DRAFT

PROGRAMME

INTEGRATED WATER RESOURCES MANAGEMENT AND WATER EFFICIENCY IN THE REPUBLIC OF KAZAKHSTAN FOR 2008 - 2025

Astana city

2007

Content

1. Passport of the Programme

Title	Programme "Integrated Water Resources Management and Water Efficiency in the Republic of Kazakhstan up to 2025" (hereinafter – Programme)
Background	Paragraph 26 of the Action Plan set in the decision made at the World Summit on Sustainable development (Johannesburg, 2002); Item 10 of the Action Plan of the agreements achieved during the official visit of Bondevick K.M., a Prime Minister of the Kingdom of Norway to Kazakhstan during 25 –26 May 2004 and approved by the Instruction of the Prime Minister of the RK # 302-p dated 13 October 2004; Decree of the Government of the RK # 978 dated 11 October 2006 "On signing the agreement between the Government of the RK and United Nations Development Programme on the project "National Integrated Water Resources Management and Water Efficiency Plan in Kazakhstan"; Concept for development of water economy sector and water management policy of the RK up to 2010, approved by the Decree of the Government of the RK # 71 dated 21 January 2002 (attachment 11,15)
Responsible Agency for preparation	Committee for Water Resources, Ministry of Agriculture of the Republic of Kazakhstan
Objective	Formation and development of the national integrated water resources management and water efficiency to ensure environmental safety and sustainable development in the Republic of Kazakhstan
Tasks	First phase (2008-2010): a) Improvement of water resources management system: assistance in development and implementation of National Water Policy; improve organizational capacity and competence of CWR and RBO; establishment of RBCs and increase their authorities; development of Basin IWRM &WE plan for each river basin in across the country; development of Basin Agreements and mechanism for enforcement;

	employment of norms to limit water consumption and discharge of wastes based on scientific substantiation; development and employment of mechanism to indemnify damage due to contamination, incompatible actions in water bodies and harmful impact caused by water; introduction of payment for ecosystem services; development of water and land resources monitoring system; establishment of foundation for unified information system, improvement of exchange of information, access to information in the filed of use and protection of water resources, and of harmful impact caused by water; public awareness and involvement of all stakeholders in decision making process in respect of water issues; training and education of staff in water sector, establishment of training centers; strengthening of inter-state cooperation in the field of use and protection of trans-boundary water, conclusion of agreements son exchange of information and establishment of inter-state data base on comprehensive use and protection of trans-boundary water and harmful impact caused by water; b) Increase water efficiency: provision of legal and institutional conditions for establishment of water users associations, hydro-amelioration condominiums and extension services on water saving; introduction of economic incentives and technological innovations; development of action plan on improvement monitoring system on use of water bodies, water economy systems and facilities at local level; provision of legal and institutional conditions for development of metrological support for operational hydraulic measurements at water economy systems and employment of advanced equipment and technologies for measurement, automatic processing, computer etc.; development of action plan on prevention and liquidation of consequences caused by harmful impact of water; conduction of study on selection of effective methods in irrigation agriculture and training to farmers; development and implementation of programmes/campaign in water resources management and water efficiency. Second phase (2011-2025) a) Improvement of water resources management system: strengthening institutional capacity in use and protection of water bodies, prevention and response plan of harmful impact caused by water; development of mechanisms on sector-wise cooperation; provision of water management planning at inter-state, national,

	river basin, regional (territorial) level of management; development and introduction of economic mechanisms for sustainable water use; development of system for environmental norms and standards as part of environmental safety; development monitoring system of water bodies/ecosystem and quality of nature water; establishment and development of information infrastructure in the field of use and protection of water resources; development of education and training system for staff involved in the field of use and protection of water resources; development of inter-state cooperation and improvement of trans-boundary water management; implementation of agreements on exchange of information and establishment of data base on complex use and protection of trans-boundary water bodies; b) Increase water efficiency: development of water users association at local level (WUAs, RCCWUs) and extension system on water saving; improvement of payment system on water use counting establishment of WUAs and their services on water delivery; improvement of monitoring system on use of water bodies, water economy systems and facilities at local level; improvement and development of system ensuring operational hydraulic measurements at water economy systems and complexes across the country and their further re-equipment based on employment of modern measurement instruments and equipment , computer, automation technologies; development of system on response and prevention plan due to harmful impact caused by water at local level; development and implementation of pilot projects on water efficiency improvement; information campaign on water saving including training.
Required Resources and Financing	Financing of the Programme shall be made from the fund of the central and local government budget, fund of legal entities, fund of nature users, grant of international organizations and donor-countries as well as other fund not prohibited by the legislation of the RK. Amount shall be clarified at the time of formation of budget for appropriate fiscal year. Financing for further phases of implementation shall be determined as per prepared action plans for adequate implementation period.
Expected Outcomes	In the field of improvement of water resources management system: 1) First phase (2008-2010): Foundation to transfer to IWRM has been established, capacity

	building of authorized bodies and partnership organizations in the field of use and protection of water resources has been strengthened; Establishment and employment of institutional mechanism in terms of coordination and integration has been ensured; Legal basis for formation of targeted financing of water economy and water protection measures has been created; The planning system of water management and annual reporting system have been improved; Basin IWRM plan in each of 8 river basins has been drawn up their implementation has been ensured; The background for implementation of action plan on improvement of water quality has been established; Centers on water quality control have been established in RBOs; Programme/strategies on improvement of water/ecosystem quality has been drawn up at national and river basin levels; Methodology for quality standard of surface water has been introduced based on the maximum permissible harmful impact (MPHI); Conditions mitigating harmful impact caused by water have been ensured; Development of water and land resources monitoring system has been ensured; Basis for information infrastructure of water sector has been established; Comprehensive monitoring system over harmful impact caused by water has been improved; Risk assessment methods in respect of harmful impact caused by water has been designed based on GIS and remote sensing of earth surface have been designed; Catalog of most dangerous areas subject to water-related disaster has been issued; response plans have been developed in respect of nature or man-caused emergencies caused due to harmful impact of water; works on raising public awareness and involvement of civil community in decision making on water related issues have been conducted; programmes on education and training of staff in use and protection of water resources have been drawn up and implemented; training centers have been established under CWR and RBOs; support on introduction of IWRM in river basin of trans-boundary water by respective governments has been achieved; 2) Second phase (2011-2025) будут: Water management system has been formulated based on IWRM principles; Financing sources for targeted water management, water protective

	and water conservation actions have been identified; Inter-sectoral coordination of water economy planning at inter-state, national, regional, river basin levels of governance has been ensured; Basin Agreements in all river basins have been prepared and enforced; Water resources management plans counting EU legislation, as well as improvement of water efficiency and protection on harmful impact caused by water have been developed and implemented; Legislation basis of water sector has been harmonized with that of European Union; Transfer to water quality management based on MPHI has been accomplished in all river basins; Payment system for eco-system services has been introduced in pilot/model river basins; Master plans on protection of settlements and facilities against flooding and landslides have been designed; Special emergency rescue and hydro-construction organizations have been established in order to provide works on restoration/rehabilitation in emergency caused by water, as well as for design, construction and prevention of facilities against flooding and landslides; Safety of settlements, facilities and areas against harmful impact caused by water due to disaster, industrial accident and catastrophe has been ensured; Sustainable operation of Unified information infrastructure of water sector has been ensured and access to water information to all stakeholders has been enabled; Education and training of staff in use and protection of water resources have been ensured; Efficient basin management has been achieved promoting meeting guaranteed demand of people, economy and ecosystem in water – contributing: achievement of strategic goal of being one of the fifty competitive countries; Concept on transfer to sustainable development 2007-2024, Strategy on industrial and innovative development 2003-2015, implementation of three key tasks of National Development Strategy 2030: efficient (integrated) use of resources, fare sharing of limited resources and provision of environmental sustainability; Environmental stability and "good" conditions in water bodies have been ensured by 2025 – quality of water in sources of portable water has been improved – promoting (i) achievement of objectives set in the national programme "Drinking Water"; (ii) half reduced share of people without access to basic drinking water and sanitation services by 2015 (Goal 7, task 10 MDGs) – damage decrease due to consumption of poor quality of drinking water (morbidity reduced, life expectancy increased across the country);

	Equality and mutually beneficial use of trans-boundary water has been achieved; Water ecosystem degradation process has been sustained and prevented – damage caused to ecosystem has been reduced, conditions supporting their sustainable functioning and provision of services and resources have been crated. In the field of water efficiency increase: 1) First phase (2008-2010): Establishment of water users associations and extension service on water saving have been continued at local level; Effective financial and economic mechanisms ensuring reproduction and conservation of water resources potential have been designed and introduced; Action plan on improvement of monitoring system over use of water bodies, water economy structures including protection against harmful impact caused by water has been drawn up at local level; Legislation in terms of water counting and provision of operation of water measurement system has been improved, organizational structure of the national measurement service has been strengthened and branch centers on staff training on hydro measurement have been established; Works on rehabilitation of existing and new construction of water counting stations equipped with modern automotive measuring instruments and tools have been arranged; Works on re-equipment of water economy system have been arranged based on employment of advanced means for measurement and automation; Conditions on transfer from supply to demand governance of water have been established (education, public awareness on water saving); Measures on achieving goals and set indicators on implementation of Central –Asian Initiative on sustainable development presented at the 5th European Conference of Ministers "Environment for Europe" have been taken; 2) Second phase: (2011-2025) будут: Net of water users associations has been formulated and operation of WUAs has been ensured at local level – efficiency in water use has been improved; Economic incentives and technological innovations for demand management have been introduced – water losses have been reduced in all sectors of economy; Implementation of commitments of Kazakhstan taken in Central-Asian Initiative on sustainable development has been ensured; Monitoring system on water bodies, water economy system and

	structures has been improved at local level; reliable protection against harmful impact caused by water has been provided at local level; Control system over enforcement of legislation in the field of measurement of water in water facilities has been improved; Development of metrological infrastructure for hydraulic measurement has been ensured; special metrological services properly equipped and strengthened with organizational resources have been established in water management organizations; Restoration of existing and construction of new additional water counting stations equipped with modern measuring instruments and automation tools have been provided; Re-equipment of water economy systems and facilities has been accomplished based on advanced means of automation and measurement; Decisions of ICWC, in particular, in respect of programme of Coordinative Metrological Center (CMC) on provision of equipment for operation of hydro-metrology service at inter-state water management systems have been implemented; Pilot projects on water and land resources use efficiency have been designed and implemented; Public awareness on water saving and protection of water resources has been established.
Terms of Implementation	1 phase: 2008-2010 (establish foundation to move to IWRM) 2 phase: 2011-2025 (employment of IWRM in practice to achieve socio-economic goals set in the National Development Strategy "Kazakhstan 2030" as well as relevant mid and long-term national sector-wise development programmes)

2. Introduction

The National Integrated Water Resources Management and Water Efficiency Programme in Kazakhstan for 2008 –2008 (hereinafter referred to as "Programme") has been drawn up based on:

Paragraph 26 of the Plan of Implementation proposed at the World Summit for Sustainable Development (Johannesburg, 2002);

The Concept of development of water sector and water economy policy in the RK up to 2010, approved by the GOK' Decree # 71 dated 21 January 2002 (attachment 11,15);

Item 10 of the Action Plan proposed in the agreements achieved during the official visit of Bondewick K.M., a Prime Minister of the Kingdom of Norway to Kazakhstan during 25 –26 May 2004 and approved by the Instruction of the Prime Minister of the RK # 302-p dated 13 October 2004;

UNDP Country Programme for Kazakhstan for 2005-2009, approved by the GOK dated 9 March 2004 and Executive Council of UNDP dated 28 January 2005 (indicator 2.2.1 (a) Action Plan of Country Programme 2005-2009);

Decree of the GOK # 978 dated 11 October 2006 "On signing an agreement between the Government of the RK and UNDP project "National Integrated Water Resources Management and Water Efficiency (IWRM &WE) Plan in the Republic of Kazakhstan".

