

REPORT  
on Strategic Environmental Impact  
Assessment of the  
Draft Water Code of the Republic of  
Armenia

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## 1.INTRODUCTION

The environmental impact assessment process (EIA) for projects, programs, concepts and the financial assistance was approved officially for the first time in 1969 by the law on national environmental policy accepted in the USA.

The mentioned process was developed through the legal directive of the Economic Commission for Europe (ECE) in 1985, by which the minimum requirements to the EIA were established.

In 1987 the UN Environmental Program (UNEP) accepted a document on objectives and principles of EIA.

In 1991 twenty six nations of the UN/ECE signed the International Convention on Environmental Impact Assessment in a Transboundary Context, by which the signing parties had committed to create and apply national EIA processes for activities planned in their countries.

In spite of the fact that the Republic of Armenia ratified the mentioned Convention in 1996, Armenia has already adopted the RA Law on "Environmental impact expertise" and a number of by-laws since 1995.

The mentioned Law ratified the mandatory implementation of EIA process both for the planned economic, social and other activities (construction, reconstruction, expansion, technical reconstruction, liquidation) and concept papers (concept paper, project, complex scheme, general plan). Unfortunately, the Law does not intend EIA process for policies and laws, in spite of the fact that they, as well as concept papers, are ranked as strategic documents.

At present, paying a due attention to the environmental impact of activity of strategic importance, UN ECE develops the Strategic Environment Assessment (SEA) Protocol, the approval of which is planned in the meeting within the framework of "Environment for Europe" process by European countries' Ministers of Environment, to be held in 2003 in Kiev. In essence, the SEA process can be called "Strategic Environmental Impact Assessment" (SEIA).

Carrying out SEIA process in the first stage of document development of strategic importance is aimed at provision of excluding or reducing to the extent possible their adverse impact on human health and environment.

This SEIA report highlights the issues having impact on environment, particularly those regarding economic and social problems of water resources and water systems, comparative analysis of the existing Water Code and the presented new Draft, solutions provided in international treaties related to the mentioned issues, identification of environmental impacts, interpretation and proposal of mitigation measures.

ARD Inc., continuing the implementation of the USAID-financed Sustainable Water Resources Management Project, has provided technical assistance for the national Water Code development. The Project's Workplan includes the implementation of the EIA of the Draft Water Code. During the Working Group meeting, organized by the Project, the individual Scope of Works were approved and it was agreed to consider the N5 Draft Water Code (dated April 29, 2002) as a concept document and carry out its environmental impact assessment (EIA) from the strategic point of view, i.e. Strategic Environmental Impact Assessment (SEIA).

## 2. BACKGROUND

Integrated water resources management and planning include complex solutions to a great number of issues and problems. In this situation it is necessary to make visible inter-relations of all issues and approaches. Any issue regarding water resources management can be viewed only in terms of a number of perspectives for various sector developments, including:

- water balance component,
- economic and financial component,
- engineering and technological component,
- environmental and water quality component,
- institutional and legal component,
- social and healthcare component.

Like in the most of the countries of the world, in Armenia as well, the lack of a holistic approach to water has led to a very dispersed and confusing system of water management. Responsibilities over the resource management, and the construction of dams, pipelines, pumping stations, treatment plants, sewerage systems, their maintenance and operation are dispersed around a variety of administrative departments. This distribution is so unclear and not substantiated that, as such, there is no "water sector" as it is

Thus water management is lost within sector interests.

As the water resource is finite and its utilization needs to be equitable, efficient and planned, all sector strands should be inter-woven.

The Water Code of the RA in force was adopted in February 1992 by the Supreme Council of the RA in accordance with the legal system acting then. Under present conditions when the bodies of central and local governance are clearly divided, the Water Code in force does not clearly specify any management agency that is responsible for water resources and water systems management. Therefore, the number of authorities dealing with water resources management, use and protection is great enough, which hinders the implementation of reforms in water sector.

With the purpose of clarification and dividing of water use, protection and water systems operation functions, state bodies for water systems operation and water resources management were established during 2001-2002 according to the RA Government's decisions.

However, lack of the requirements in the existing Water Code to develop internationally sound water strategy, policy and programs hinders effective work of the institutions. In proper activity of

the mentioned institutions and in the sustainable management of the sector, the legislative base has a great role. Thus, the Water Code, which has been adopted in 1992 does not correspond to the present development policy of the country.

Though it is stated in the existing Water Code that water use is payable and that all water users must pay for the water supplied, however, in terms of economic and social problem solution, it does not contain solutions for such principle issues and approaches, as:

- principles of economic regulation of water resources and water systems use, rehabilitation and protection, systems of economic incentives for water use, problems of economic and financial nature, including: fees for water resources use and pollution, efficiency of water systems use, efficient mechanisms for providing financial assistance,

- bases for establishment of fees and charging mechanisms in water use field, as well as provision of the social equity,

- mechanisms for private sector (investments) involvement, as well as infrastructures development, introduction of alternative forms for water systems use aimed at improvement of the systems use and promotion of economic efficiency,

- problems of social nature, which will take into account water availability, allocation priorities and equity. Besides, the existing Water Code does not provide also with the forms, mechanisms, regulations of private investment involvement in water supply, wastewater sectors, as well as water use permits and making water systems use permits as a subject for business.

In the present Water Code definitions of eco-systems and aquatic eco-systems, wetlands, continental eco-systems and landscapes protection, and the concepts of minimum environmental flows, ecological standardization, ecological emergency, protection of aquatic and adjacent eco-systems, provision of ecological stability, limiting norms, ecological condition of water resources, present ecological condition of environment, transboundary impact and information provision are lacking.

Lack of provisions on transboundary impact, public participation and information availability in the existing Water Code is also a major drawback.

In water use and protection field, lack of such concepts as classification of water objects (by area and importance), approval of quality, quantity and conditions of minimum reserved flows of water intake and wastewaters, assessment and compensation of damage, efficient use of water objects potential, principles of water market creation, water use rights and resolution of disputes among water users in water relationship, environmental and functional classification of water protection objects, inspectors' supervision and other similar issues is considered a major drawback.

Water policy, water use permit and water protection conditions, water users' obligations, infringement penalties, mandatory nature of measurement and reporting in water use and wastewater removal process, harmful impact of waters are ranked to issues of declarative nature, or issues not having application mechanisms.

A part of the existing Water Code's provisions are in conflict with the RA Civil Code, RA Land Code, a number of other environmental laws, numerous norms are of "reference" nature.

Being a signatory to a number of environmental conventions in 1992, Armenia ratified the UN Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the 1998 Aarhus Convention) in 2001. Some requirements of these conventions do not correspond to the norms of the national legislation. Thus, for harmonization with

those norms, it was stated by 1995 RA Constitution that in case of discrepancies between international treaties and national legislation, the former is predominant.

Therefore, ratification of a number of environmental conventions and signing of agreements and treaties by Armenia made it necessary to change national legal acts in accordance with the international legal norms.

The above mentioned became a dictating necessity for developing a new Water Code, during which most of the mentioned shortcomings were taken into account and eliminated and a number of new provisions were added, analysis of which is provided in the following chapters.

In the new draft Water Code a number of new concepts are provided, water use permitting and water use permit transfers are simplified, a new simple and functional institutional management system for water resources use and protection is suggested, mechanism of economic incentives application is included, solution of ecological issues related to water is substantiated, provision of hydro-technical structures' safety and order of actions in emergencies, etc. are clarified, the need of public participation in the decision making processes within the is reflected, as well as the further steps in a form of legal acts that are going to be adopted after the enactment of the Code and will provide implementation of the Code are mentioned.

In the draft Water Code a major importance is given to water use permit issuing, water systems use permit, transfer of a right to use state-owned water systems, taking into account social situation and possibilities of its improvement during determination of water quality standards and the norms limiting environmental impact.

### 3. PURPOSE AND PRINCIPLES of SEIA

The purpose of the SEIA is to identify perspective impacts of the Water Code and other social and economic consequences and their negative impact on human health, nature protection and social and economic natural development, as well as possibilities of mitigation of negative impacts and making a decision on the acceptance of the Water Code from the environmental perspective.

The main principles of SEIA are:

- hypothesis of potential environmental impact of the Code,
- mandatory nature of environmental impact assessment process,
- prediction of the assessment,
- objectiveness of the assessment,
- review of alternative versions, including zero version,
- complex review of impacts,
- transparency of the process,
- public involvement,
- scientific justification,
- completeness and reliability of information,
- consideration of international treaties.

## 4. SCOPE AND OBJECTIVES OF SEIA

The scope of SEIA is determined by the national environmental legislation, as well as international treaties and agreements.

Legislative basis shall provide conditions for normal vital activity of population, implementation of the main principles of the SEIA towards environmental protection and efficient use of natural resources.

The main objectives of the SEIA are:

- analysis of the Code and possibilities and advisability of its alternative versions, taking into account all ecological limitations,
- identification and assessment of all possible types of impacts of the Code on human health, environment, economic and social conditions and determination of the degree of the impacts magnitude,
- development of measures for prevention, elimination or mitigation of negative and harmful impacts and their consequences, during emergencies as well,
- effective and proper use of natural resources,
- prohibition of activities having irreversible impact on the environment,
- public involvement in SEIA process and taking into account public opinion.

## 5. APPLIED APPROACHES AND METHODOLOGY

During preparation of the SEIA of the draft Water Code, traditional approaches used in a number of countries have been used, which are described in numerous sources of literature.

During recent decades governments and public unions in many countries pay special attention to the issues of human health and environment protection, rehabilitation and improvement. Strategies for legislative, procedural and technical assessment of possible environmental changes are developed, which will serve as basis for sustainable environmental policy.

SEIA is one of the powerful tools for environmental policy implementation at international, regional, national and local levels and is a continuous process.

The following approaches have been applied when preparing SEIA for the Draft Water Code:

- to start the process of expert assessment from initial stages of activity,
- to carry out expert assessments on the basis of appropriate environmental legal acts, norms and standards,
- to comprehensively and transparently review environment situation before draft Water Code enforcement and describe in detail possible impacts and environmental changes as a result of its enforcement, including the issues related to provision of economic and social equity of water resources and water systems use, rehabilitation and protection,
- to objectively discuss alternative versions,
- to apply the best available examples for reduction of irrevocable adverse impacts,
- to provide public participation in the SEIA process.

The following methods are used for the environmental impact assessment: expert groups, lists, matrixes, jointed maps analysis, networks, flow diagrams and imitation models.

