje enačb naj v besedilu ne bo okrajšano (enačba (11), enačba (2.17)).

2.6 V besedilu uporabljeni viri morajo biti navedeni v abecednem vrstnem redu in neoštevilčeno, na koncu prispevka, enotno za oba jezika. Če je vir pisan v jeziku, ki ni angleški, naj naslovu vira v oklepaju sledi prevod naslova v angleščino, na koncu navedbe pa dostavek, v katerem jeziku je pisan, npr. (in Slovenian). Glede na vrsto mora avtor navesti vire takole:

- knjige : Schumm, S.A., Mosley, M.P., Weaver, W.E. (1987). *Experimental fluvial geomorphology*. Wiley, New York, 413 p.
- posamezne prispevke v knjigi : Large, A.R.G., Petts, G.E. (1994). “Rehabilitation of River Margins” in P. Calow, G.E. Petts, Eds., *The Rivers Handbook - Volume 2*. Blackwell, Oxford, 401-418.
- diplomska, magistrska in doktorska dela : Širca, A. (1996): Modeliranje hidrodinamike in transporta živosrebrovih spojin v Tržaškem zalivu (Modelling of Hydrodynamics and of Transport of Mercury Compounds in Trieste Bay). Unpublished Doctoral Thesis, Univerza v Ljubljani, FGG, 164 p. (in Slovenian).
- objave, kjer je avtor pravna oseba (skupinski avtor) : VGI (1993). Vodnogospodarski ureditveni načrt Save Dolinke - idejna zasnova (Water Management Master Plan of the Upper Sava River). VGI, Ljubljana, Report C-161 (in Slovenian).
- članke iz zbornika del : Krzyk, M., Pemič, A. (1995). Primjena vrtložnog prigušivača u hidrotehničkim sistemima pod tlakom (Application of Vortex Diode in Pressurised Hydrotechnical Systems). Proceedings of the 1st Croatian Conference on Waters "Sustainable Developement and Water Management", Dubrovnik, Book 2, 369-376 (in Croatian).
- članke iz znanstvene in strokovne revije : Lamouroux, N., Souchon, Y., Herouin, E. (1995). Predicting velocity frequency distributions in stream reaches, *Water Resources Research* **31**, 2367-2375.
- dela, ki jim ni mogoče določiti avtorja : Zakon o varstvu okolja (1993). Uradni list RS, št. 32, 1234. Environmental Protection Act (in Slovenian).