The transferring process to Integrated Water Resources Management based on the National IWRM and WE Plan world widely recognized as a trigger for promotion and achieving objectives and tasks on sustainable development[1]. In international practice the IWRM has been defined as "a process, which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems". Introduction of IWRM is one of the priorities announced by UN of the International Decade of Actions "Water for Life" for 2005 –2015.

The Programme is the basic document for the improvement of water management sector of the Republic of Kazakhstan and determines the complex of priority actions on creation of favorable conditions, in terms of legislation, institution and development of the tools of the integrated water resources management in Kazakhstan.

The need for the solution at the current water problems in the Republic of Kazakhstan as one of the most priority tasks to ensure sustainable development of the country is determined in many legislative acts of the program nature:

Presidential Decree #310 dated 06.04.2007 "On Further Measures for Implementation of National Development Strategy up to 2030";

The Concept of the RK on National Environmental Security for 2004-2015 approved by the Presidential Decree #1241 dated 03.12.2003;

Strategy of the RK in Industrial and Innovative Development for 2003-2015 approved by the Presidential Decree #1096 dated 17.05.2003;

The Concept of the RK on Transfer to Sustainable Development during 2007-2024, approved by the Presidential Decree #216 dated 14.11.2006 and etc.

[1]The World Summit on Sustainable Development (Johannesburg, 2002) and World Water Forums: third (Kyoto, 2003) and forth (Mexico, 2006) highlighted the growing understanding that water crisis is, mainly a crisis of management, disintegrated actions of organizations concerned and a lack of finance. The similar problems were accumulated in Kazakhstan and to overcome them it is necessary to adopt new approaches; introduction of IWRM with involvement of all stakeholders through Programme may be taken as one of the possible options to solve the problems in water sector.

The Programme has been drawn up within the framework of UNDP project under the assistance the Government of Norway, IDIF, Stockholm International Water Institute and GWP. The Programme has been drawn up under the involvement of all government organizations concerned, major water users, local authorities and local community.

The implementation of the Programme refers to category of innovative activity and in accordance with the legislation shall subject to the state support (the Law #135 dated 23.03.06 of the RK "On State Support of Innovative Activity").

The full introduction of IWRM into the real activity of all economic entities and individuals is the vital necessity for sustainable development and targeted achievement of being one of fifty most competitive countries.

Abbreviation

ALRM	Agency for Land Resources Management
CEP	Committee for Environmental Protection (National)
CGSRU	Committee for Geology and Sub-Soils Resources Use(National)
CWR	Committee for Water Resources (National)
DEP	Department of Environmental Protection (Oblast)
DG	Department of Geology (Oblast)
EUWFD	European Union Water Framework Directive
GOK	Government of Kazakhstan
GOSSTANDARD	State Standards Organisation
GWP	Global Water Partnership
IFI	International Funding Institution
IMWG	Inter-ministerial Working Group (National)
IWRM	Integrated Water Resources Management
MA	Ministry of Agriculture
MDGs	Millennium development Goals
MEMR	Ministry of Energy and Mineral Resources
MEP	Ministry of Environmental Protection
MES	Ministry for Emergency Situations
ME&S	Ministry of Education and Science
MFA	Ministry of Foreign Affairs
MH	Ministry of Health
MIT	Ministry of Industry and Trade
MPHI	Maximum Permissible Harmful Impact
MJ	Ministry of Justice
NWIC	National Water Information Centre
RBC	River Basin Council (River Basin)
RBO	River Basin Organisation (River Basin)
RCCWUs	Rural Consumptive Cooperative of Water Users
RK	Republic of Kazakhstan
RSE	Republican State Enterprise
SES	Sanitary and Epidemiological Services (Oblast)
SSWM	Sub-Soil Water Monitoring
UIF	Unified Information System
WE	Water Efficiency
WUA	Water User Association

Key Definitions[2]

Water resources – reserves of surface and ground water concentrated in water bodies, which are in use or may be used.

Water body – concentration of water on the surface relief and within the entrails of Earth, which has its boundaries, volume and water regime.

Water eco-system – all water bodies and land areas located in the zone of their impact are given the definition of water ecosystem which are divided on following classes:(i) aquatic (aquatic area of sea, lake, reservoir, river bed); (ii) delta (delta front and river delta); (iii) flood plain (flood plain of river).

Water efficiency – a system of measures providing for rational and efficient use of water resources.

Water economy system – mutually connected water facilities and hydraulic structures intended for ensuring rational use and protection of water as well as removal of sewage.

Harmful impact caused by water – negative impact of water upon economic or other activities resulting from emergency situations of natural or technogenic character.

Integrated water resources management (IWRM) – a process that promotes coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in equitable manner without compromising the sustainability of vital eco-systems.

Environment - all natural and artificial objects, including air, ozone layer of the Earth, surface and ground water, land, subsoil, flora and fauna, the climate, and the interaction therebetween.

Protection of water bodies – activities aimed at preservation, restoration and recovery of water bodies as well as at prevention of harmful impact of water.

Prevention of emergency – set of measures taken in advance and aimed at maximally mitigate the risk of emergency situation to be occurred, protection of human health and life, reduction of damage and loss.

Rational use – use of water resources minimizing loss of resources (water, financial or human etc.).

River basin – catchment area from which all surface runoffs via various water courses and channels flowing to receiving water body (sea or lake) through the single estuary – delta of river.

Water resources management – a set of legal, institutional, organizational, technical, economic measures aimed at ensuring: coverage of demand of population and sectors of economy in water; reproduction of nature water; and protection of their good quality conditions.

Sustainable development of country – development meeting demand of present generation without compromising future generation to meet their demand.

Emergency situation – situation occurred on certain area due to accident, disaster or catastrophe which caused or may cause human fatality, injury, damage to environment or economic facilities, significant loss and destruction of life conditions.

Nature –caused emergency situation – emergency situation occurred due to disaster (earthquake, landslide, mudflow, flooding, etc.), wild fire, epidemics, epizootics, diseases of forest and agricultural plants by pest or other reason.

Man-caused emergency situation - emergency situation occurred due to industrial, transportation or other accident, fire (explosion), accident with emission (threat of emission)

[2] The terms applied in the Programme relevant to those defined in Water and Environmental Codes as well as other legal acts of the RK

of strong poisonous, radioactive or biologically dangerous substances, sudden collapse of building or structure, dam outbreak, accident at power supply and communication facilities, treatment facilities.

Good conditions of surface water – state of surface water body when its ecological and chemical conditions, at least, are good (EUWFD #2000/60/EU dated 23 October 2000).

Ecosystem – interrelated whole of organisms including habitat; the ecosystem model is characterized with relations directed from factors of habitat towards major element – host (biota, organisms).

Ecosystem resources/goods and services – in the Programme it means services and process through which ecosystem makes the human life possible and ensuring human life. Ecosystem resources/goods/(services) means benefit, which is derived by human directly or indirectly from functioning of ecosystem.

Environmental safety – security of vital interests and rights of an individual, society and the state against threat arising out of man or nature-caused impact on environment.

Efficiency of water resources use – term meaning use of water in non-wasting manner.

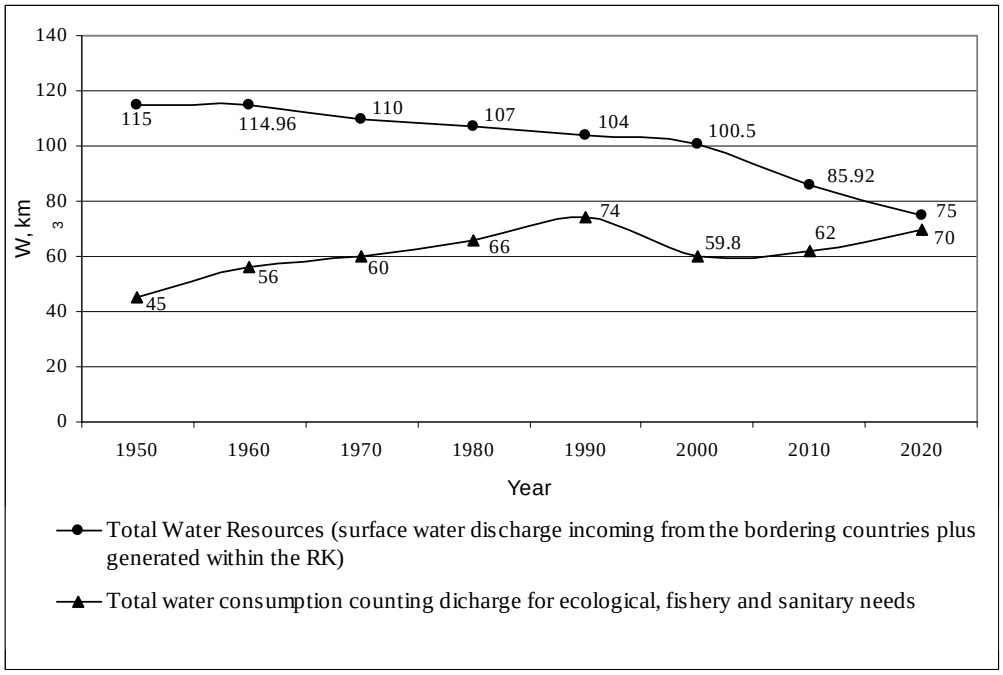
3. Analysis of Present Conditions

There is a set of constraint factors in water sector impeding sustainable social and economic development of Kazakhstan, and attaining the balance between the existing available water resources and demand in water. Water is the key natural component, which ensures existence of humanity and integrity of ecosystems. At the same time, the availability of water resources is one of the constraint factors of the development.

The Concept of development of water sector and water economy policy in the RK up to 2010 (hereinafter – Concept) outlines the most critical issues in water sector amongst which are the growing deficit in water, contamination of surface and ground water, huge, out of norms losses of water, problems in supply of population with safe drinking water, problems with inter-state water sharing, threat in depletion of water resources due to growth in number of population and development of economy. In order to overcome water crisis, the improvement in water resources management and water efficiency has been given the priority in national water management policy[3].

The analysis of present conditions in water sector has revealed a set of key issues still unsolved in the management system and thus may cause real threat to development of economy, environmental sustainability and provision of population with drinking water by 2015-2020 (Figure 1).