Based on the content and volume of initial materials, the method of expert groups have been chosen from the above mentioned seven methods, for the SEIA of draft Water Code. To achieve the goal, the method of expert groups provides maximum use of the provisions needed for preparation of SEIA, as a part of general planning and management process and serves for determination of limit range of the impact during the Code enforcement. However, this method does not reveal specific indices subject to more detailed study. The main advantage of the given method is that it gives the possibility to identify the list of database needed for determination of anticipated environmental impacts before the law enforcement. The given method serves also for giving main idea on the proposed Code or a part of it for discussing alternative versions.

The method of expert groups has also a number of disadvantages, among which the following can be mentioned:

- not accurate determination of impacts integrity,
- unclear sequence of impacts identification,
- inefficiency of each impact assessment because of existence of various expert groups,
- assessment subjectivity, which can not be corrected even by involving more experts, as a greater number of expert opinions can increase the assessment objectivity only in the case of guaranteeing independence of separate opinions, which is almost unachievable.

## 6. ALTERNATIVE VERSIONS

In general, according to the requirement of SEIA carried out during development of any new law, the alternative versions of the law, including the zero version, have to be reviewed.

In chapter "Justification" provided above it was proved that because of the implemented political, legal, institutional and other reforms, the existing Water Code has lost its actuality and efficiency. It has resulted the water sector being appeared in a poor condition. Thus, as a zero version the acting Water Code is chosen. Comparison of the new draft Water Code provisions with the zero version are provided in the table below.

The alternative versions of draft Water Code (except of zero version) are essentially a comparison and analysis of the texts considered throughout of the entire course of drafting process and improved from a version to version.

As a pre-requisite for new Water Code development was acceptance of the Concept paper on "Water Sector Reform" by the RA Government in February 2001. Then a group of local experts developed the first draft of the Water Code where the possible issues regarding water resources and water systems management were reviewed. Afterwards the first draft was revised twice in fall 2001. The third version of the Water Code was published in January 2002 with the purpose of attracting a wide public discussion.

Discussions within the working group were carried out at Tsaghkadzor seminar during which a number of supplements and corrections were suggested. Recommendations of international experts who actively participated in the discussions, positively influenced the further development of the draft Water Code.

Based on extensive discussions, as well as recent international experience of water code development, the third version of the Code was re-edited twice, the articles in the text were re-edited, classified by logical structure, a part of them was moved to transitional provisions for determination of further steps to be implemented. During the draft improvement more than 1000 suggestions were provided as a result of several professional seminars, two public hearings, discussions with various stakeholders, around 90% of which was accepted fully or partially. However, almost no conceptual changes were made. As a result, almost all the chapters of the Water Code were strengthened, and the ideas and concepts included in 219 articles of the third version were compressed and summed up only in 121 articles of the fifth version.

The fifth, last version of the draft Water Code was submitted to the discussion of the RA Government on April 29, 2002.

## 7. BRIEF DESCRIPTION OF WATER RESOURCES

The rivers in Armenia are mountainous and mainly are tributaries to Kura and Araks rivers. There are 14 main rivers longer than 35 km and more than 200 rivers and streams with less than 10km length. Many of the latter are not perennial. The rivers are fed from precipitation and groundwater. In summer and fall when water demand is on a peak, the annual available flow is 20-25%. Winter flow is around 10-12% of total annual flow, while in spring it is around 55-70 %.

Water runoff of the Republic's rivers is annually 6.2 bil. m<sup>3</sup>, and another 1.2 bil. m<sup>3</sup> the expense of transboundary rivers Araks and Akhouryan.

The significant natural water objects are Lake Sevan with 1238.5 km<sup>2</sup> area and 33.2 bil. m<sup>3</sup> volume, and rivers Araks with 2.72 mln. m<sup>3</sup> annual flow, Debed -1169 mln. m<sup>3</sup>, Vorotan - 679 mln. m<sup>3</sup>, Arpa 679 mln.m<sup>3</sup>, Aghstev - 290 mln. m<sup>3</sup>, etc.

From artificial water objects are around 80 reservoirs of the Republic with 1067 mln.m<sup>3</sup> general capacity (Akhouryan - 525 mln. m<sup>3</sup>, Spandaryan - 277 mln.m<sup>3</sup>, Arpi - 105 mln. m<sup>3</sup>, Aparan 91 mln.m<sup>3</sup> and other reservoirs), of which 72 are of hydro-ameliorative importance.

Termination of industrial activity as a result of Soviet Union collapse, has decreased the industrial water consumption. According to the data from State statistic service of the RA surface water was maximum used for industrial purposes in 1985 (518mln.m<sup>3</sup>). In 1989 this quantity was reduced to 408 mln.m<sup>3</sup>. 208.9 mln.m<sup>3</sup> quantity was recorded in 1995, and 85 mln.m<sup>3</sup> – in 2000. Irrigated areas were also reduced, thus water consumption with this purpose: in 1985 2.337 mln.m<sup>3</sup> was used, until 1989 - 1.956 mln.m<sup>3</sup>, and in 2000 - 1195 mln.m<sup>3</sup>. Minimum volume was recorded in 1995 – 641 mln.m<sup>3</sup>. Water use for household purposes was correspondingly 616 mln.m<sup>3</sup> in 1985, 771 mln.m<sup>3</sup> in 1989, 627 mln.m<sup>3</sup> in 1995 and 600 mln.m<sup>3</sup> in 2000.

According to the data of pilot projects on water resources qualitative monitoring and natural environment monitoring, implemented within the framework of the World Bank financed "Integrated water resources management project", higher concentrations of ammonium and heavy metals (exceeding PLC) occur downstream large cities. The results of chemical analyses show that the concentrations of the mentioned substances are higher in water objects adjacent to Gyumri and

Yerevan cities, which are mainly conditioned with household wastewater discharge (for example, flow formation from asphalt covered surfaces).

As the data show, chemical indices in surface waters at present are mainly lower than the standard, or slightly exceed the corresponding standards. Concentrations of mercury, zinc and ammonium sometimes exceed PLC values, however they are not significant. Radiation pollution of water objects is within the allowable limits.

## 8. COMPARATIVE ANALYSIS OF THE EXISTING WATER CODE AND THE NEW WATER CODE FROM THE PERSPECTIVE OF IDENTIFICATION OF ENVIRONMENTAL IMPACTS AND THE MITIGATION OF NEGATIVE IMPACTS

In the first column of the Table provided below the list of the main problems and issues related to water resources management, protection and use that are included in the draft Water Code is given. In the second and third columns the numbers of articles regarding the given problem or issue in the existing Water Code and new draft Water Code. Therewith, the letters A, B, and C given in the column indicate:

- A – The issue is fully covered by the Code,
- B – The issue is partially covered by the Code,
- C – The issue is not covered by the Code.

In the fourth column the shortcomings in the acting Water Code are described (if the Code considers the given problem and issue) and the negative environmental impacts caused by the shortcomings are assessed. In the same column the contents of new articles intended by the new draft Code for elimination of the negative impacts, as well as all anticipated environmental impacts (positive and negative) in the case of the new Code enforcement. If negative impacts will occur as a result of the new Code enforcement, then in the fifth column the article of mitigating measure intended by the draft Code is given, as well as description of environment condition improvement (negative impact reduction) as a result of the measures implementation.

As the problems and issues and the corresponding articles are viewed in various terms in SEIA (management, economy, healthcare, ecological, etc.), their repetition in the columns is possible.

In the case, if no mitigation measure is intended by the draft Water Code for any problem or issue, or the planned measure does not fully reduce the negative environmental impact, the issue on making an amendment or correction is raised.

Comparative Analysis of the Existing Water Code (EWC) and the Draft Water Code (DWC) in terms of Environmental Impact

Table 1

| DWC problem and issue  | Articles related to the issue |                    | Interpretations of EWC and DWC and environmental impacts   | Means/measures (Articles) in DWC towards mitigation of negative impacts   |
|--|-------------------------------|--------------------|--|---|
|  | EWC                           | DWC                |  |   |
| Concepts used in DWC   | <b>C<br/>1</b>                | <b>A<br/>1</b>     | In the EWC the concept of a unified purpose in water relations is lacking. DWC unifies the concepts, which will result in the same understanding and application of norms that will lead to achievement of the Code's objectives, i.e. protection and improvement of environment quality, including WRs.   |   |
| Economic regulation principles of WR and WS use, rehabilitation and protection | <b>B<br/>25</b>               | <b>A<br/>5, 76</b> | DWC envisages that fees charged for water shall promote efficient use, rehabilitation and protection of water resources and shall be established at a due level, to provide collection of payments for the use of water resources, financing for their rehabilitation and protection, cost recovery for effective water management, cost recovery for the operation and maintenance of water systems, water supply and/or sanitation systems, establishment of systems of economic incentives for effective use.<br>Establishing principles of economic regulation of use, rehabilitation and protection of water systems will give the possibility to implement financial and organization measures needed in this field in time and with full volume.<br>In case if the economic regulation principles provided in DWC are not completely followed, positive impacts of the new Code will be reduced.  | DWC envisages development of corresponding normative and legal acts providing, regulating and promoting enforcement of the Code (including those mentioned in Article 121). |
| National water policy  | <b>C</b>                      | <b>A<br/>1, 15</b> | Lack of necessary norms on national water policy in the EWC led to negative consequences, WR use without necessary scientific substantiation, without strategic measurement and development of perspective objectives.<br>DWC ratifies application of scientific approaches in determining, developing and approving the content of national water policy, which will assist providing water demand of various economic branches, taking into account also the issues of WR availability, rehabilitation and protection in the future.<br>Such an approach will provide WR rational use, protection and environment improvement.<br>DWC intends clarification of the policy for WR management, establishment of perspective objectives and problems of use and protection strategic development, evaluation of quantity and quality of waters subject to allocation. Provisions of the National Water Policy are adeopted by law at the submission of the RA Government. |   |
| Main principles of WR and WS management, use and protection                    | <b>B<br/>2</b>                | <b>A<br/>5, 99</b> | Ratification of main principles of WR and WS management, use and protection in DWC will result in joint actions of water users and law enforcement bodies, which will lead to efficient use and protection of WRs , as well as nature protection.  |   |
| National water   | <b>B</b>                      | <b>A</b>           | In EWC the necessary norms related to National Water program development are   |   |