Figure 1. Water Resources and Water Consumption in the Republic of Kazakhstan for a period up to 2020[4]



The priority issues in water use and water management that need to be addressed urgently are the following:

[3] Item 11, Concept of development of water sector and water economy policy of the RK up to 2020, approved by the decree of the GOK #71 dated 21 January 2002

[4] Data are taken on the basis of survey and study made by R&D Institution of Water Management of the RK (materials of Scientific and Practical Conference, Taraz city, 2005, pages 59-68)

Inadequate national water policy. It is obviously that real and effective management needs reliable political background and strong political commitments. So far the national water policy does not expressed itself coherently, i.e. the absence of "water vision", a number of conceptive objectives but without quantitatively measured factors and a number of long-term integrated programmes, as shows experience, may lead to dispersion of state budget over large number of various projects and thus to falling efficiency in water management activity in general.

Organizational immaturity and sectoral fragmentation. In spite that organizational reforms in water management sector are recognized at high political level, no actual reforms are taking place. The facilities located in water basin are governed by different management systems though they are bound by unified nature complex and linked to each other through technological processes. The subordinate nature of CWR (which is in the organization structure of Ministry of Agriculture) does not promote and efficient implementation of state policy in the field of use and protection of water resources, inter-sectoral co-ordination, integration of water users interests, settlement of accumulating problems at national as well as global levels and sustainable development of water sector. Cross-sectoral participation and bureaucratic obstacles (agriculture, power generation, environment protection), immaturity of mechanism for achieving consistency of sector-wise interests, unaccountability of specific character and role of water resources (interaction and inter-influence in space, absence of administrative borders, varieties in flow due to season) in decision making may lead to conflict, economic loss and infringement of water users rights.

The key constraints in organizational structure are as follows:

Low status of Water Resources Committee (CWR) and River Basin Organizations (RBOs); limited power due to subordinate character of CWR; permanent re-organizations and staff cutting;

Immaturity of organizational structure of both CWR and RBOs which suffering lack of department, like departments that should be in charge of analysis, planning, updating of plans of water use;

Absence of real authorities and resources necessary for their full operation in compliance with the basin IWRM principles;

Absence in practice the organization in charge of water quality management empowered with certain appropriate authorities;

Sharing of functions and tasks in governance of surface and ground water resources by different organizations; the same conflict exists in economic mechanism of the cost of water services, like in respect of water charge for ground water supply;

Lack of efficiency of the system protecting water eco-systems based mainly on the measures of restrictions and prohibitions;

Absence of body entitled with powers to draw up state policy in the field of water supply and sewerage, excluding tariff setting policy;

Loss of water staff, practitioners and professionals involved in research and design of water economy sector;

Lack of involvement of civil society in process of decision making;

Lack of transparency and accountability of management bodies.

The major obstacle on the way of efficient water management is *lack of capacity* of organizations in charge of nature protection and water management and other organizations concerned, as well as of civil society, system of civil defense and NGOs. Understaffing in management, research and development sphere was caused by *lack of financing*.

Inefficient mechanism for applicability of the existing legislation in the water economy sector. In general in Kazakhstan the legislation necessary for enforcement of IWRM has already been established: Water, Land and Forestry Codes (2003), Environmental Code (2006); Law on Sub-soil resources and sub-soil resources use (1996), Law on Emergency situations of nature and man-caused character (1996), Law on Civil Defense (1997), Law on local self-governance in the RK (2001), Law on Industrial safety on dangerous industrial facilities, Law on Sanitary-epidemiological welfare of population (2002), Law on Rural Consumptive Cooperative of water users and etc.

The Water Code has built the legal foundation for undertaking reforms in water management, however, its provision do not supported with practical steps and subordinate legal norms and acts directly entitling implementation of provisions set in the Water Code. No mechanism on implementation of laws has been drawn up in respect of basin IWRM. The water legislation mainly encompasses the provision of general character, does not outline the whole set of problems pertaining to institutional fragmentation and conflict of interests of all stakeholders involved, does not have detailed mechanisms on preparation and making the decision. The legislation does not emphasize the procedure or coordinative order in fulfillment of international commitments on international agreements and conventions. The work on compatibility of local legislation with that of EU is just at the initial stage of preparation.

Limited application of modern governance instruments – water resources assessment, risk assessment in terms of harmful impact caused by water, preparation of water resources management plans, including response and prevention plan, demand management, conflict settling procedure, regulating and economic instruments, exchange and management of information, all resulting in *inefficient planning* (uncertain goals and absence of indicators demonstrating project/programme effectiveness) and allocation of investment in capital-intensive projects providing no monitoring of project effectiveness. Currently producing by RBO annual report do not distinct targets and tasks in water basin management, protection of water eco-system, and, consequently, action plans.

Presently the resource approach is prevailing in water sector meaning deployment of new sources of water and extensive development of infrastructure, or meeting supply in stead of regulating demand. Low efficiency in water use, in particular, in irrigated agriculture, is currently one of the main reasons of scarcity of water resources in Kazakhstan. Inability to regulate at local level, lack of overall responsibility for conditions of irrigation system, and their low efficiency makes the situation even more worsened. Economic mechanisms for sustainable water use are not developed – vague introduction of market instruments does not trigger water users to water saving and water efficiency attitude, prevention of contamination. Issues pertaining to *accounting of water at all levels of management* are also remaining unsolved. The urgent issues that need to be addressed to are: low building capacity of the national center of metrology, understaffing, absence of metrological service at all level of water management, as well as maintenance metrological service at all water facilities and RBOs across the country, lack of communication means, instrument, testing equipment, workshop for O&M and storage in all water management organizations, including RBOs. Due to the above mentioned reasons and also due to poor technical conditions of water metering points, or in some areas – absence of such points-lack of metering automatic equipment, data transfer, absence of information system in water management facilities and systems has been resulted in low quality control in terms of quantity of water abstraction and distribution (Efficiency factor of canal is determined

approximately). It is obviously that under current conditions it is impossible to conduct proper counting of water, receive reliable data on use of water, and it adversely impacts on quality of keeping state water cadastre which should be operated based on the data of state counting of water, providing information on water resources, water bodies, water users and protection of water resources.

Ignorance of eco-system restrictions. Social, economic and especially environmental requirements are not counted in planning the development of water sector. Ignorance and unaccountability of nature protective requirements in water economy sector lead to critical situation almost in all water basins across the country. Problems on degradation of forest and pastures, glacier reduction, soil erosion in catchment area are only declaratively sounded but not play the foundation for scenario modeling in respect of development of river basin and decision making. In spite of the fact that the economy of the country significantly depends on water resources conditions, no economic assessment is made in terms of water eco-systems and resources and services that are provided by them to the society. The main disadvantage of the existing scheme of complex use and protection of water resources (master plan), plans for construction of water facility and amelioration system is that both schemes (plans) do not account for sustainable, fare and reasonable provision of water to eco-systems. No accountability of necessary quantity of water is made in respect of ecological flows and sanitary discharge to downstream of rivers; these needs are mainly depend on annum water availability and thus downstream requirements of eco-system are provided with water irregularly.

Eco-system principles were not incorporated in the Water Code because protection of water eco-system is incompatible with water use regulation and therefore this type of activity was not included in scope of tasks of state bodies concerned at legislative level. Works on collection of data and information on water eco-systems are conducted unsystematically, not in full scope and employing old methodology and equipment. No state monitoring system on eco-system exists.

One of the reasons of eco-systems degradation is *inadequate water quality management system at river basin level*. The monitoring of qualitative characteristics of water is conducted by the following organizations: Kazhydromet (ambient monitoring of surface water), oblast department of environmental protection (monitoring of quality of industrial wastes), territorial department of S&ES (monitoring of quality of drinking water), territorial departments of the Committee of Geology and Sub-soil Resources Use (monitoring of quality of ground water). Most of information stored and maintained by the above-mentioned organizations is not accessible and not enough to RBOs in order to do planning and make decisions on improvement of water quality. The information is also inaccessible to public.

Immaturity of civil society and NGOs. The experience on establishment of Water User Associations (WUAs) and Rural Consumptive Cooperatives of Water Users (RCCWUs) has revealed that both organizations are at the stage of their formation and practically are not involved in water resources management, infrastructure modernization, safety provision for areas and population against harmful impact caused by water.

In spite of a large number of existing NGOs, only few of them are involved in decision-making process in water economy sector. Water issues need to be solved at local level whilst NGOs are placed mainly in big cities.

Inadequate system for prevention and liquidation of water-caused harmful impact. Harmful impact of water can be observed in cases of man- or nature caused emergency

occurred due to: raining, heavy reining, high water, landslide, ice jam or ice gorge during spring or autumn navigation, high or low water table, up- or down spurge in big water bodies, exceeding of maximum permissible concentration of harmful substances in surface and ground water, drinking water, exceeding of MPC of radioactive substances in ground water, accident at sewerage system with massive discharge of pollutant, accident in heat network during cold season (hot water supply system), in domestic water supply system, accident in sewerage system of industrial enterprise with massive discharge of pollutant, outbreak of dam (weir, gate etc.), outbreak flooding, catastrophic flooding, emergency discharge from reservoir of hydropower plant due to threat of outbreak of dam, outbreak of sludge and clayish mass in mining, wash out of coastal line due to storm spurge[5].

There is no single organization in the country, which is entitled and responsible for prevention and liquidation of harmful impact caused by water. This function and responsibility is significantly dispersed amongst sectoral authorized bodies (MES, MA, MEP, local executive bodies, legal entities engaged in economic activity). There is no coordination at state level as well. Approved classification of harmful impact cause by water does not exist, systematic database on such phenomenon is not available, pattern on most types of such phenomenon are not studied, and assessment of risk and scope of damage caused by such phenomenon are not made. During the soviet era there were special design and productive organizations responsible for provision of protection against water within the institutional structure of the former Ministry of Water Management, however after dissolution of soviet, these organizations were eliminated but new ones were not established. Therefore in the emerging national IWRM system the problem of harmful impact caused by water shall be given a high consideration.

Lack of responsibility for operation of water infrastructure. The actual level of wear of water economy facilities accounts for over 60% and thus the reliability and safety of strategically important facilities has been reduced. Out of 653 hydraulic structures in the country, 268 need urgent rehabilitation. The most critical situation is being observed at dam of major Headworks, over break of which may cause catastrophic flooding.

Currently nobody in practice holds a responsibility for operation and technical conditions of irrigation systems, distributing water fro intake structure till field. Absolute number of on-farm canals, which now owned by water users formally, but are actually out of real owners and thus became worthless. This situation resulted in low efficiency of distribution network, leakage and loss in huge quantity, rising of ground water table and soil salinization in adjacent areas.

The body entitled and responsible for services in the sphere of water supply, sewerage, waste treatment, development of operation and maintenance norms, technical norms, rules for monitoring quality of services and etc does not exist in the country. As a consequence – lack of safe and accessible portable water as well as limited access to sewerage service. More over, the contamination of water bodies with untreated or insufficiently treated domestic, industrial or other type of effluents is being continuing.

Immaturity of national information system. Access and exchange of information is not developed; water management organizations does not have access to information of other state organizations while community shall solve the problem with access to information by themselves. There is no organization capable to maintain full database in

[5] Classificatory of emergency situations adopted by Inter-state Council of CIS for Nature and Man-caused Emergencies on 15 August 2002 "Legal and Methodological Basis of CIS on Emergency Situations", Moscow, 2003

water sector. Thus, stakeholders do not have access to socio-economic and environmental information and the decision making process reduces its objectiveness at al levels of management. Lack of information and low level of awareness pertain not only to decision makers but the population as well. *The education and training system needs improvement*. The existing gaps in educational system cause lack of qualified specialists in water sector.

International cooperation and trans-boundary water management. In trans-boundary water management there are issues which need to be addressed: water sharing regulation, absence of inter-state monitoring system of water resources, absence of system on exchange of reliable information on use of water resources, joint emergency alarm system on trans-boundary waters. Legal and methodological regulation on use of joint nature resources, approved evaluation and sanctioned system for environmental damage are also not available. So far the bilateral attempts in solving trans-boundary water contamination do not lead to practical result or reduction of pollution. All above-mentioned constraints are the serious challenges to sustainable water use of population and economy and to environmental safety of the country.

Specifically shall be emphasized on absence of national mechanism on implementation of international commitments, as there is no procedure and methodology on planning cross-sectoral actions accounting for international commitments of Kazakhstan in respect of international conventions and agreements.

The above-mentioned constraints have negative impact on economic, social and environmental conditions, causing damage to environment, human health and nature resources potential. There are vivid examples demonstrating consequences of inadequate water resources management system in Kazakhstan known worldwide.

Ecological disaster of Aral sea –1,863 thousand people are living in 178 settlements located in the zone of ecological disaster, and only 25% of population has access to drinking water mainly imported water or water directly taken from open water bodies. Such a situation results in high level of gastrointestinal diseases, anemia, especially amongst the women and children, high infantile mortality and congenital pathology.

The access of population to safe drinking water is low across the entire country: in 637 rural settlements (or 8.3%) people use water which does not meet the standard (mineralization over 1.5 g/l), of which in 176 settlements the content of salt in water varies between 2 and 3 g/l. These settlements mostly located in Northern-Kazakhstan, Akmola, Kyzylorda oblasts (State Programme for development of rural territories in the RK 2004-2010).

Urgent actions for solving environmental problems needs the oil and gas sector due to high risk of technogenic disaster in the Caspian shelf. Extensive exploration and production of hydrocarbon resources by all riparian countries of Caspian sea basin increases scale of impact on aquatic environment, causing disturbance to fishing, sea bed disturbance, change of fish migration way, increasing of water turbidity, emergency discharge, emission and oil spill to sea. Shallow Northern part of Caspian sea along with delta of Oral and Volga rivers is very sensitive to the above –mentioned impact, though this area has been announced a reserved area in 1974 no boundaries are laid out which should prohibit operation. All wells (over 200) out side of contracted area had been abandoned and about 100 wells need urgent measures on proper close and abandonment while 78 are submerged

in Caspian sea without proper abandonment and seal thus causing a serious concern for safety of aquatic fauna and flora.[6]

Lack of water and contamination of water adversely impact on agricultural productivity. Agricultural products grown on polluted soil cannot compete in the market due to low quality and cannot recover the cost of investment. Losses in yield were estimated at USD 200 mln annum (USD 1.7 bln in Central Asia). The diversification and salinization of agricultural land is being continuing due to overuse of water for irrigation and poor drainage system.

The quality of the majority of water eco-systems remains unsatisfactory. Out of total 44 surveyed water bodies, only 9 rivers, 2 lakes and 2 reservoirs were identified as "clean". Significantly contaminated were identified lake Balkhash, Kurgaldjin reserved area, Samarkand reservoir, rivers Ilek, Ili, Nura, Syrdarya, Irtysh and Shu. Degradation of eco-systems adjacent to water body, especially delta area of Ili and Syrdarya rivers, floodplain of Irtysh river is being progressing. No decision are made in respect of handling and utilization of industrial and domestic waste, prevention of untreated or insufficiently treated effluents generated in urban and rural area, industry, or waste water from irrigated fields.

Due to inadequate operation of hydraulic structures and their over-term of depreciation the risk of damage caused by accident or emergency is very high. Increasing anthropogenic impact on environment causes growth of catastrophic flooding in terms of scale and frequency of return.

It is expected that the above mentioned issues – consequences shall become more critical in the future due to global climate warming process, enlargement of farms, development of production and due to even the improvement of welfare of population. To avoid such a scenario it is required to introduce integrated approach which ensures comprehensive governance of water resources at all levels, accounting contribution of water users without compromising ecological sustainability.

IWRM is currently one of the most progressive technology and the best available approach, which has been recognized at international level. Introduction of IWRM is long-term process of improvement decision-making procedure at all levels of governance. The main emphasis is paid to "a process, which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".[7] The activity of stakeholders within the framework of this process is conducted in compliance with Dublin principles[8] and the concept of sustainable development adopted at the UN Conference on Environment and Development in Rio de Janeiro (1992).

First – basin principle has been widely recognized (Germany, Spain, France, etc.) as a principle that ensures conservation of eco-system, sustainable reproduction of safe drinking water and re-distribution of water along the territory. National hydrological plan of Spain makes some certain basin plans as standards; it also determines future transfer of water from one basin to another thus to ensure even distribution of nature resources.

[6] The Committee of geology and sub-soil resources use revealed 48 abandoned wells located out of contractual area in the submerged zone of Caspian sea (or so called "well without owner"). Since 2004, 24 wells were sealed and abandoned under the framework of the Programme for development of resources base of mineral resources complex of the country for 2003-2010. The work shall be completed in 2009.

[7] Catalyst of reforms: Guidelines for elaboration of IWRM and WE strategy; TEC GWP, 2004 (www.gwpcacena.org).

[8] The UN Conference on Water and Development in January 1992 consolidated the four "Dublin Principles"

Multi-purpose approach to use of water resources along with re-distribution of water amongst sectors of economy, in particular, transfer water to those sectors where the water used most efficiently, allowed Yemen to avoid economic crisis. In New-York, application of new methodologies in agriculture, forestation and other industrial operations, as well as grant provided for improvement of treatment facilities upstream of rivers in stead of procure new waste water treatment plant, allowed to save USD 4.4 bln. In Northern France, introduction of miner tax on consumption of ground water instead of construction of dam and pipeline, lead to sustainable use of ground water.

In Kazakhstan all pre-conditions to move to IWRM are available but still it is necessary to perform a huge scope of institutional, legal and information measures to undertake in order to ensure the development of the process. Certain conditions have already been created: key role in water resources management was entitled to CWR and RBO though it is necessary to significantly strengthen their institutional capacity. The water legislative framework has also been formulated in general, however to enforce it in practice some certain normative act shall be issued and measures on compatibility of local legislation with that of EU shall be undertaken. International cooperation is under development though to perform commitments taken by Kazakhstan in respect of international conventions and agreements, it is required to solve water resources management issues at national level first.

4. Objective and Tasks of the Programme

Objective

The main objective of the Programme shall be formulation and development of the national integrated water resources management and water efficiency system to ensure environmental safety and sustainable development in the Republic of Kazakhstan.

Tasks

The objective of the Programme shall be attained through fulfillment of the following tasks:

First phase (2008-2010):

a) Improvement of water resources management system:
   assistance in development and implementation of National Water Policy;
   improve organizational capacity and competence of CWR and RBO;
   establishment of RBCs and increase their authorities;
   development of Basin IWRM &WE plan for each river basin in across the country;
   development of Basin Agreements and mechanism for enforcement;
   employment of norms to limit water consumption and discharge of wastes based on scientific substantiation;
   elaboration and employment of mechanism to indemnify damage due to contamination, non-permitted actions in water bodies and harmful impact caused by water;
   introduction of payment for ecosystem services;
   development of water and land resources monitoring system;
   establishment of foundation for unified information system, improvement of exchange of information, access to information in the filed of use and protection of water resources, and of harmful impact caused by water;
   public awareness and involvement of all stakeholders in decision making process in respect of water issues;
   training and education of staff in water sector, establishment of training centers;
   strengthening of inter-state cooperation in the field of use and protection of trans-boundary water, conclusion of agreements son exchange of information and establishment of inter-state data base on comprehensive use and protection of trans-boundary water and harmful impact caused by water;
b) Increase water efficiency:
   provision of legal and institutional conditions for establishment of water users associations, hydro-amelioration condominiums and extension services on water saving;
   introduction of economic incentives and technological innovations;
   development of action plan on improvement monitoring system on use of water bodies, water economy systems and facilities at local level;
   provision of legal and institutional conditions for development of metrological support for operational hydraulic measurements at water economy systems and employment of advanced equipment and technologies for measurement, automatic processing, computer etc.;
   development of action plan on prevention and liquidation of consequences caused by harmful impact of water;
   conduction of study on selection of effective methods in irrigation agriculture and training to farmers;

development and implementation of programme/campaign in water resources management and water efficiency.

Second phase (2011-2025)

a) Improvement of water resources management system:
   strengthening institutional capacity in use and protection of water bodies, prevention and response plan of harmful impact caused by water;
   development of mechanisms on sector-wise cooperation;
   provision of water management planning at inter-state, national, river basin, regional (territorial) level of management;
   development and introduction of economic mechanisms for sustainable water use;
   development of system for environmental norms and standards as part of environmental safety;
   development monitoring system of water bodies/ecosystem and quality of nature water;
   establishment and development of information infrastructure in the field of use and protection of water resources;
   development of education and training system for staff involved in the field of use and protection of water resources;
   development of inter-state cooperation and improvement of trans-boundary water management;
   implementation of agreements on exchange of information and establishment of data base on complex use and protection of trans-boundary water bodies;
b) Increase water efficiency:
   development of water users association at local level (WUAs, RCCWUs) and extension system on water saving;
   improvement of payment system on water use counting establishment of WUAs and their services on water delivery;
   improvement of monitoring system on use of water bodies, water economy systems and facilities at local level;
   improvement and development of system ensuring operational hydraulic measurements at water economy systems and complexes across the country and their further re-equipment based on employment of modern measurement instruments and equipment , computer, automation technologies;
   development of system on response and prevention plan due to harmful impact caused by water at local level;
   development and implementation of pilot projects on water efficiency improvement;
   information campaign on water saving including training.