|   |                    |   |   |  |
|---|--------------------|---|---|--|
| program   | <b>1</b>           | <b>1, 16</b>  | <p>lacking.</p> <p>DWC includes perspective development of WR and WS management and protection, promotes WS classification and water standards provision in water basin management areas, includes water use permit fees, promotes implementation of measures towards WR monitoring improvement and pollution prevention, application of modern technologies, provides public awareness and development of corresponding education programs, establishes ecological emergency zones and ecological disaster zones in water basins, promotes biodiversity maintenance and prevention of adverse impact on aquatic ecosystems.</p> <p>DWC secures application of scientific approaches in determining, developing and approving the content of national water policy.</p> <p>Similar approach will provide rational use and protection of WRs and environment improvement.</p> <p>National Water Policy is adopted by law at the submission of the RA Government.</p> |  |
| Water basin management plan   | <b>C</b>           | <b>A<br/>1, 17,<br/>121/<br/>5/38,<br/>121/<br/>5/58,<br/>121/7/2</b> | <p>Water basin management plans ratified in DWC promote decentralization of WRs management, providing inter-related balance between water users and environment.</p> <p>As a negative result the need to involve additional financial means can be mentioned.</p>   | DWC envisages rendering of financial means (121/5/38, 121/5/58, 121/7/2, 16/1/6, 16/2/11)  |
| National water reserve  | <b>C</b>           | <b>A<br/>1, 18</b>  | <p>DWC establishes the minimum water quantity that must be kept for future generations. Such an approach will provide rational use and protection of WRs and promote environment improvement.</p> <p>As a negative result it can be noted that prohibition of water use from national water reserves can be an obstacle for economic development (particularly limitation of water extraction from Sevan will reduce the volume of energy generation).</p>  | DWC envisages that National Water Program will include regulatory measures (including flow regulation, flow diversion from one basin to another, introduction low water or dry technologies, etc.) (16/1, 16/2, 16/ 3) |
| Protection of Natural Reserves and Water Resources Considered as National Monuments | <b>A<br/>58-60</b> | <b>A<br/>105,<br/>121/<br/>5/24</b>                                   | Reflection of these issues in DWC promotes WRs quality maintenance, aquatic ecosystems protection, minimizes their degradation, depletion, littering.   |  |

|  |                               |   |  |   |
|--|-------------------------------|---|--|---|
| Satisfaction of the essential needs of the present and future generations.<br>Acceptance of conjunctive and integrated management of ground and surface water resources. | <b>B</b><br><b>20,36,38</b>   | <b>B</b><br><b>5/1,5/10</b>                   | The language is not clear, which might cause weakening of the sense of priorities of human life, health and environment and consequent respective negative impacts are possible.   | DWC envisages to clarify it during development of the RA law on drinking water (120,121/4, 121/5/45): |
| Irrigation water Supply Management   | <b>B</b><br><b>43, 44, 46</b> | <b>A</b><br><b>61, 101 121/5/22, 121/5/30</b> | Managed irrigation envisioned by the DWC will promote reduction of salination, erosion, weathering of irrigated lands, will increase land productivity, economic growth with its positive social consequences.   |   |
| Importance of use and protection components in WR policy   | <b>B</b><br><b>90, 21</b>     | <b>A</b><br><b>121/4, 15</b>                  | In EWC use and protection components, provisions in WR policy are not taken into account. In DWC provisions of use and protection making a part of WR policy, their objectives and ways and mechanisms for achieving them are ratified. Such legislative regulation law will have its positive impact on WR quality and effective use.   |   |
| Institutional Structure  | <b>B</b><br><b>5,6,7,8</b>    | <b>A</b><br><b>8,9,10,11, 12,13,14</b>        | In the EWC lack of a clear differentiation of authorities of management bodies in water relations has resulted a favorable field for WRs irrational use and for negative environmental impact.<br>According to the DWC the Government of the RA fulfills the objectives of the given Code through the following management bodies: WRs management and protection body, WS management bodies, Regulatory Commission. The following units providing consultancy are envisaged: National Water Council, Council regulating water users associations and federations of water users associations, Dispute Resolution Commission.<br>DWC states a simple and practical institutional setup, where the water use and WRs protection functions are clearly divided, which will promote WRs rational use and protection that in its turn will reduce negative environmental impacts. |   |
| Water Resources Management and Protection Body   | <b>C</b><br><b>6</b>          | <b>A</b><br><b>1, 10, 121/5/59</b>            | The Water Resources Management and Protection Body intended in DWC provides planned and economic use of WRs, Classifies water resources within water basin area, establishes maximum allowed concentrations and minimum environmental flows, participates in development of water standards, approves allowed quantities of water withdrawal, development of water basin management plans and their implementation, issues water use permits.<br>To promote more effective, efficient and decentralized management of water resources, Water Basin Management Authorities are established in the   |   |

|  |   |                                  |   |  |
|--|---|----------------------------------|---|--|
|  |   |                                  | composition of the Water Resources Management and Protection Body. Thus, the activity of Water Resources Management and Protection Body will promote WRs quality maintenance, effective use, will identify threats to water basins depletion, provide implementation of measures preventing adverse impact on aquatic ecosystems  |  |
| Water Systems Management Body                                  | <b>C</b>  | <b>A<br/>1, 12</b>               | The Water Systems Management Body intended in the DWC shall provide safe use and reliability of WSS, participate in preparation of National Water Program draft, provide implementation of a Draft National Water Program, development and implementation of WSS investment policy, promotes WRs protection.  |  |
| Involvement of specialists of appropriate qualification in WSS | <b>C</b>  | <b>A<br/>48-55</b>               | DWC states that during transfer of use rights for state-owned water systems, preference is given to the entities with more extensive professional experience and knowledge, if so determined by the Government of the Republic of Armenia. In case of involvement of private organizations in this sector by tender it will be possible to involve additional working resources with high qualification.<br>It is also possible, that current employees in this sector are dismissed in a procedure established by legislation in case of failure to meet job requirements.   | There is not a separate norm in the Code for mitigating possible negative impact, however it in any case shall be implemented in accordance with the RA Employment Code. |
| Regulatory Commission  | <b>C</b>  | <b>A<br/>1, 14</b>               | The Regulatory Commission intended in the DWC shall provide independent establishment of tariffs, shall establish set of indicators for quality of services provided, issue water systems use permits, promote WRs effective use.   |  |
| Dispute resolution in water relationships                      | <b>B<br/>70,<br/>71, 71,<br/>73, 74,<br/>75</b> | <b>A<br/>9,<br/>109-<br/>112</b> | Dispute resolution in water relations in the EWC is given to the Government, local and other authorized bodies. A clear mechanism of regulation is lacking and the scope of authorizations of the bodies that consider water use disputes, is not clarified.<br>All these negatively affect the state of water resources, particularly the environment.<br>The DWC provides for regulation of bodies discussing and solving disputes in water relations (it is envisaged to establish a dispute resolution commission), possibility to solve the dispute in a legal form in case of disagreement between parties, dispute discussion creates a guaranty for water use right protection, exclusion of violation of other water users rights, which will have a positive influence on all parties involved in water relations.<br>In its turn, it will promote WR rational use and protection, prevention of water use rules violation that will have its positive result for environment quality and protection. |  |
| Enforcement means for violation of requirements of DWC         | <b>B<br/>5</b>                                  | <b>A<br/>113,<br/>114</b>        | The EWC states that implementation of the Code requirements is mandatory in water relations, however the enforcement tools in case of violation are not clarified.<br>The DWC clarifies transactions violating requirements of the Code and criminal and administrative responsibility for violation of the Code requirements.  |  |

|   |                         |  |  |  |
|---|-------------------------|--|--|--|
|   |                         |  | The above mentioned will give the possibility to prevent, or otherwise to enforce responsibility for WRs depletion, waste, littering, as well as other negative impacts on them.   |  |
| The right to claim from water suppliers and/or water users the charge for the water provided and the mechanism for its implementation                               | <b>B<br/>25</b>         | <b>B<br/>59</b>  | Restriction of the right of public (mainly of poor people) to use water and increase health risk, lack of special mechanisms for levying water fees, threat of using water hazardous for health and deterioration of hygienic conditions caused by water supply termination because of no-n-payment of fees, increase of infectious diseases out-burns.  | In DWC tariff regulation mechanism, special tariff is envisaged (79)   |
| Registration of water users, water extraction, water use, water discharge volumes, quantities of harmful substance discharged into WRs and reporting of water users | <b>B<br/>87,<br/>89</b> | <b>B<br/>16,<br/>19</b>  | The EWC states the water users' obligation for initial measurement of water withdrawal, water use, water discharge volumes, quantities of harmful substances discharged into open basins. However it does not state the types and procedure for collection, summarizing, disposal, possession and use of the recorded data.<br>According to the DWC, National Water Program includes also WRs volumes, as well as the measures towards protection and increase of national water reserve. The mentioned allows assuming that it includes also measurement and water users' reporting, however this is an arbitrary approach. Lacking functions of measurement and reporting will not allow to manage the filed adequately, which in its turn will lead to unreliable qualitative and quantitative data of WRs monitoring, and thus inaccurate assessment of manmade impact on WRs. | National Water Program in DWC will include improvement of issues regarding water use and discharge volumes, as well as reduction of negative impact on environment, particularly WRs (121) |
| Water System Use Permit (WSUP)  | <b>C</b>                | <b>A<br/>1, 38-<br/>47<br/>121/<br/>5/7,<br/>121/5/4<br/>2</b> | DWC envisages provision of reliable and safe system operation, consequently provision of WRs effective use, reduction of depletion possibility. DWC clarifies validity of WSUP, application content, WSUP issuing order, duration, transfer, requirements for staff qualification, suspension, amendment and revocation of use permit.<br>As a negative impact it will increase service prices and will reduce the service availability due to increased costs and tariffs for meeting requirements.   | DWC intends rendering financial aid from the state budget (81)   |
| Transfer of Water System Use Permit   | <b>C</b>                | <b>A<br/>48-<br/>58,<br/>121/<br/>5/5</b>                      | DWC states 4 types of water systems management by private operator (trust management contract, concession agreement, creation of a commercial organization; lease), which will promote WRs effective use and reduction of depletion possibility.   |  |
| Water Use Permit (WUP)  | <b>B<br/>22</b>         | <b>B<br/>1,</b>  | According to the EWC WRs use through specific structures and equipment shall be implemented by a special water use permit (SWUP), however  | DWC enforcement prevents unauthorized use of WRs,  |

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|   |                    | <b>10, 21,<br/>27-36,<br/>5, 6,<br/>22<br/>121/<br/>5/57,<br/>121/6/<br/>1,<br/>121/6/<br/>2</b> | <p>clarification of further functions for receiving SWUP is lacking there.</p> <p>In the DWC the gaps of EWC in this field are eliminated and the water use permit (WUP) is clarified, as WRs use right and the process of receiving the right is clarified by separate articles, providing management body-water user rights.</p> <p>Clarification of all these issues will promote WRs rational use and protection, as well as protection of qualitative environmental features.</p> <p>However there are gaps in the DWC related to refusal, revocation of WUP and obligations of physical and legal persons holding WUPs. The mentioned gaps do not complete authorizations of the management body, regarding the issue of fully meeting the DWC requirements. At the same time these gaps cause ambiguous interpretation of DWC's requirements that, in its turn, can cause arbitrary activities by physical and legal persons with a negative environmental impact.</p> | regulates state (WR owner) - water user relations for the benefit of effective use and protection of WRs (121): |
| Water users                                       | <b>B<br/>15</b>    | <b>¶</b>   | <p>In EWC "water user" category is given, by which the status of physical and legal person implementing water use is clarified.</p> <p>However in the DWC this category is omitted, while there is a concept of "federations of water users associations". Absence of the concept "water users" will cause ambiguity regarding meeting of DWC requirements (particularly not full measurement of water use and wastewater discharge), thus an unreliable assessment of man made environmental impact.</p>   |   |
| Conditions of WR use and protection               | <b>B<br/>5, 21</b> | <b>A<br/>5,<br/>15/2,<br/>121/<br/>5/2,<br/>121/5/<br/>13,<br/>121/<br/>5/1512<br/>1/5/20</b>    | <p>In the EWC conditions of WR use and protection are given in general, with declarative provisions in different articles.</p> <p>In the DWC it is clarified, given in separate articles and with logical functions coming from them, which will have its positive impact on providing main needs of present and future generations, quality and volumes of national water reserve, as well as protection of aquatic and related eco-systems and their biodiversity.</p>  |   |
| Waste water discharge permit, wastewater disposal | <b>B<br/>63</b>    | <b>A<br/>1,<br/>19, 21,<br/>99/7,<br/>100,<br/>101,<br/>121/5/<br/>2,<br/>121/5/</b>             | <p>According to the requirements of the EWC the allowable marginal discharge of harmful substances discharged into open basins is stated, however the discharge permit is omitted. The Code does not answer also the question of wastewater disposal.</p> <p>The DWC gives the concept of ecologically realistic maximum allowable discharge, discharge right, authorized body establishing the order of wastewater disposal. The DWC establishes also the responsibilities for violation of discharge conditions.</p> <p>Prohibition of discharge without permit, gives a basis to standardize the</p>   |   |

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|   |  | <b>22</b>   | quantities of harmful substances discharged into WRs within the environmentally sound limits.   |   |
| Water Use Permit Application, its assessment criteria and priorities statement, content, suspension, amendment and revocation | <b>B</b><br><b>21, 22, 24, 26-28, 32-35, 36-38</b> | <b>B</b><br><b>29-37</b>                            | Increasing possibility of using water hazardous for population health with drinking purposes. In the drinking water use permit assessment of compliance of water with health requirements and participation of authorized body is not forced.   | Enforcement of drinking water standards, ratification of peculiarities of drinking water supply and wastewater systems use (120)  |
| Water land use  | <b>C</b>   | <b>B</b><br><b>62</b>                               | DWC provides Ws use and protection, promotes WRs quality conservation, aquatic eco-systems protection.  | Regulated also by the RA Land Code (Land Code, A. 26)   |
| Groundwater use   | <b>B</b><br><b>38, 51, 84</b>                      | <b>B</b><br><b>5/10, 10/17, 25, 95, 121/5/48</b>    | DWC envisages unity of groundwater and surface water management, which gives a possibility to ensure protection. Groundwater use permit features are clarified, storage of groundwater in emergencies for providing drinking water.<br>As a negative impact a possibility of some discrepancies with the legislation on underground resources can be mentioned.                       | The Code envisages to separate management processes of groundwater exploration, survey, recording in Cadastre (regulated by the Code of Underground resources) and use (regulated by DWC) (5/10)  |
| Free water use  | <b>B</b><br><b>17, 23</b>                          | <b>A</b><br><b>1, 22, 23, 26, 121/5/52 121/5/28</b> | In the EWC a general water use concept is stated (A. 23), which is close to DWC concept of "free water use".<br>DWC provides regulation of free and free of charge water use for public, WRs availability, maintenance of water quality, water withdrawal for sanitary flows.<br>As a negative impact the fact that in some cases ambiguous understanding of the concept is possible. | DWC intends to develop regulating documents, which will exclude the possibility of ambiguous understanding, clarify the order of free water use (121/5/52, 121/5/28)  |
| Water resources pollution mitigation and prevention.  | <b>A</b><br><b>9-14, 61-63 76-84</b>               | <b>B</b><br><b>5/26, 98-108</b>                     | As in DWC the prohibition of receiving wastewater and drainage water into waters used for drinking purpose is not clearly stated, a possibility of pollution is increasing and control is weakening<br>The discharge permit concept is also not ratified.   | In DWC it is envisaged to clarify the issue during development of RA Law on Drinking Water (120,121/4, 121/5/45), as well as procedure of use of depleted wells for wastewater and drainage water collection, depleted mines, pits and open mines, and outlet (121/5/18): |
| Irrigation of agricultural lands with wastewater  | <b>A</b><br><b>46</b>                              | <b>B</b><br><b>101,103</b>                          | As in the DWC the necessity of preliminary wastewater treatment before irrigation is not clearly stated, weakening of control and pollution increase is possible.   | DWC envisages to develop procedure on irrigation with wastewater (121/5/22, 121/5/30):  |

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| Use of water resources for the receiving wastewaters                                  | <b>B</b><br><b>.16,</b><br><b>61</b> | <b>B</b><br><b>100,</b><br><b>104</b>                                      | <p>The EWC gives general and arbitrary enforcement approaches of using WRs for wastewater discharge.</p> <p>The DWC gives a non-arbitrary enforcement approach for the problem solving, however limits only to that WRs or parts thereof that can not be used for wastewater discharge. Protection of only those mentioned WR's is provided, however for the rest of WRs the conditions of receiving discharged wastewater are not clarified, which can result in organized (discharge permit not substantiated by the management body) and not organized (actual discharge not contradicting DWC requirements) pollution.</p>  | DWC reduces a negative impact on WRs and their parts, which have major environmental and economic value. Prevention of negative impact of wastewater on the rest of WRs (not very valuable) is envisaged to implement in WPs. However, incompleteness of legal framework for formulating these requirements will not allow the management body to minimize negative impact of wastewater on the WRs, in case of their unavoidable use with the given purpose (104). |
| System of water use economic incentives, including penalties, compensation for damage | <b>C</b><br><b>31</b>                | <b>A</b><br><b>32,</b><br><b>44, 76,</b><br><b>115, 116,</b><br><b>117</b> | <p>The EWC, Article 31 mentions that water users must effectively use water resources, take care of saving/efficient water consumption, quality improvement, without mentioning the forms of financial/economic responsibilities – penalties, depriving of water use right, etc. in case of failing the obligations.</p> <p>DWC suggests that the incentives for the efficient use, rehabilitation and protection of water systems, water supply and/or sanitation systems, including tax, loan and other privileges be established by law. The system of enforcement penalties for remuneration of the damage to ERs is also introduced.</p>   | DWC intends to harmonize the existing legal and normative acts with those to be adopted with the provisions of the Water Code (121).  |
| Bases for water use permit fee charging and levying mechanisms                        | <b>C</b>                             | <b>A</b><br><b>77</b>  | <p>DWC ratifies the bases for establishing fees associated with Water use permit, in particular: volume, quality and regime of water withdrawn from the water resource, volume of produced items, services supplied, works done without water intake from the water resource, used surface of the water resource, purposeful or non-purposeful use of the water resource, volume and quality of water discharges.</p> <p>At the same time, in order to increase water use efficiency and improve water quality, as well as to raise an interest of water users, the water use permit fees retained from individual water use permit holders may be different, based on the factors provided by the Code.</p> <p>Introduction of incentive system is also intended (in the form of lowering permit fees or otherwise offering financial assistance) for the cases where water use is shown to be in the public interest and where such use conforms to the requirements of the Code.</p> | After acceptance of DWC it is intended making amendments and supplements in the Law of the Republic of Armenia on "Environmental and Nature User's Fees and Changes" and accept a number of legal and normative acts where the Code requirements in this issue will be stated (121).  |
| Principles for charging WR pollution fees   | <b>C</b>                             | <b>A</b><br><b>77</b>  | For WRs pollution at present the bases for pollution fees, the mechanisms for their collection are not stated clearly. The practical approaches and   | After acceptance of DWC it is intended to make Amendments   |

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|   |          |                         | <p>mechanisms for providing privileges related to pollution reduction, as well as incentive means for the entities more practically approaching the water protection issue is lacking.</p> <p>The DWC intends that the following may serve as a basis for the payment of environmental fees: the constitution, quantity, quality and characteristics of the discharged wastewater, the type and level of wastewater impact on water resources, the ecological state of the water resource.</p>   | <p>and Supplements in the Law of the Republic of Armenia on "Environmental and Nature User's Fees and Charges" and related legal acts (121).</p>  |
| Bases for formation of water supply tariffs             | <b>C</b> | <b>A<br/>14,<br/>79</b> | <p>Lack of bases for establishing tariffs for the used water, establishing uniform tariffs result in enforcement of tariffs that do not take into account WRs use by the entities in various economic and social conditions, their affordability, demand, economic development trends in different regions. Under this conditions effective water use is not encouraged. An important circumstance is which body will establish tariffs for non-competitive water use – the WRs possessing body, or the independent body.</p> <p>DWC intends that the independent body (Regulatory Commission) shall discuss and approve submitted proposals on the regulated and calculated tariffs that may be charged by each non-competitive water supplier. At the same time, the principles for forming regulating tariffs are given, which take into account inclusion of economically justified costs, opportunities for acquisition of reasonable profit, provision of quality of services provided, consumers ability to pay, justified technological losses, incentives for efficient water use and water quality improvement; incentives for providing high quality services and other factors.</p> <p>After the Code approval, as a negative result can be increase of tariffs.</p> | <p>The DWC intends establishment of an independent body acting in the area of tariff policy (14), bases for tariff formation are stated, it is stated also that tariff structure formation approaches shall be included in the National Water Program (79), which will give the possibility to state by law the tariff policy elements applied for a certain period.</p> <p>It is envisaged also acceptance of corresponding legal and normative acts (121), and implementation of correct administration (14 &amp; 79).</p> <p>For mitigation of negative results (tariff increase) the DWC intends differentiation of tariffs depending on different water use groups and differences in water basin separation, as well as establishing incentive tariff depending on the efficiency of water use. (79):</p> |
| Ensuring social justice during establishment of tariffs | <b>C</b> | <b>A<br/>79</b>         | <p>In establishing tariffs for the water used the public notice process and the practice of taking into account the opinion of social groups are not acting, which does not allow during tariff calculation to take into account the consumers' opinion who shall pay for the resource.</p> <p>The DWC intends that prior to the establishment of tariffs, the Regulatory Commission shall publish a notice on principles of formation of the proposed tariff, discuss the received comments and recommendations.</p>  | <p>DWC envisages a clear administrative implementation (20 and 79):</p>   |