5. Major Outlines and Mechanisms of Programme Implementation

Implementation of the Programme shall be achieved through the actions taken in the following field:

1) Improvement of organizational structure, rebuilding institutional capacity, inter – sectoral partnership in the field of use and protection of water bodies;
2) Improvement and harmonization of legislation in water resources management;
3) Introduction of environmental component of IWRM and water quality management;

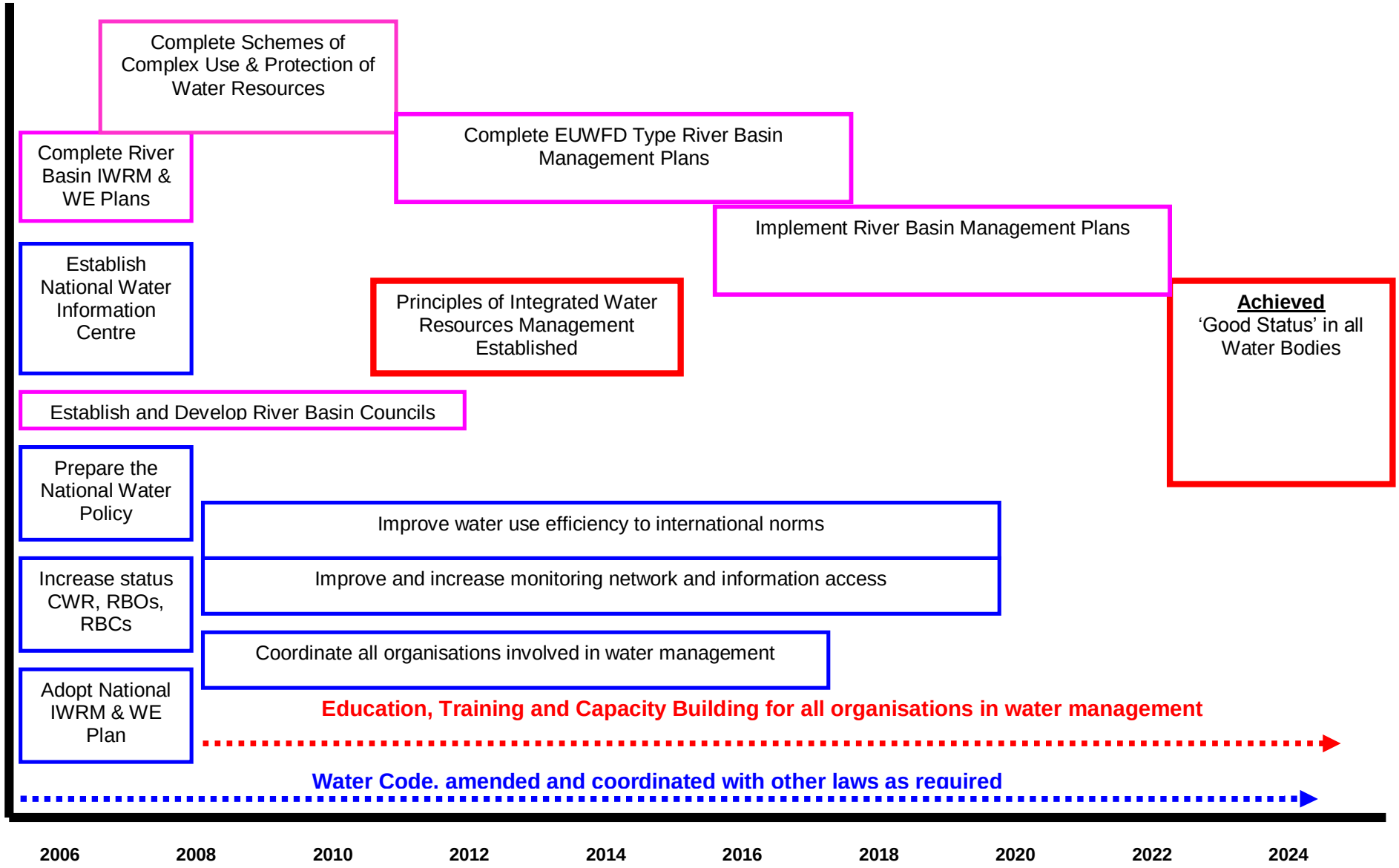
4) Prevention and liquidation of consequences of water-caused harmful impact;
5) Improvement of water efficiency and water accounting system;
6) Improvement of water and land resources monitoring system;
7) Improvement information exchange and information management, establishment and development of information infrastructure in the field of use and protection of water bodies;
8) Improvement of education and training of staff in the field of use and protection of water bodies;
9) Strengthening and development of inter-state cooperation, improvement of trans-boundary water management.

The Programme is aimed at establishment of one of the significant mechanisms in implementation of national water policy – water resources management system. The government of the country should provide the appropriate conditions in terms of legal, organizational and financial support to IWRM: explicit governmental control over water relations, customer-oriented policy, access to loan for financing of water management measures, centralized assistance of the government in sustaining and development of the water sector[9]. The IWRM Programme, in its turn, ensures achieving of priorities of water policy through establishment of professional governance, accurate forecast and planning based on scientific substantiation, inter-sectoral support in implementation of water policy. The phased implementation (Figure 2) of the tasks of the Programme shall be based on wide application of a complex of instruments of integrated management: assessment of availability and demand in water resources; protection of water bodies; preparation of Water resources management plan at inter-state, national, regional, river basin and local levels; demand control; water efficiency control; conflict solving and fair water sharing; regulating and economic instruments in water tariff policy; exchange and management of information for proper water management[10].

[9] Concept for development of the water sector and water management policy of the RK up to 2010 approved by GOK's Decree # 71 dated 21 January 2002

[10] Joint use of knowledge for equitable, operational and sustainable management of water resources "ToolBox", Version 2, GWP, 2002 (www.gwpforum.org).

Figure 2: Overall Vision from the National IWRM and WE Plan to 'Good Status' in all Water Bodies



5.1. Improvement of Organizational Structure, Institutional Capacity Building and Inter –sectoral Partnership

The IWRM principles need to take institutional measures at all levels of governance (inter-state, national, water basin and local).

In accordance with the legislation of the RK (Water Code, Article 33), the state control over use and protection of water resources is entitled on the GOK, an authorized body in the field of use and protection of water resources, local representative and executive bodies at oblast level (cities of national importance and capital cities) within the limits of their competence defined by the legislation of the RK.

The management of water sector in Kazakhstan is based on the basin principle (Figure 3). Major functions on state control are assigned on the authorized body in the field of use and protection of water resources (CWR) and its regional subordinate organizations called rives basin organizations (RBO).

The action plan of the Programme ensures gradual, step-by step improvement of organizational structure at river basin level. At the first phase it is proposed to submit to the GOK a draft proposal on increasing the status of CWR and RBO thus enable them to fulfill strategic tasks ensuring formulation and implementation of efficient national policy on use and protection of water resources.

The following measures shall be undertaken to improve organizational structure:

1) First phase (2008-2010)

   Submission to the GOK a draft proposal on increasing the status of CWR and RBO;

   Inclusion a Chairman of CWR in Council on Sustainable Development (CSD);

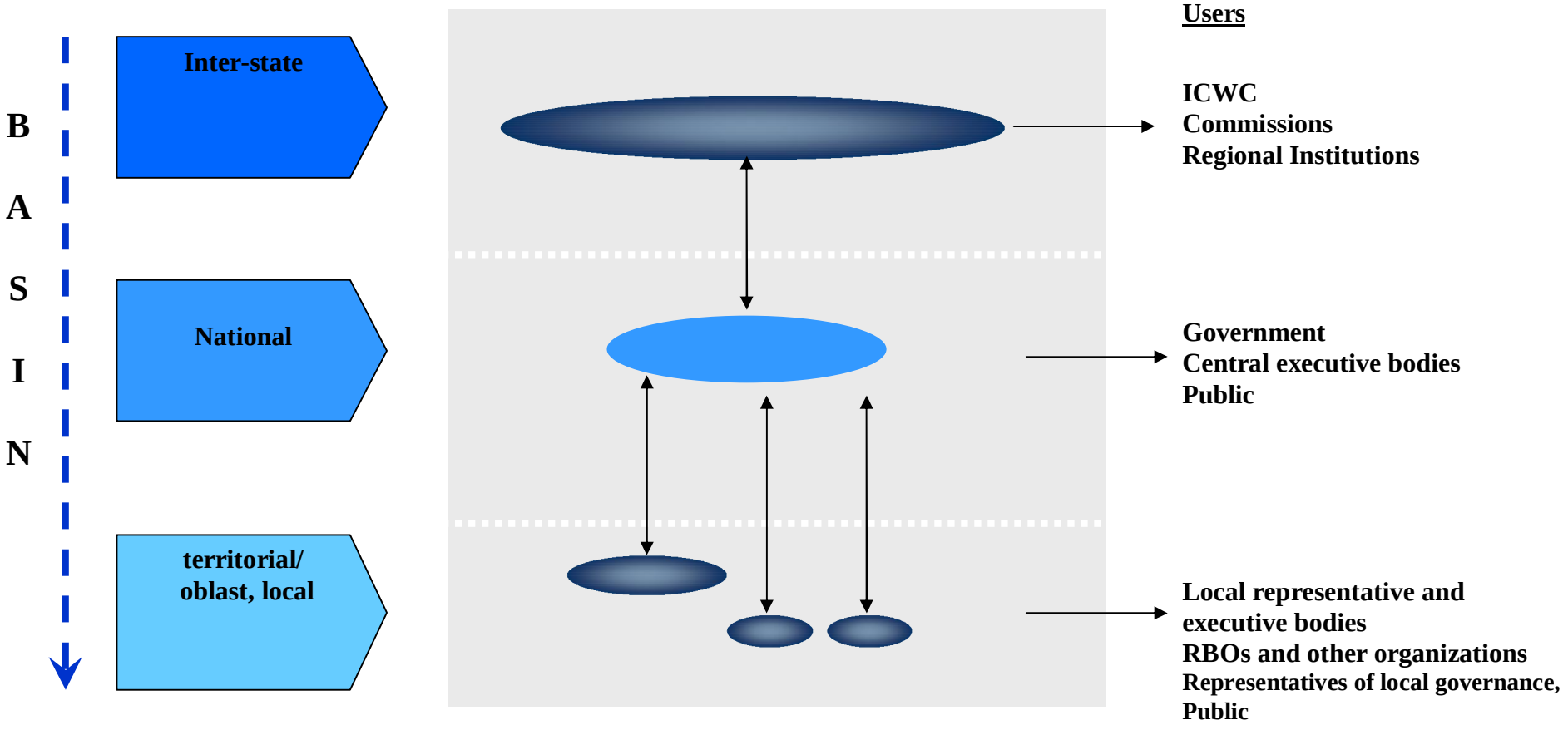
   Optimization of organizational structure of CWR and RBO – formulation of new departments on IWRM, public awareness, legal issues; establishment of planning department on planning analysis and updating water management activity for short-term, annum and long-term periods;

   Improvement of water management structure at river basin level (RBO), including establishment of RBO's branch in oblast, development of river basin council network covering other river basins along with their organizational structure improvement;

   Elaboration and introduction of procedure on consensus building between RBOs and other organizations concerned in respect of water issues;

   Demarcation of authorities between organizations in charge of use and protection of water resources and that of environmental protection, organizations in charge of sub-soil use, local executive bodies and etc.

Figure 3. Management Structure for Use and Protection of Water Resources (Water Code, article 33); Basin Management of Water Resources



2) Second phase (2011-2025)

Increasing the status of CWR and RBO: based on the results of discussion of various options in increasing the status of CWR and RBO, the most appropriate option was selected – to transfer CWR into Ministry of Water Management (MWM)[11], thus ensuring direct way in decision making process in the field of water management. It also allows conducting comprehensive control over use of water, to consolidate the management functions and resources to implement tasks at international, national, river basin and local levels;

Further process on establishing Eurasian Water Center under MWM, which shall be involved in R&D activity in respect of use and protection of water resources within the Eurasian continent. The necessity to establish Eurasian Water Center has been called in the speech of Nazarbayev N., President of the RK "New Kazakhstan in New World"[12];

Entitlement of function on management over use of ground water on central executive body on water resources management (MWM) and establishment under MWM of the Committee for Complex Use and Protection of Water Eco-systems which shall encompass newly created Hydro-meteorological Center (HMC), Hydrological Center (HC) and Metrological Center (MC);

Assignment of functions on management of hydraulic structures, prevention of harmful impact caused by water on MWM;

Establishment of Committee on Management of Water Economy System (CWES) under MWM;

establishment of Committee for Domestic Water Supply and Sewerage (WS&S) under MWM; the newly established Committee shall be in charge of tariff setting policy, legislation in the field of water supply and sewerage, identification of financing sources (subsidies) and assistance to WS&S operational companies in implementation of priority and long-term tasks, including inventory survey of water supply and sewerage system, monitoring over WS&S system, introduction of advanced technologies and best practices, training of staff etc.;

strengthening capacity of RBOs through development of affiliate network of RBOs at oblast level and establishment of HMC, HC and MC as well as CWES and etc.