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|   |          |                | The mentioned measures will allow to mitigate possible social strain related to introduction of new tariffs and make a trust towards the management body.   |  |
| Differentiated tariffs for different water basin divisions and different water use groups (sub-groups). | <b>C</b> | <b>A 79</b>    | Application of differentiated tariffs depending on different water use groups (sub-groups) and differences in water basin separation will allow to run the tariff policy taking into account WRs use by the entities in various economic and social conditions, their affordability, demand economic development trends in different regions.   | It is also envisaged by the DWC passing of corresponding legal and normative acts (121), and implementation of proper administration (14 & 79).  |
| Introduction of calculation and regulated tariffs   | <b>C</b> | <b>A 5, 79</b> | Introduction of calculation and regulated tariffs by the new Code will allow to provide ratification of real water price (calculation tariff, which at present is and in the near future will be higher than the regulated tariff), and by application of regulated tariffs it will be possible to take into account consumers ability to pay in the given period, difference between various social groups, water distribution efficiency.<br>In this terms the DWC states that in case if the determined size of the regulated tariff is less than the value of the accounting tariff, deficiency of monetary deposits to the state budget from water use is envisaged in form of subsidies and determined by the Government of Armenia other tax privileges<br>Alongside with increase of solvency of water users additional payments have to be decreased and the size of the regulated tariff have to be drawn near to accounting tariff value.  | The DWC intends amendments in Tax legislation (121), take into account the requirements of DWC's Article 5 during organization of budget process.  |
| Efficient mechanisms for financial assistance in water relations  | <b>C</b> | <b>A 81</b>    | The DWC intends that financial assistance may be provided in water relations in the forms of subsidies or tax privileges established by the legislation of the Republic of Armenia, depending on the specific form of financial assistance stated in the National Water Program.<br>The amounts of subsidies from the State Budget or tax privileges shall be established in a way as to benefit the reimbursement of costs associated with the protection and technical maintenance of the water systems and technical service costs.<br>In providing financial assistance, the following circumstances shall be taken into account: purpose of the financial assistance; providing equitable conditions and exclusion of any discrimination, ensuring transparency, financial status of the entity receiving financial assistance, necessity of protecting the water objects.<br>The main positive impact of the mentioned measure is that financial means needed for WSs maintenance and technical service will be involved.<br>A negative impact can be that persons not needing those means or persons not meeting the Water Code requirements during their activity can apply for receiving financial assistance. | The DWC envisages that in the annual State Budget amount of subsidies allocated to the water suppliers and/or the water users from the State Budget or tax privileges established by the legislation are to be approved. (81), as well as the order of rendering financial aid to water suppliers and water users shall be established in 3 months after the Code is passed (121).<br>Negative impacts will be mitigated by means of rendering financial aid (121), as well as depriving persons violating the Code's requirements of the right to receive financial aid (81): |
| Public sector (investments) involvement   | <b>C</b> | <b>A 48-60</b> | In the EWC the forms, mechanisms, regulations of involving private investments in water supply and wastewater field are not stated. Absence of  | The DWC envisages to pass regulations for transfer of  |

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| mechanisms, development of infrastructures          |                 |   | <p>private investments does not allow even to safely maintain the operating infrastructures, not speaking about the infrastructure development in conditions of poor financing of the systems from the state budget.</p> <p>Corresponding articles of the DWC state about the specific features of transfer of management rights for state-owned water systems. There is a possibility to transfer the management of the systems to private persons through trust management contract, concession agreement, creation of a commercial organization; lease. Implementation of the mentioned measures will allow to reduce negative impacts existing at present.</p>   | management rights for state-owned water systems, state transfer procedures and specifics (121).  |
| Business opportunity                                | <b>C</b>        | <b>A, 35, 47, 48-60</b>                       | <p>The DWC states that WUPs and WSUPs may be sold or a portion of permitted water rights otherwise transferred to a third party according to the procedures established by the Government of the Republic of Armenia, unless disallowed specifically by the water use permit conditions.</p> <p>Besides, business activity will be promoted by the mechanisms of transfer of state-owned WSs use right to a third party, which is allowed to implement by the new Code.</p> <p>Among possible negative impacts can be the possibility of transfer of WUPs or WSUPs to any occasional person.</p>   | The DWC intends legality and validity of WUP transfer (35), as well as the order of WSUP transfer (47).  |
| Improvement of social justice                       | <b>¶</b>        | <b>A 32, 43, 50, 66, 69</b>                   | <p>In corresponding DWC articles provisions towards providing social justice are provided. A positive factor is taking into account the social situation and its improvement possibilities during issuing water use permit, WSs use permit, state-owned WSs use permit, water quality standards establishment, as well as developing norms limiting impact on WRs.</p>   |  |
| Maintenance of the balance and welfare of ecosystem | <b>B 22, 23</b> | <b>B 5, 6, 10, 16, 19, 44, 69, 77, 98, 99</b> | <p>The DWC intends:</p> <ul style="list-style-type: none"> <li>- protection of aquatic and related eco-systems, however their zones are not given,</li> <li>-provision of ecological sustainability of environment, the concepts of ecological sustainability and ecological balance are lacking,</li> <li>-development of measures preventing adverse impact on aquatic ecosystems,</li> <li>-developing norms limiting impact on WRs, taking into account the present ecological situation, regulating mechanism of norms limiting impact is lacking,</li> <li>-establishment of environmental fees, taking as a basis environmental state of water resource receiving the discharged wastewater: for its implementation it will be necessary to make Amendments in the Law of the RA on "Environmental and Nature User's Fees and Charges"</li> </ul> <p>All these measures will allow minimizing the environmental damage caused by WRs use.</p> | DWC intends to approve protection zones of aquatic and related ecosystems (121/5/13), the order of allocation of lands for use at water ecosystem protection zones, assessment of design papers and documents for construction, implementation, extraction of bio-resources and substances (121/5/14). It is intended also to make amendments and supplements in the Law of the RA on "Ecological and Environment Use Fees". 121/4). |

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| Prevention of water quality impact in aquatic ecosystem     | <b>B</b><br><b>2, 9, 31, 76-80</b>              | <b>B</b><br><b>5, 7, 16, 19, 20, 31, 38, 41, 66, 67, 69, 77, 99, 103, 108</b> | <p>The DWC states the protection of WRs against pollution, littering and infection, reduction and prevention of waters pollution. Water quality protection is ratified in the Chapter regarding Water quality standards. The Code prohibits discharge, outflow and burying of radioactive and toxic substances in WRs.</p> <p>These measures towards protection of WRs quality allow minimization of the environmental damage. However not meeting the water standards, MAC of polluters, as well as procedure for control over pollution by toxic substances can cause pollution of WRs and environment.</p>  | <p>The DWC envisages to approve allowed marginal concentration of polluters in WRs and the order and schedule of their enforcement (121/5/20), the order of state control over WRs pollution with toxic and radioactive substances (121/5/37).</p> <p>It is envisaged to state the catchment basins, which plays a critical part in the protection of water quality (121/6/3).</p> |
| Prevention of water quantity impact in aquatic ecosystem    | <b>C</b>  | <b>A</b><br><b>16, 18, 38, 41</b>   | <p>The DWC states water quantity protection as national reserve that can not be extracted, distributed, as well as given for water use in a manner that can reduce the volume of the national water reserve.</p> <p>The size of National Water Reserve, measures towards their protection and increase are included in National Water Program.</p>   |  |
| Impact on water biodiversity and its protection             | <b>B</b><br><b>10-12, 14, 23, 54-56, 61, 82</b> | <b>B</b><br><b>5,16, 38, 98, 103, 104</b>                                     | <p>The DWC intends conservation and protection of biodiversity. For protection of biodiversity special measures shall be applied in water use permit.</p> <p>DWC prohibits:</p> <ul style="list-style-type: none"> <li>-operate construction and other objects without fish protection devices,</li> <li>-use WR for the discharge of wastewater and drainage water if the water resource is a spawning and hibernation area for valuable species of fish.</li> </ul> <p>-Necessary of constructing fish passes is lacking. For the purpose of reduction of impact on water biodiversity, it is necessary to approve the order of WRs use for fish and hunting industry.</p> | <p>In the DWC it is intended to approve the order of WRs use for fish (121/5/33) and hunting industries (121/5/34).</p>  |
| Management of wetlands, impact on them and their protection | <b>B</b><br><b>56</b>                           | <b>B</b><br><b>16/1 5, 38/11 102, 121/ 5/3, 121/6/3</b>                       | <p>In the DWC the National Water Program includes description of the threats to the health of critical watersheds and wetlands and propose a series of counter measures to reverse any negative impacts to water ecosystems:</p> <p>The water use permit must include special measures to protect wetlands and related biodiversity.</p> <p>The DWC views the protection of wetlands only as means of prevention of adverse impact on water ecosystems and does not take into account their environmental impact.</p> <p>Protection of wetlands is not considered as "internationally protected area", as waterfowl habitat.</p>   |  |

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| Impact on ecosystems and landscapes and their protection | <b>B</b><br><b>9, 12, 14, 85</b> | <b>B</b><br><b>5, 16, 38, 88, 98, 99, 108</b>                          | <p>The DWC defines protection of interconnected ecosystems and landscapes. The DWC prohibits to give water ecosystems for use without carrying out measures envisaged by the design towards prevention of land inundation, floods, swamping, salination, and erosion</p> <p>Wood manufacturing in water protection zones, except for cases of sanitary cuttings and wood use for forestry activities are prohibited.</p> <p>Lacking of the order of determining catchment basins playing a crucial part in water quantity and quality protection, giving lands in water protection zones, use of lands and forests, extraction of bio-resources will result in negative environmental impact and disbalance.</p> | <p>The DWC envisages that following the establishment of the water ecosystem protection zones, the order of the following shall be established: allocation of lands for use, lands and forests use, as well as extraction of bioresources (121/5/14)</p> <p>It is envisaged also to establish the catchment basins, which play an important part in water quality and quantity protection (121/6/3).</p> |
| Specially protected water resources                      | <b>C</b>                         | <b>A</b><br><b>99, 102, 105, 121/5/24</b>                              | <p>In the EWC specially protected WRs issue is not mentioned at all. Unlike it, the DWC fully, beginning from WRs protection principles to their implementation states specially protected WRs.</p> <p>The mentioned above will have its positive influence on WRs with environmental value. It is to be mentioned that in this case WRs protection is provided with application of the principle "WRs are subject to protection both in case of their use and not use".</p>   |  |
| Establishment of minimum flows for WR use and protection | <b>C</b><br><b>1</b>             | <b>B</b><br><b>5/2, 5/29, 10/6, 15/3, 16/1, 22, 66</b>                 | <p>In the EWC limitations for establishment of minimum flows for WR use and protection, as well as resulting functions are lacking.</p> <p>The DWC ratifies ecological importance of WRs, principles of their establishment, criteria, rights and obligations of water use parties conditioned with their protection.</p> <p>Not accurate determination of minimum environmental flows will result in disturbance of both water and land eco-systems, biodiversity reduction, even destruction, degradation of environment.</p>  | <p>The DWC intends to approve order of maximum allowable volumes of environmental flows and non-refundable water intake from surface flow for each water resource (121/5/15):</p>  |
| WR monitoring and information systems                    | <b>B</b><br><b>87-89</b>         | <b>A</b><br><b>16/12, 19, 65, 91, 105, 121/5/6, 121/5/19, 121/5/55</b> | <p>DWC reviews WRs quality, provides forecasts of adverse impact of waters, information accessibility.</p> <p>The negative impact is conditioned with the need to involve additional funds for monitoring implementation. Lacking of regular and prompt dissemination of monitoring data and warning in case of pollution, can cause negative impacts on human life, health and environment.</p>   | <p>The DWC intends development of corresponding order (121/5/19), as well as in separate cases possibility of paid information provision from Water Cadastre (121/5/6, 121/5/55).</p>  |
| Water resources study and assessment                     | <b>B</b><br><b>16</b>            | <b>A</b><br><b>19</b>  | <p>In the EWC the issues of WRs studies, assessment and objectives are lacking. The DWC clarifies the issue importance, its role in the field</p>  |  |

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|   |  |   | management and the implementation mechanisms for functions resulting from it, implementation of which will allow to use and protect WRs in due and environmentally sound ways.   |  |
| WR classification, priority use of potential  | <b>C</b>   | <b>B</b><br><b>16/2</b><br><b>/5,</b><br><b>10/4</b>  | <p>In the EWC lacking of WRs classification did not give the possibility to assess environmental and economic potential of WRs, thus the latter is not efficient and an appropriate approach for use was lacking.</p> <p>The WRs classification envisaged in DWC will allow to effectively, purposefully use and protect WRs and effectively use the means for water protection measures. However, the unclearness in DWC for the problem solution, related to the further functions, will have its adverse impact both on WRs and priority use and protection of their potential.</p>   | The DWC intends to prevent the WRs loss factor, however lacking of prevention mechanisms, priority water use and further functions will not allow to implement the process, which will lead to not purposeful use and protection of natural and economic values conditioned with WRs' potential. |
| Water use types, priority water use   | <b>B</b><br><b>16,</b><br><b>20,</b><br><b>5</b> | <b>A</b><br><b>1, 5,</b><br><b>6, 15/1,</b><br><b>21, 22,</b><br><b>24,</b><br><b>31/2</b>        | <p>In the EWC the rights of the field management body in establishing water use types, general and special water use, forms of their rights, and priority of drinking and household water use are given. However the forms of water use right transfer and sequential priorities of water uses other than drinking and household purposes are not clarified.</p> <p>The DWC includes, regulates real issues regulated and not regulated by the EWC, as well as the related issues. The regulation envisaged by the DWC will lead to protection of WRs, increase the factor of their effective and purposeful use in the economy.</p> |  |
| Drinking water standards, order of treatment, specifics of operation of potable water supply and sanitation systems | <b>B</b><br><b>36, 37</b>                        | <b>A</b><br><b>70,</b><br><b>120,</b><br><b>121/5/4</b><br><b>5</b><br><b>121</b><br><b>/5/54</b> | <p>The DWC clarifies specific importance and features of drinking water for protection of public health and states the necessity to develop a separate law on "Drinking Water".</p> <p>The DWC intends regulation of breakdown repair in apartments and internal networks aimed at reduction of danger to public health.</p>   |  |
| Establishment of the marginal allowed concentrations of polluting substances in water resources                     | <b>B</b><br><b>62</b>                            | <b>B</b><br><b>10/6,</b><br><b>121/</b><br><b>20</b>  | The authority of the RA Ministry of Health in establishment of maximum allowable concentrations is not clear, which can cause negative impacts on population health and environment.   |  |

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| Establishment of water resources qualitative and quantitative criteria (water quality standards, marginal allowable criteria and limiting norms) | <b>B</b><br><b>5, 9,</b><br><b>38, 62</b> | <b>B</b><br><b>1, 66-</b><br><b>70,</b><br><b>120,</b><br><b>121/</b><br><b>6/8</b>  | <p>The DWC promotes WRs quality protection, aquatic ecosystems protection, minimizes their degradation, pollution, depletion, negative impact on human health.</p> <p>According to the DWC the environmental norms limiting impact on WRs shall be developed by the WRs management and protection body.</p> <p>Inaccurate determination of limiting ecological norms, water quality and quantity standards, minimum ecological flows will result in disturbance of water and land ecosystems, biodiversity reduction, environmental degradation.</p> <p>It is to be mentioned that for protection of due water quality involvement of funds is needed.</p> <p>Lacking clear determination of the link between water quality standards, maximum allowable criteria and limiting norms can result in confusion and difficulty to control over qualitative indices, weakening of control and possible pollution increase.</p> | The DWC intends water quality and quantity protection enforcement in WUP and WSUP , environmental norms limiting impact on WRs (Chapter 121/5/21), which will reduce negative impacts on environment. The DWC envisages that water quality standards shall be established by the National Water Program (16/1/6, 16/2/9, 16/2/11) |
| Establishment of water resources quantity and quality by water use purpose   | <b>C</b>                                  | <b>A</b><br><b>1,</b><br><b>19,</b><br><b>121/5/</b><br><b>2</b>   | <p>The EWC gives a general approach to the issue of standardization, but it is lacking for this particular issue.</p> <p>In the DWC qualitative and quantitative norms of WRs are established as water standards, which shall be included in the state water cadastre. The WRs management body, enforcing provision of water standards to the water users through WPs, prevents, reduces negative man made environmental impact.</p>   |   |
| Public participation   | <b>C</b>                                  | <b>A</b><br><b>5/19,</b><br><b>20,</b><br><b>106</b>   | <p>The DWc intends public awareness raising, information accessibility, public participation in decision making process in the field.</p> <p>As a negative impact can be mentioned the possibility of slowing down economic measures implementation.</p>   | To follow the order and schedule established by this law (20)   |
| Public awareness in water use right formulation process  | <b>C</b>                                  | <b>A</b><br><b>20,</b><br><b>30</b>  | <p>The EWC does not intend to notify the public on the water use right formulation process.</p> <p>In the DWC mandatory public notification on water use right formulation process is stated. The mentioned approach will allow the community to participate in WRs management, which will have its positive impact on effective use and protection of WRs, environment and natural resources.</p>   |   |
| Safety of hydro-technical structures   | <b>B</b><br><b>66, 67</b>                 | <b>A</b><br><b>1, 82-</b><br><b>90</b><br><b>121/</b><br><b>5/8,</b><br><b>121/5/1</b><br><b>0,</b><br><b>121/5/1</b><br><b>1,</b><br><b>121/5/2</b> | <p>The EWC almost does not pay attention on the issues of Safety of hydro-technical structures. It is mentioned only about implementing measures providing adequate technical condition of dams.</p> <p>The DWC envisages measures for providing safety of hydro-technical structures, implementation of which will minimize the possibility of breakdowns and damage to environment, as well as providing safety of human life.</p> <p>As a negative impact it is to be noted that implementation of these measures will require involvement of funds.</p>  | The DWC intends to shift to management by private operator with the purpose of solving the problem of financial resources involvement (48)  |

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|  |                 | <b>6,<br/>121/5/2<br/>9,<br/>121/5/4<br/>1,<br/>121/<br/>5/56,<br/>121/6/7</b> |  |  |
| Harmful impact of waters                             | <b>B<br/>86</b> | <b>A<br/>1,<br/>91,92</b>  | Chapter 22 of the EWC considers prevention and elimination of adverse impacts on waters. These concepts are close to the ideas expressed in Chapter 13 in the new draft.<br>The DWC provides regulated use of structures and forecasts based in monitoring results, which will allow to minimize the damage caused by disasters and promote protection of WRs and lands.<br>As a negative impact it can be noted that that implementation of measures will require involvement of significant amount of funds. | The DWC intends giving financial means from the state budget (91, 16/1/6, 16/2/11).  |
| Water systems use in emergencies                     | <b>C</b>        | <b>A<br/>93-97</b>   | The DWC states features of WRs use during war , military situations, ecological disasters, which lead to WRs protection increased possibility and reduction of environmental damage.   |  |
| Water resources protection in ecological emergencies | <b>B<br/>86</b> | <b>B<br/>96</b>  | According to the DWC the National water program includes the ecological emergency and ecological disaster zones in water basins. Ecological Emergency on water systems or a part of it is announced if there are such changes which may cause damage to people's health and /or environmental sustainability.  | The DWC defines the procedure of establishing WSs use and protection emergency regime (93/2), as well as to establish the procedure of elimination of disaster consequences caused by adverse impact of waters (96). |
| Water resources use and protection in emergencies    | <b>C</b>        | <b>C<br/>91,<br/>92</b>  | In the EWC the issue of water resources use and protection in emergencies is ignored.<br>The DWC considers only emergencies caused by adverse impact of waters.<br>As both man made and natural phenomena can influence on WRs, this gap can cause damage to human life, health, environment and particularly WRs.   |  |
| Transboundary water resources management             | <b>B<br/>69</b> | <b>A<br/>1, 63-<br/>65,<br/>121/<br/>5/49,<br/>121/<br/>5/50</b>               | The DWC clarifies the order of transboundary water resources use. It is intended to approve the staff of the commission and the order of information provision, which will promote establishment of diplomatic relations and cooperation with neighboring countries.   |  |
| Compatibility of                                     | <b>C</b>        | <b>A</b>   | The DWC will lead to compatibility of national water legislation with  |  |

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| international norms with DWC in the field of water resources use and protection and environment protection |  | <b>5, 2,<br/>63, 64,<br/>65</b> | international ecological-legal norms, which will increase the level of legal regulation of public relations in the field of water use and protection, thanks to which conditions will be made for prevention and reduction of negative environmental impacts. |  |
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## 9. COMPATIBILITY OF DRAFT WATER CODE WITH INTERNATIONAL TREATIES

The Table below considers compatibility of issues and problems of Articles in the Draft Water Code with principles and approaches of International Conventions, agreements, treaties and appropriate commentary is provided.