Further strengthening of organization in charge of water resources management at all levels of basin management (Figure 3);

Support and development of RBC system at all levels of management, signing and implementation of Basin Agreements.

The following measures shall be undertaken to improve institutional capacity building:

1) First phase (2008-2010)

Increase staffing of CWR up to 70 persons (Table 1);

Increase staffing of RBOs up to 246 persons (Table 2 and 3) with provision of adequate resources;

Identification of potential financing sources;

Establishment of extension services under WM R&DC, which shall provide consultative assistance to various group of water users, promote water saving

[11] Minutes of Meetings, reports, materials of seminars, summary of comments issued to the Ist version of the National IWRM &WE Plan in Kazakhstan (www.voda.kz).

[12] National Strategy "Kazakhstan 2030"at new stage of development of Kazakhstan: 30 most prioritized directives of national and external policy of the RK. Part II, Astana, 28 February 2007

technologies and conduct activity on raising public awareness on environmental issues;

Increase organizational capacity of other organizations concerned;

2) Second phase (2011-2025)

review of existing procedure of fund allocation and identification of possibilities to reallocate financing to water management sector;

further strengthening of organizational structure and capacity building of MWM and RBO;

strengthening of organizational structure and capacity building of other organizations concerned.

The following measures shall be undertaken to improve inter-sectoral partnership in use and protection of water bodies/eco-systems:

1) First phase (2008-2010)

Approving of targets and priorities of parties concerned sub-item 2 article 71 and sub-item 4 article 72 of the Water Code);

Increase status of CWR, RBO and RBC;

Establishment of National Inter-sectoral Water Council as sole coordinative body under supervision of the prime Minister of the RK;

Support and development of RBCs;

Preparation, execution and enforcement of Basin Agreements;

Establishment of system on exchange of information;

2) Second phase (2011-2025)

Support and development of inter-sectoral coordinative instruments created at the first phase;

Demarcation of functions on water resources management and function on provision of services;

Improvement of mechanism on water sharing, permit system for intake of surface and ground water; permit for discharge of waste; development of relevant database;

Establishment of feedback mechanism between all organizations concerned at all levels of governance based on GIS structure.

Table 1. Immediate New Staff Requirements for CWR

Department / Area	Education / Expertise	No. of Staff
Department for Implementation of National IWRM Plan	Department Head	1
	Legal Specialist	1
	Public Administration Specialist	1
	Environmental Specialist	1
	Water Quality Specialist	1
	Agricultural Specialist	1
	Industrial and Domestic Water Specialist	1
	Technical Support Staff	4
	Total IWRM Plan Dept.	**11**
Planning Department	Water Resources Planner	2
	Economist / Financial Planner	1
	Technical Staff	2
	Total Planning Department	**5**
National Water Information Centre	Department Head	1
	IT Specialist	1
	Technicians / Data Entry	6
	Total Information Centre	**8**
Public Awareness Department	Department Head	1
	Programme Developers	2
	Technical Staff	2
	Total PA Dept.	**5**
Dam Safety Department	Dam Safety Engineer	1
	Technical Staff	2
	Total Dam Safety Dept.	**3**
Legal / Environmental Dept.	Legal Specialist	1
	Environmental / Ecologist	2
	Total Legal / Environment Dept	**3**
Total Minimum New Staff CWR (2008-2009)		**35**

Table 2: Staff to Support Expanding Functions of the River Basin Organisations (all RBOs) 2008-2009

Department	Staff Type			
	Professional	**Technical**	**Administrative**	**Total**
Department of Planning	2	2	2	6
Department of Conservation of Water Resources	7	4	0	11
Department of Comprehensive Water Use	N/A	N/A	N/A	N/A
Department of Monitoring, Information and Liaison	5	4	0	9
Other Departments	1	N/A	0	1
Total New Staff Required for Expanded Functions				27
Total New Staff Required for Expanded Functions				**27**

Table 3: Staff to Support Water Use Permit and Inspections (all RBOs) FOR 2008-2009

Details of Inspection Process	**Nura Sarysu**	**Ishim**	**Tobol-Torgai**	**Oral-Caspian**	**Aral-Syrdarya**	**Shu-Talas**	**Irtysh**	**Balkhash Alakol**
Inspections:								
Current number of inspections per year	196	450	477	600	1799	230	408	300
Days required per inspection (average)	4	4	3	3	2	4	4	8
Number of inspectors required for inspection only	**4**	**8**	**7**	**8**	**16**	**4**	**7**	**11**
Issuing New Permits:								
Number of new permits issued per year	180	200	126	505	505	50	162	460
Days per required for issue of a new permit	4	4	10	4	1	5	2	15
Number of inspectors required for issuing new permits	**3**	**4**	**6**	**9**	**2**	**1**	**1**	**31**
Required Number of Inspectors for inspection and issuing new permits	**7**	**12**	**12**	**17**	**19**	**5**	**9**	42
Current Number of Inspectors	11	17	12	5	16	7	17	27
Total New Staff Required (Sum Table 2 and 3)	**27**	**27**	**27**	**39**	**30**	**27**	**27**	42

5.2. Improvement and Harmonization of Water Legislation

In spite the fact that existing legal framework is well developed in the field of use and protection of water resources, the practice dictates on necessity to make amendments in water legislation and adoption of new legal acts and norms.

The Water Code (2003) plays the fundamental role in introduction and enforcement of IWRM (Figure 2). Under the Programme it is proposed that the implementation of eco-system approach and polluter pays principle shall be continued; and new, more flexible norms shall be introduced, proposals to water legislation issued by local organizations shall be adopted; legal basis for efficient interaction and coordination between national and local levels of water resources management (national and local water policy) shall be developed.

The following measures shall be undertaken to create favorable conditions for IWRM introduction:

Improvement and harmonization of water legislation;

Elaboration of regulations of direct effect for ensuring enforcement of Water Code by all participants involved;

Legal assignment of competence increasing status of CWR and RBO; strengthening institutional capacity and financing;

Improvement of regulatory and methodological basis in the field of use and protection of water resources;

Legal assignment of water rights to water users and right of eco-system on water;

Elaboration of procedure for making a decision at inter-sectoral level and execution of multilateral inter-sectoral agreements;

Elaboration of regulation on responsibilities for breach of right on water and breach of contractual relations.

The Water Code is a legal basis for implementation of international commitments of Kazakhstan in water management sector. Majority of its provisions are based on the principles adopted by international conventions and their recommendations. The President of the RK has signed a Law ratifying Protocol to the Agreement on Partnership and Cooperation between the RK and EU on 30 June 2005. The IWRM Programme shall promote compatibility of local legislation with that of adopted under European Water Framework Directive (#2000/60/EU), which objective is targeted on ensuring of "good condition" of water bodies. In the Programme, the achieving of "good conditions" of water bodies is planned by 2025 (Figure 2).

5.3. IWRM Environmental Component and Water Quality Management

Development of IWRM system in compliance with ecosystem approach. Within the last decade the ecosystem approach has been widely applied in water management. According to ecosystem approach, the water basin is considered as a holistic ecosystem. IWRM proposes socio-economic development under minimum damage to ecosystem (environmental sustainability). Conservation of aquatic ecosystem has been announced as a priority sub-regional target by Central Asian countries at Ministerial Conference "Environment for Europe" held in Kiev in 2003 (Target 1)[13]. UN Commission on Sustainable Development (12th session, 2004) in its resolution stated that "health of ecosystem is prerequisite for clean water and during the planning it is necessary to assess

[13] http://www.unece.org/env/proceedings/html/Item7b.e.html

the value of ecosystem". Integrated approach to water resources management allows avoiding "expensive measures on restoration, treatment and exploration of new water resources" (chapter 12, Agenda 21).

The provision of health of aqueous ecosystems is the guarantee of good ecological conditions of water resources. It ensures water users with water in required quantity and safe quality. Only under such condition the ecosystems enable to provide necessary goods and services ensuring development of fishery, tourism, public health and other sectors of economy. Ecosystem approach makes it possible to consider the interests of all water users, including needs in water of ecosystems themselves.

Flood prevention, regulation of flow and water reserves, improvement of quality of surface and ground water, sediment consolidation, mitigation of soil erosion, stabilization of river banks, reduction of landslides, improvement of infiltration, stimulation of accumulation of water in soil, ground water table increasing and etc. are the necessary measures which shell ensure healthiness of ecosystem.

The following measures shall be undertaken in introduction of environmental component of IWRM:

1) First phase (2008-2010)

   Identification and legal entitlement of role and responsibility on governmental bodies, water economy organizations and other stakeholders in respect of protection and restoration of ecosystem;

   Inclusion of provisions regulating protection, restoration and sustainable use of ecosystem related to water issues in national legislation, agreements on trans-boundary waters and international agreements on nature protection;

   Transfer from term "water body" to more encompassing term "water ecosystem" in water resources management practice

   Assessment of compatibility of available resources of ecosystem with regard to water against needs of society;

   Elaboration and introduction of methodology on determination of economic, social and ecological value of goods and services provided by water ecosystem;

   Introduction of payment-based mechanism for services provided by ecosystem;

   Allocation of water for ecosystem in schemes of complex use and protection of nature/water resources from view point of sustainability, fairness and scientific substantiation;

   Elaboration of methodology for determination of needs and minimum requirements for ecological discharge downstream of river;

2) Second phase (2011-2025)

   improvement of water legislation accounting for principles of ecosystem approach and necessity to protect water ecosystem;

   establishment and development of monitoring system over conditions of water ecosystem and water quality.

Ecosystem approach aligns the IWRM process in a way that water resources management takes more systematic pattern: the protection of catchment areas (restoration of forest tracts, modern technologies of cultivation, prevention of catastrophic phenomena), coordinated control of surface, underground and return waters, pollution control and ecological discharge for downstream ecosystems. Ecosystem limitations ensures an alternative to competition of sub-sectors of economy], creating basis for greatest public interest by beneficiaries under the implementation of coordinated actions and measures. IWRM ensures raising public awareness of water users on demand of

ecosystem and benefits provided by ecosystem and thus allows figuring out the value of ecosystems in the decision-making and planning process.

The following measures shall be undertaken in improvement of water quality management:

1) First phase (2008-2010)

   Coordination and consolidation of efforts of various organizations involved in water quality management, R&D institutions, ecological NGOs and other stakeholders;

   Entitlement of function on water quality management on RBOs (according to Water Code, RBO is responsible for use and protection of water resources);

   Amendments to water and environmental legislation on assignment of function on water quality management and adoption of regulations for enforcement of such functions by RBOs;

   Elaboration of strategies/programmes on improvement of quality of water in water bodies at national and water basin levels;

   Identification of measures aimed at reduction of water pollution;

   Introduction of quality control system in respect of water body's condition, water use regime, protection of water resources and enforcement of land use regulations;

   Adoption of new standards in terms of water quality: maximum permissible harmful impact (MPHI).