The agreeing of principles will promote making the water relations in the Republic compatible with level of legal norms accepted by the international community and provide strengthening of legal basis for effective use and protection of water resources.

| <b>Problems and issues of DWC</b> | <b>Name, Article of International treaty</b>   | <b>Corresponding Article of DWC and interpretation</b>  |
|-----------------------------------|--|---|
| WRs management issues             | <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);</p> <p>2. London Protocol on "Water and Health"(1999, Article 5)</p> <p>6. Dublin Statement on Waters and Sustainable Development (26-31 January 1992), principles, guidelines, recommendations.</p> | <p>Item 1/i of Article 2 of the Convention considers promotion of sustainable water resources management, involving application of ecosystem approach (DWC Article 99 items 2, 4, 5).</p> <p>London Protocol on "Water and Health", item 5/regards water resources management - provision of present and future generations' basic needs ( DWC A.5/1), and item 5/j of the Protocol considers water basin management principle (DWC A. 17)</p> <p>First principle of Dublin declaration states the fact that effective water resources use requires a conjunctive approach. Effective management links land and water use in all area or underground water aquifer (DWC A.5/10).</p> <p>Second principle of the Dublin declaration considers participatory management approach. This means that the decisions are made as a result of broad public discussions and intend involvement of users in planning and implementation of water projects (DWC A.5/19, 20).</p> <p>The forth principle of the Dublin declaration states that water has an economic value and shall be recognized as an economic good. Management of water, as an economic good, is an important way to achieve justified and effective use, it will promote saving and protection of WRs (DWC A.5/13, 5/14).</p> <p>In the Dublin declaration the recommendation "Resolution of conflicts related to water" defines that river basin is the most convenient geographical unit for WRs planning and management (DWC A.17).</p> |
| "The polluter pays" principle     | <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);Article 2, item 5 (b)</p>   | <p>Draft Water Code<br/>Article 5. The Basic Principles of Management, Use and Protection of Water Resources and Water System A. 5/27</p>   |

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|  | Protocol on "Water and Health" (1999, Article 5, item b)  |   |
| <p>Economic regulation bases for WRs and WSs use, rehabilitation and protection</p> <p>Bases for formation of water supply tariffs</p> | 6. Dublin Statement on Waters and Sustainable Development (26-31 January 1992), introduction, guidelines. The necessity of new approaches to drinking water resources assessment, development and management is mentioned, which can be implemented only as a result of implementing political obligations. The principle is accepted that water has an economic value in all competitive uses and shall be recognized as an economic good, as well as that not recognizing water as an economic value so far was wrong and resulted in a non-rational use of resource and degrading environmental use. | <p>In Article 5 of the new Water Code among others taking into consideration the economic value of water in WRs use, distribution and protection processes is defined as a principle. At the same time it is ratified that water is a heritage and has to be protected, maintained and used as such regarding the interest of future generations.</p> <p>Definition of the principle of recognizing water as an economic value means also that the resource must be realistically evaluated (calculated tariff) and alongside with increasing ability of water users to pay the regulated tariff shall be approached to calculated tariff. Before achieving the mentioned goal - cost recovery, policy with social direction shall be run with application of differentiated tariffs.</p>   |
| Efficient mechanism of rendering financial aid in water relations  | Convention on Combating Desertification (12.09.1994, Articles 20-21). It is mentioned about financial sources, mechanisms needed for implementation of the Convention requirements.   | <p>According to the Article 26 of the new Code it is intended that early spring waters shall be provided free of charge for the sprinkling of saline lands, in accordance with the water use permits issued in accordance with procedures established by the Code.</p> <p>At the same time Article 76 of the Code states that The basic principle of economic regulation of the use, rehabilitation and protection of water resources, water systems, water supply and/or sanitation systems is the payment for water use. Therewith, water charges shall promote efficient use, rehabilitation and protection of water resources and among other principles, provide for the system of economic incentives promoting financing of rehabilitation and protection of water resources. The provisions ratified in the draft will allow to use and protect water resources, taking into account interests of future generations.</p> |
| Monitoring   | Convention (1992, Article 4,11,13,16). Protocol on "Water and Health"   | <p>Article 19.</p> <p>Water Resources Monitoring and Information Systems. Water Resources Monitoring is implemented by the authorized body , in a procedure established by law.</p>   |
| Information systems  | <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992); Ar. 16)</p> <p>Notifying the public</p> <p>a) on medical features of water b) conditions to follow and issuing permission, c) results of the tests of water and wells.</p>  | <p>Article 65</p> <p>In the RA the publicity of information regarding qualitative and quantitative indices of water resources, conditions of their use is ensured.:</p>   |

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|                             | <p>1998 UN Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Issues (the Aarhus Convention) (ratified on 14.05.01, acts 30.10.01);</p> <p>Protocol on "Water and Health"</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);</p> | <p>According to the provisions of Aarhus Convention (Article 6) it is ensured that any person has the right for accessible information on the environment (Articles 19, 65, 91, 105).</p> <p>Article 65<br/>Ensuring Publicity of Information Regarding Transboundary Water Resources</p> <p>Article 6 of the Convention ratifies the provision of information exchange between parties (Article 65).</p>   |
| Public participation        | <p>1998 UN Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention) (ratified on 14.05.01, acts 30.10.01);</p>  | <p>According to the provisions of Aarhus Convention (Article 6) public participation in decision-making is ensured (Article 20, 106).</p>   |
| Transboundary waters        | <p>Convention (1992, Article 4.11.13.16).<br/>Protocol on Water and Health</p> <p>Dublin Statement on Waters and Sustainable Development" (1992);</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);</p>  | <p>Article 63<br/>Regulation of the Use of Transboundary Water Resources. For this an inter-government commission shall be established.</p> <p>In the recommendation "Resolution of water –related conflicts " of Dublin Statement on Waters and Sustainable Development the importance of agreement of interests with neighboring countries, implementation of qualitative and quantitative water monitoring, development of agreed actions and programs, information exchange and implementation of treaties is mentioned. (DWC A. 63, 65).</p> <p>Article 2/6 of the Convention defines that the parties shall cooperate through signing bilateral and multi-lateral agreements development of agreed policy, programs and strategy regarding corresponding catchments or parts thereof (DWC A.63).</p> <p>Article 6 of the Convention states the provision of information exchange between parties (DWC A. 65).</p> |
| Water quality and standards | <p>3. The Agenda 21, UN Conference on Environment and Development, in Rio de Janeiro, 1992;</p>  | <p>In Rio de Janeiro Conference, the Rio declaration consisting of 27 principles was accepted where particularly protection of fresh water resources quality and water supply is mentioned (Article 66, 67, 70):</p>  |

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|   | <p>2. London Protocol on Water and Health(1999, Article 4);</p> <p>Dublin Statement on Waters and Sustainable Development” (1992);</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);</p> | <p>The main provisions of London Protocol on Water and Health are used during development of Articles 67, 70.</p> <p>In Dublin Statement on Waters and Sustainable Development the principles of water quality protection are highlighted (Articles 66,70, 99).</p> <p>Item 5/c of Article 2 of Convention on the Protection and Use of Transboundary Watercourses and International Lakes regards the definition "maximum allowable concentration" in Article 1 of DWC (A.68).</p> |
| Management and protection of wetlands           | <p>“Convention on Wetlands of International Importance Especially as Waterfowl Habitat” (The Ramsar Convention)(1987); A. 3/1, A.4/1</p>   | <p>Articles 6/15, 38/11</p> <p>Agreed for the issues regarding protection and reasonable use of wetlands, establishment of specially protected zones if needed.</p>   |
| Impact on water biodiversity and its protection | <p>The “Convention on Biological Diversity” A.10 a, b, A.8 d, e</p> <p>3. The Agenda 21, UN Conference on Environment and Development, in Rio de Janeiro, 1992;</p>  | <p>Articles 16/2/13, 32/11, 104/4, 104/5</p> <p>Agreed for the issues regarding protection of fauna and flora in aquatic and land ecosystems, biodiversity related to coastal habitats, as well as habitats for valuable fish species and other animals.</p> <p>In Rio de Janeiro Conference, the Rio declaration consisting of 27 principles was accepted where particularly the issues related to biodiversity protection are mentioned (Articles 98, 102, 104, 105),</p>         |
| WRs use and protection                          | <p>3. The Agenda 21, UN Conference on Environment and Development in Rio de Janeiro, 1992;</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992); (A.2,3)</p>                                 | <p>In Rio de Janeiro Conference, the Rio declaration consisting of 27 principles was accepted where particularly the issues related to water resources protection and rational use are mentioned (Article 5/2, 85/29, 99, 100).</p> <p>Article 108. Watersheds</p> <p>Here prohibitions of activities in watersheds are stated, which can directly or indirectly influence on the condition of water resources.</p>   |
| WRs use with non-drinking purposes              | <p>Protocol on Water and Health (1999, London, Article 4, item d</p>   | <p>In DWC impact of diseases spreading through use of waters with non-drinking purposes (recreation, water crops, irrigation with wastewater) on human health is omitted.</p>   |
| Protection of aquatic ecosystems                | <p>Dublin Statement on Waters and Sustainable Development” (1992);</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992); (A.2,3)</p>   | <p>In Dublin Statement the necessity of aquatic ecosystems sustainable protection is emphasized, a special attention is given to sizes of environmental flows (Articles 99, 66, 70, 63):</p> <p>Article 102.</p> <p>Specially Protected Water Resources</p> <p>This Article emphasizes that the status and protection regime for the specially protected water resources of international significance are stated by international</p>  |