In contrast to existing regulations, MPHI demonstrates the assessment of the ecological state of water body taking into account the factors of anthropogenic load; it plays the role of basis for setting the standard of impact caused by economic activity (standard of the introduction of pollutants and the permissible volumes of the withdrawal of the available water resources). For putting MPHI into practice the following measures shall be undertaken:

   Enforcement of Polluter pays principle and Consumer pays principle;

   Promotion of employment of methodology on determination of MPHI adopted by CWR at all levels of water resources management;

   Development of bio-monitoring for assessment of ecosystem conditions with the help of biotic identifications;

   Improvement of observation system in terms of impact on ecosystem;

   Establishment of information centers within the RBO and laboratory on overall water quality analysis;

2) Second phase (2011-2025)

   elaboration and implementation of Basin Management Plan/Programme (BMP) in compatibility with EUWFD including strategies on improvement of water quality in each water basin;

   evaluation of economic efficiency and implementation of measures on sustaining ecosystem services ensuring good quality of water, such as extensive agriculture, pest control, introduction of quota on pollution; restoration of vegetative cover.

5.4. Water-caused Harmful Impact Response and Prevention Plan

In the Republic of Kazakhstan the water-caused harmful impact mainly pertains to flooding and mudflow. There are no systematic data on negative water-caused factor due to other than the above reasons[14]. In Kazakhstan there are about 800 rivers (with length exceeding 50 km), more than 600 reservoirs of various capacity and purposes, no less

[14] Natural Disaster Response Plan of Kazakhstan, UNDP and GOK project, 2000.

than 3,000 big lakes with surface area of 1 and more 1 km^2 which may cause different types of flooding.

All administrative regions (oblast) of the country refer to areas subject to flooding, including 75 rural settlements and over 800 townships with no less than 5 million people. The flooding across the country are caused due to heavy and long-lasting raining, intensive snow melting in plains and mountain glaciers, outbreak of dam or reservoir, upsurge in major water bodies, ice jam and ice gorge etc.

High flooding in one or other river basin takes place almost every year across the country and their scales are varying considerably. Catastrophic flooding with human fatality and significant damage occur in some or even many rivers of Kazakhstan with a return period 1 in 50-100 years.

Areas sensitive to landslide are mountains located in the eastern, southeastern and southern part of the country, covering 360 sq km or equivalent to 13% of the total area of the county. The landslides are mainly caused due to storm water, outbreak of glacier lakes, earthquake etc. There are 300 mudflow basins and about 800 heavy landslides occurred for the last 150 years. In terms of return, the most frequently occurred landslides are those caused by heavy rain and account about 80& of the total landslides, and 15 and 5% account landslides caused due to glacial and earthquake reasons, accordingly.

According to data of MES, within the period 1993-2003 in Kazakhstan there were 85 large-scaled floodings and 15 landslides with 17 fatalities and over 45,000 injured, the direct damage amounted to USD 800 mln .[15].

However, the above data do not fully reflect the potential risk of flooding and landslides in Kazakhstan, because during that time period there were no outstanding catastrophes.

Considering the current conditions in prevention and liquidation of harmful impact caused by water, the following action plan shall be undertaken:

1) First phase (2008-2010):
   Identification of authorized body in charge of prevention and liquidation of harmful impact caused by water;
   Establishment of unifies data base on harmful impact caused by water on economic facilities, environment and population;
   Conduction of study on assessment of risk in terms of harmful impact caused by water, their classification, systematic inventory survey on technogenic water pollutants;
   Improvement of complex and typical monitoring system of harmful impact caused by water;
   Development of methodology for map preparation outlining areas subject to risk of harmful impact caused by water based on GIS and satellite based remote sensing;
   Preparation of catalog of specifically dangerous areas subject to catastrophic phenomenon due to water factor;
   Preparation of response plan;
   Reallocation of economic, social and living facilities from the most dangerous areas subject to impact of harmful impact caused by water;
2) Second phase (2011-2025):

[15] Plekhanov P.A. Regularity of emergencies caused by nature and human activity in Kazakhstan. Hydrometeorology and Environment in Kazakhstan. Almaty, 2004 (#3), 2003

Amendments to legislation in order to strengthen the measures on prevention and response plans in terms of water-caused harmful impact;
Conduction of master plan on protection of regions, economic facilities and settlements against flooding and landslide;
Amendments in water legislation to enforce establishment of special organizations on emergency O&M in cases of harmful impact caused by water, as well as organizations dealing with regular design and construction of protective structures and enabling to conduct preventive repair at structures providing protection against flooding and landslide;
arrangement and conduction of flood control in order to protect settlements, facilities and territory against harmful impact caused by water;
establishment land – remote sensing control monitoring system in order to forecast phenomena of harmful impact caused by water;
provision of safety standards in terms of harmful impact caused by water due to disaster, industrial accident and catastrophe.

5.5. Improvement of Water Efficiency and Water Accounting System

The Government of the RK has committed to improve water efficiency by 2010 through reduction of unproductive losses in irrigated agriculture by 20% and reduction of irretrievable specific consumption of water in industry by 30-40%[16], though no real steps to implement it have been made.

The following actins shall be undertaken to increase water efficiency:

1) First phase (2008-2010)
   Elaboration of action plan aimed at improvement of inter-sectoral coordination with wide involvement of water economy, agricultural and R&D organizations in activity on water saving;
   Elaboration of programme on reduction of losses/water saving in all sectors of economy; it shall require to consider heavily deteriorated conditions of water supply system, irrigation system; financing for rehabilitation and full restoration of these system shall be allocated from the budget of central government;
   Improvement of water use efficiency at the level of water economy system, AWUs, RCCWU through adopting an approach based on "demand control" rather than on applied presently "meet demand";
   Determination of potential productivity of water in all sectors of water use and elaboration of methods on achieving it;
   Increase stability in water delivery in compliance with adopted plans;
   Improvement of water accounting at local level and provision of equitable sharing of water between consumers;
   Establishment of legal framework for water charge (elaboration of economic instrument in water use to recover the cost of maintenance of water facility through the cost paid by water user);
   Introduction of differentiated water charge system for normative consumption and progressively growing water consumption;
   Canal efficiency increase through incentives provided to RCCWU;

[16] Call for Partnership on Implementation of Central Asian Initiative on Sustainable Development; 5th Ministerial Conference "Environment for Europe", Kiev, Ukraine, 21-23 May, 2003

Setting of water tariff for water services based on economic feasibility and incentives provided to water users;

Monitoring of water services providers to identify feasibility of provided services;

Elaboration of training programme including such issues as water use, demand control, pricing mechanism;

Establishment of water use extension service (service providing consultation to various group of water users on rational use of water and related nature resources), represented by group of experts, WM R&DC;

Study and assessment of best applicable practices in irrigation agriculture, land leveling and farm training;

2) Second phase (2011-2025)

Introduction of efficient economic mechanism ensuring reproduction and conservation of water resources potential;

Change subsidizing and financing policy and employment of progressive payment system;

Achieving high water efficiency in all sub-sectors based on economic, technological and organizational methodologies (operational record keeping system on water users and water distribution, introduction information service etc.);

Elaboration of measures aimed at increasing of sustainability of provided by ecosystem services; improvement in regulation of water quantity (discharge, infiltration, retaining and accumulation) may be ensured through forestation, farming resources saving and restoration of meadow plains;

Design and implementation of pilot project on water saving with further dissemination of successful experience;

Development of pilot areas for using them as demonstration site for training farmers to efficient irrigation methods.

The integral part of the water distribution management is the water accounting procedure, which is based on application of technical means. However, the measurement is made with poor accuracy due to worn out of measuring equipment, instruments, old methodology, immature water economy organizational structure etc. The errors made in measurement of parameters of technological process lead to serious problem in water distribution, and consequently, to incorrect measurement of water efficiency factor.

The following measures shall be undertaken in improvement of water accounting at water economy facilities and structures:

1) First phase (2008-2010)

improvement of legal and metrological regulation;

strengthening capacity of National metrological center (NMC), provision with measuring means, establishment of special service at all levels of water management;

arrangement of works on construction of measuring facilities in compliance with standard and metrological regulation; establishment and maintenance of database;

provision of necessary equipment to hydropost, including automation means and procurement of modern flow meter for pumping stations;

provision of control-communication service at each water economy facility or complex of hydraulic structures;

provision of flow metering equipment at all Headworks, diversion structures, outlets, structures on delivery and distribution of water;

establishment of local and centralized water management control service at Headworks and main canals, accordingly;

ensuring routine control over use of water resources through determination of actual efficiency factor and identification of measures aimed at increase of efficiency factor;
attestation, checking and certification of measuring instruments and means installed at flow meters;
establishment of regulating and management system of ground water table and drainage system at water economy systems;
establishment of information and measuring system (IMS) at all levels of water governance, including database and transfer of data and information to master server (top level of water governance).

Measures on improvement of water accounting and water efficiency shall ne taken considering rational balance between economic, organizational-administrative and regulative methods of management.

It is important to draw up a planning system, which shall contain a schedule on provision of hydrological metrological equipment to all water economy facilities. The improvement of water saving and water efficiency shall be based on step-by –step approach considering consensus building procedure. Successful implementation shall depend on the support provided by the GOK as well as on compatibility of local regulation and standards with international legislation in the field of metrology.

Strict legislative acts regulating control and responsibility in the field of hydrological metrology at water economy systems shall be drawn up and adopted.

The following measures shall be undertaken in improvement of water accounting system:

2) Second phase (2011-2025)

follow up of state support set in the first phase;
improvement of regulation and legislation in hydrological metrology at water facilities (considering transition to state language and registration in Gostandart);
elaboration of methodology, regulation, guidelines and etc for enforcement of Water Code, Law on provision of unified approach in measurement, standards in metrology, considering specific features of water economy facilities;
provision of continues process of improvement of norms and standards in metrology;
development of infrastructure in meteorological stations (including technical, staffing and legal basis);
provision of state control over water resources in compliance with water legislation;
public involvement in the process of control and governance of water resources and ensure access to information on actual water abstraction from the water source and water delivered to consumers;
decentralization of authorities in respect of control over water and assignment of controlling function at lower levels of water management hierarchy;
economic mechanism and forms of state control in the field of water accounting and reduction of contaminated discharge.
Payment system for water services shall cover the cost for maintaining water economy facility and measures on water resources protection. “water pays for water” and “polluter pays” are the basic principles of economic relationship. Payment system for provision of ecosystem services can mobilize financial resources at local level through establishing direct relations under the framework “supplier - user”.

Transparency, access to information, public awareness on targets and tasks in the field of protection of water resources, water saving technologies shall promote and support measures on improvement of water efficiency by general public.

Involvement of water users, local communities, NGOs in water resources management and conservation of ecosystem shall be made through their participation in the National Inter-sectoral Water Council, RBC of various levels, Working groups and participation in decision making process in public hearings. Representatives of water users and other stakeholders shall actively participate in planning, control over water use, water sharing on the cost of their own fund and other financing sources. All mass media means, including radio and TV will be engaged in dissemination of information on progress of the Programme implementation and raising public awareness on advantages of IWRM.