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|                                    | 6. Dublin Statement on Waters and Sustainable Development" (26-31 January 1992) guiding recommendations.   | <p>agreements of the Republic of Armenia.<br/>Article 103.<br/>Ecological Requirements for Construction and Other Facilities Affecting the Water Ecosystem<br/>Here, in particular the activity is prohibited if it is not equipped with devices preventing water pollution or littering or adverse impact on waters;</p> <p>Recommendation of "Protection of aquatic ecosystem" of the Dublin Statement states that water is a vital part of environment and habitat for many forms of life, on which human welfare depends (DWC A. 5/3, 98,99).</p>  |
| WRs and Ws use in emergencies      | 6. Dublin Statement on Waters and Sustainable Development" (26-31 January 1992) guiding recommendations.   | Recommendation of "Protection against natural disasters" of the Dublin Statement states that insufficient preparedness and lack of data can result in numerous victims, poverty and economic losses caused by droughts and floods (DWC A. 5/25).   |
| Polluters and hazardous substances | <p>3. The Agenda of the XXI century UN Conference on Environment and Development, in Rio de Janeiro, 1992;</p> <p>Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992);</p> | <p>In Rio de Janeiro Conference the Rio declaration consisting of 27 principles was accepted where particularly the issues related to ecological safety of solid and radioactive waste disposal, wastewater treatment (Article 99), ecological safety of hazardous waste disposal (Articles 99, 104, 108).</p> <p>Item 1/a, Article 2 of the Convention regards prevention, limitation and reduction of discharge of polluting substances, particularly through applying technologies with small waste and without waste and item 1/c considers determination of marginal amounts of wastewater discharge (Articles 99/7, 99/11, 104).</p> |

## 10. RISK ASSESSMENT AND MITIGATION MEASURES

In SEIA risk assessment can be an important preventive measure for reduction of the danger threatening the environment.

Risk assessment is an analysis category, through which the probability of potential danger of environmental damage as a result of implementation of any project can be assessed.

General methods of risk assessment include comparison of anticipated conditions and environmental standards, modeling of the anticipated conditions and determination of calculation models' errors.

During risk analysis it is necessary to pay attention to the link between the critical elements of the project and the external (environmental) factors related to them.

The risk assessment process shall review:

- identification (determination) of probable risks,
- assessment of probability of their occurrence,
- environmental impacts caused by risks,
- development of risk management measures.

It is also important to assess the risks of not implementing separate parts (provisions) of the draft and develop measures for reduction of such risks.

Risk assessment level (degree of details) depends on the nature, field of influence and scopes, activity characteristics of each draft.

Based on direction the risks can be divided into individual (having impact on separate individuals) and collective (when impact can be spread over group of persons, communities, masses at large, etc.) risks. By acceptability they can be divided into acceptable and not acceptable risks, which depends on resistance of signaling entity or object and other factors. Various risks, being distributed among population and environment components can create a summary risk effect. And at last, it is to be noted that the risks with adverse impact on environment or its components, because of degradation of the latter can cause new risks for human life and health.

Description of risks identified as a result of analyses carried out during SEIA and the possible measures towards their reduction are provided, therewith they are grouped by issues.

### ***Management and legislation***

The new approaches accepted in the DWC regarding differentiation of state bodies in water relations, water use permits and water systems use permits, regulation of ownership relations, order of dispute resolution and other provision contain risks that they will not act in case of lacking of appropriate economic provision or its being poor.

Failure in the process of developing normative-legal, regulative and other documents intended in transitional provisions will result in the loss of activity of DWC provisions, with all its negative environmental impacts.

The activity of the system intended in the DWC will appear under risk, if the transitional provisions are not implemented at all or not properly implemented.

Because of not clearness of the norms in the DWC, their referring nature and lacking coordination between separate chapters, risks can occur that some provisions of the Code will not be enforced.

For mitigating these risks it is necessary to make corrections both between separate provisions of the Code (for example, division of disputes and responsibilities, their clarification, etc.), and between this Code and other RA laws (for example, Land Code, Civil Code, etc.) for making them compatible. It is necessary to clarify the issues related to the responsibilities for violation of DWC provisions, excluding their referring nature.

Besides, it is important to provide development of 3 new laws mentioned in transitional provisions of the DWC, making amendments and supplements in 10 laws in act, and development of a number of orders and rules.

### ***Water use and protection***

Because of the issues related to WRs classification, water users categories, conditions of refusal and revocation of WUP, water users' obligations, measurement of WRs and water use amounts being not clear in the DWC, the following risks can occur:

- decrease of efficiency of water use and protection conditioned with potential of WRs,
- incomplete registration of water users, water extraction, wastewater amounts, as well as harmful substances discharged into WRs (incomplete assessment of man made negative impacts),
- reduction of meeting obligations of parties in WRs management body - water users relations.

Besides, the issues related to WRs use for receiving wastewater discharge, conditions of operation of water protection structures, WRs use and protection in emergencies are not clear, which is related to the occurrence of the following risks:

- organized (discharge permit not substantiated by the management body) and not organized (actual discharge without permit) pollution of WRs,
- inefficient financial investments in the field of WRs protection, as well as inefficient implementation of water protection measures,
- increase of the threat of WRs depletion and pollution in emergencies.

For reduction of risks in water use and protection filed it is necessary to clarify some provisions of the DWC related to the risks.

### Economic, social and healthcare issues

For application of economic and social issues related to WRs and WSs use, rehabilitation and protection / paying principle, system of economic incentives, bases for establishing fees and collecting mechanisms, principles for establishing charges for water use and pollution, bases for tariff formation, provision of social fair, rendering financial assistance / real risks can be poor financial assistance, provision of purposefulness of financial assistance, ability to pay of poor strata of society, provision of equal development of territorial divisions, social tention.

Introduction of the system of tariffs for water use contains a risk of generating social unfairness, related to inability to pay of a part of the population, which can lead on one hand to "shadow water use" with negative impacts on WRs quality and quantity, and on the other hand, in case of termination of water supply, worsening of hygienic conditions and outburn of infectious diseases because of using polluted or infected water by population.

For reduction (or excluding totally) of these risks, the DWC intends enough solutions, however their implementation depends on timely acceptance of regulating legislative acts planned in the transitional provisions of the DWC, meeting their requirements, as well as clear administrative activity.

### Ecology

Failures in enforcement of the main principles of WRs and WSs management, use and protection, mandatory condition of holding WUP or violation of water standards, land inundation, floods, swamping, salination, and erosion because of breakdown of hydrological structures, violation of rules for construction works having impact on WRs and WSs, as well as improper state control over WRs use and protection will result in risks of pollution of water resources and disturbance of balance and stability of aquatic, coastal, wetland, land and other related ecosystems and landscapes, reduction or death of endemic, specially protected species of animals and plants, consequently of biodiversity in those systems.

For mitigation and/or prevention of risks it is necessary to accurately apply the principles and provisions of WRs management, use and protection ratified in the DWC (mandatory nature of holding water use and water systems use permits and implementation of conditions approved by them, meeting the water standards and construction norms and rules, implementation of adequate control over WRs, etc.).

## 11. SUMMARY

The experience of ten year enforcement of the Water Code of the RA revealed a number of its negative sides, because of which it has almost loosen its activity at present, as a result the water sector is in a poor condition. With the purpose of eliminating the drawbacks characteristic for the Code, as well as regulating water relations in accordance with today's political, economic and social situation, ARD organization, with financial assistance of USAID contributed to the development of new Water Code of the RA and its environmental impact assessment (EIA).

Development of the new Water Code was begun in February, 2001. Thanks to organization of two public hearings and tens of workshops, a complete discussion of the versions of the Code was provided, as a result of which, in April 2001 the last 5th version was prepared.

Recognizing that law, in general, is a document of strategic importance, EIA of the 5th version of the Draft Water Code was considered advisable to carry out from strategic point of view (SEIA). As at present there is not an approved method for such an assessment, internationally accepted principles and approaches of policy, law, program, ecological strategic assessment were used aimed at prediction, prevention, reduction or exclusion of possible negative influences of the DWC on human life, health and environment..

During SEIA the articles of the DWC were analyzed, which were grouped in 69 problems and issues, and comparing them with the articles of the EWC, environmental impact for each of them was assessed. In case of identifying negative impacts, mitigating measures intended by other articles of the DWC were given.

The provisions of the articles, for which the DWC did not provide mitigating measures for negative impacts, were separated as anticipated risks for population and environment and proposals for their mitigation were developed.

During SEIA also the assessment of degree of compatibility of the DWC provisions with the norms of international documents was carried out.

Summing up, it can be said that SEIA allowed to be sure that the simple and functional institutional; structure, where the functions of bodies implementing state management in the field of water use and protection are clearly differentiated, sill of course promote reasonable and rational use and protection of water resources, which in its turn will reduce negative impact on water resources and environment. Among the DWC achievements clear ratification of strategy, policy and programs implemented in water sector can be mentioned. One of the advantages of the DWC is also existence of the provisions on transboundary impact, public participation and information accessibility.

Solution of economic and social issues in the DWC allows to make economic incentives in use and protection of water resources and water systems, involve enough funds for their protection, safe use and rehabilitation, preventing thus negative impact on population and environment. Other issues included in the

DWC on differentiated and flexible tariff policy, rendering financial assistance, providing social fair will promote protection of consumers' (citizens') rights, rational use of water resources.

For water use and protection part, the DWC mainly covers the negative man made impacts on environment, particularly on population and WRs.

From the point of view of reduction of direct impact and impact through environment on human life and health, the issues related to clear process of WSS use permits, as well as marginal allowable criteria and ecological standardization bases are improved in the DWC as compared to the EWC.

The DWC, as compared to the EWC pays a special attention to the issues of stability and balance of ecosystems, as well as impact on water quality in aquatic ecosystems.

Among the DWC's advantages is that the water quantity protected for coming generations is ratified as national reserve.

The existing Water Code more clearly considers the issues related to protection of water and land biodiversity. From ecological point of view, the DWC enforcement will regulate and enforce the issues related to protection of water and land ecosystems, wetlands' stability, water quality and quantity, as well as biodiversity.

The DWC is to the extent possible agreed with principles and provisions ratified in numerous international conventions, agreements and treaties.

Along with the evident progress mentioned above, some gaps are observed in the DWC (the concepts of water standards and marginal allowable discharge are not clear, in WPs the concept of human health safety is not ratified, in priority principles of water reserves the concept of potential is omitted, as well as the role of wetlands for protection of waterfowl habitat, some articles regarding damage compensation, dispute resolution and violations are of referring nature).

However, the mentioned gaps do not reduce the DWC value and the anticipated activity at all, as they can be corrected during development of documents intended in the articles of the transitional provisions.

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