5.6. Water and Land Resources Monitoring System

State monitoring of water bodies includes monitoring of surface and ground water bodies and monitoring of water economy systems. The monitoring of water bodies is conducted by monitoring services of a number of ministries and organizations concerned (MA/CWR, MEP, MEMR, MH etc.) without appropriate coordination between them.

The following measures shall be undertaken to improve monitoring system of water bodies/ecosystem:

1) First phase (2008-2010)

consensus building between ministries and organizations concerned in respect of establishment of unified water monitoring system;

elaboration of basin monitoring programme and introduction of targeted monitoring programmes for identification of pollutant sources;

inventory survey of water economy systems and structures;

cross-sectoral elaboration and implementation of programme on monitoring studies on ecosystem services (land use, forestation);

development and re-equipment of state observation network for conditions of surface water and elements of water balance of river catchment area;

arrangement and development of observation network on surface water bodies at water basin level, including establishment of regional monitoring systems;

development of information and telecommunication system in monitoring of water resources;

arrangement and conduction of R&D aimed at improvement of monitoring of surface water bodies;

annum assessment of availability of resources of surface and ground water, their use and quality;

multi-year assessment of surface water resources under current climate conditions at river basin and national levels, accounting probable climate change;

adoption of EU classification of water bodies and methodology on determination of very good, good and average quality of environmental conditions of rivers (EUWFD);

restoration and development of optimal observation network;

re-equipping of existing observation points in terms of conditions of ecosystems and level of their contamination;

establishment of ambient water quality monitoring and promotion of coordination between RBOs and territorial departments of EP;

elaboration of regulations on environmental hazard warning system;

development of bio-testing, environmental toxicology and bio-identification and bio-diagnostic methodology in respect of conditions of ecosystems.

Introduction of methodology on MPHI requires development of monitoring in terms of three components of ecosystem (CWR, 2006):

Harmful (contaminating) substances of anthropogenic nature;

Resources of water basin subject to ecological regulation;

Bio- testing results in respect of hydrobionts of water ecosystem;

2) Second phase (2011-2025)

formation and sustaining the operation of unified monitoring system of water bodies and their ecosystems established within first phase.

The action plan of the Programme contains long-term sub-programme on improvement of monitoring system of surface and ground water bodies, water economy systems and development of land monitoring system.

5.7. Information Exchange and Management, Information Infrastructure in the Field of Use and Protection of Water Bodies

The following measures shall be undertaken as information support of IWRM Programme:

1) First phase (2008-2010)

Establishment of National Water Information Center (MWIC) under CWR;

Establishment of Information Departments at CWR and RBOs;

Identification of information needs under the assistance of RBCs;

Design of Unified Information System (UIS) Concept at national, river basin and territorial levels;

Design GPS for UIS based GIS system;

Assistance to RBOs in collection of primary data at river basin level through provision with all necessary information resources;

Formulation of state specific information on use and protection of water resources/eco-systems (at all levels) by organizations responsible for use and protection of water resources jointly with MEP, MES, ALRM and etc.;

Clarification of the river basin boundaries, design of long-term water balance, inventory survey of hydraulic structures, water economy systems, facilities and data entry to UIS;

Establishment and maintaining of information portal and web site of CWR;

Development of legislation framework for information exchange and management;

Development of rules and agreements regulating procedure for exchange of information between state and cross-sectoral monitoring systems and water management organizations;

Establishment of sustainable information transfer network through telecommunication channels;

Training of staff to modern IT;

Establishment of favorable conditions for dialogue and promotion of public participation in decision making process at all levels of management;

Public awareness within the framework of UN Convention on the right of the public to access to information, to decision making process and access to justice on environmental issues (Law of the RK #92-И dated 23.10.2000);

Involvement of NGOs in discussion of water projects;

2) Second phase (2011-2025)

Implementation of Concept on establishment of UIS;

Information coordination between executive bodies, ministries and organizations concerned on water management issued; Support of the Government in provision of access to all data bases to organizations concerned;

Further development and operation of UIS accounting for varying information needs, IT and software;

Establishment of UIS "Water Basin" based on GIS technologies which shall include data on conditions of water eco-systems and impacting on them factors, as well as data on economic, social, technical, cultural and other processes determining the development of the basin;

Support of R&D Information Center under Ministry of Water Management;

Upgrade of software and computer equipment;

Update of e-library based on data of media, text books, material of conferences and seminars;

Governmental promotion of NGOs, associations and other groups of water users on establishment of information centers, arrangement and conduction of competitions, information campaigns and other means to disseminate knowledge on IWRM.

The "Water Basin" unified information system shall ensure decision makers with instrument in order to help them in development of real, scientifically substantiated governing and legal decisions aimed at environmental sustainability of water basins and improvement of welfare of people and prevention of water-related conflict.

All mass media means including radio and TV shall be employed in dissemination and coverage of information on progress of Programme implementation and advantages of IWRM.

5.8. Education and Training of Staff in the Field of Use and Protection of Water Bodies

In the National Strategy on achieving 50 most competitive countries, the development of education and continuous training of staff and further development of the culture of the people of Kazakhstan was given the forth priority.

The UNDP project while preparing the Programme has determined the priorities for strengthening capacity building of existing organizations and outlined the measures that shall be taken to implement the action plan. The action plan is based on long-tern programme for establishment of potential for development and sustaining the professionalism level of staff including training system.

The following actions shall be undertaken to improve education and training of staff involved in use and protection of water resources:

1) First phase (2008-2010)

Identification of needs in strengthening capacity, drawing up programme on education and training of engineers and water management specialists, civil servants;

Establishment of training centers at CWR and RBO;

Exchange of experience between local and international training centers;

Development of methodology and preparation of educational staff for introduction of environmental education in pre-school, primary, secondary, vocational and higher education systems;

Provision of information support in training of staff engaged in use and protection of water resources (web site, e-library etc.);

Improvement of rules and procedures for awarding educational grant and loan for future specialists in use and protection of water resources;

2) Second phase (2011-2025)
   Improvement of training system of professional staff, introduction of new specialties in the field of use and protection of water resources;
   Development and expansion of training system amongst water economy organizations and WUAs;
   Renewal of state order for specialists in the field of use and protection of water resources, including agrarian specialties;
   Establishment and development of R&D and design organizations in the field of use and protection f water resources to provide appropriate services to water management bodies.

5.9. International Cooperation and Improvement of Trans-boundary Water Management

The problem of sharing water in trans-boundary basins makes Kazakhstan to extend cooperation with neighboring countries in order synchronously move to integrated water resources management within the whole trans-boundary basin. In compliance with the agreements signed by Kazakhstan bilateral commissions and working groups for solving issues on use and protection of water resources have been established in all trans-boundary river basins, however no mechanisms are adopted to fulfill international commitments of Kazakhstan.

The following measures shall be undertaken to strengthen international cooperation and improve trans-boundary water management:

1) First phase (2008-2010)
   Development of procedures and methodologies on preparation of unified international river basin management plan, counting international commitments of parties involved;
   Integration of international commitments in water resources management plans at national, river basin and local levels;
   Improvement of mechanisms on solving international dispute and damage indemnity;
   Introduction of resources exchange on multi-year basis;
   Promotion of measures on combating pollution based on “polluter pays principle” applicable to all types of pollutants;
   Development of training and education programme for managers at regional level;
2) Second phase (2011-2025)
   conduction of measures aimed at compatibility of local water legislation with that of international one;
   development of compatible national and international legal documents necessary for conservation of quality of water resources;
   introduction of payment-based system for provision of eco0system services in trans-boundary river basins;
   introduction of mechanisms ensuring fulfillment and enforcement of liabilities of the parties involved;
   establishment of regional net on exchange of information in terms of national data base on water resources and decision making on mitigation of consequences caused due to flooding and pollution of eco-system.

The solving of ecological and water issues of trans-boundary water based on IWRM principles shall enable to perform Kazakhstani international commitments in respect of 22 international environmental conventions and agreements, including Convention on protection and use of trans-boundary water channels and international lakes, Convention on biodiversity, Convention on access to information, public participation in decision making process and access to justice in terms of environmental issues, Convention on environment impact assessment in trans-boundary context and etc

6. Required Resources and Financing Sources

The implementation of the Programme shall be financed from the budget of central and local governments, fund of legal entities, fund of nature users, grant assistance from international financial institutions and donor-countries and other sources not prohibited by the legislation of the Republic of Kazakhstan.

It is proposed that the central government shall allocate the amount totaling to KZT 26,850.60 mln with the following installments*:

KZT	7,770.60	mln	-	2008
KZT	10,420.60	mln	-	2009
KZT	8,659.40	mln	-	2010

*Note: the installments shall be clarified at the time of formulation the budget for upcoming fiscal year.

The further financing shall be determined upon preparation of the action plan for appropriate phase of Programme implementation.

7. Expected Outcomes

The following shall be outcomes achieved through implementation of the Programme:

In the field of improvement of water resources management system:

1) First phase (2008-2010):

Foundation to transfer to IWRM has been established, capacity building of authorized bodies and partnership organizations in the field of use and protection of water resources has been strengthened;

Establishment and employment of institutional mechanism in terms of coordination and integration has been ensured;

Legal basis for formation of targeted financing of water economy and water protection measures has been created;

The planning system of water management and annual reporting system have been improved; Basin IWRM plan in each of 8 river basins has been drawn up their implementation has been ensured;

The background for implementation of action plan on improvement of water quality has been established;

Centers on water quality control have been established in RBOs;

Programmes/strategies on improvement of water/ecosystem quality have been drawn up at national and river basin levels;

Methodology for quality standard of surface water has been introduced based on the maximum permissible harmful impact (MPHI);

Conditions mitigating harmful impact caused by water have been ensured;

Development of water and land resources monitoring system has been ensured;

Basis for information infrastructure of water sector has been established;

Comprehensive monitoring system over harmful impact caused by water has been improved;

Risk assessment methods in respect of harmful impact caused by water have been designed based on GIS and remote sensing of earth surface;

Catalog of most dangerous areas subject to water-related disaster has been issued;

response plans have been developed in respect of nature or man-caused emergencies caused due to harmful impact of water;
works on raising public awareness and involvement of civil community in decision making on water related issues have been conducted;
programmes on education and training of staff in use and protection of water resources have been drawn up and implemented; training centers have been established under CWR and RBOs;
support on introduction of IWRM in river basin of trans-boundary water by respective governments has been achieved;

2) Second phase (2011-2025):
Water management system has been formulated based on IWRM principles;
Financing sources for targeted water management, water protective and water conservation actions have been identified;
Inter-sectoral coordination of water economy planning at inter-state, national, regional, river basin levels of governance has been ensured;
Basin Agreements in all river basins have been prepared and enforced;
Water resources management plans counting EU legislation, as well as improvement of water efficiency and protection on harmful impact caused by water have been developed and implemented;
Legislation basis of water sector has been harmonized with that of European Union;
Transfer to water quality management based on MPHI has been accomplished in all river basins;
Payment system for eco-system services has been introduced in pilot/model river basins;
Master plans on protection of settlements and facilities against flooding and landslides have been designed;
Special emergency rescue and hydro-construction organizations have been established in order to provide works on restoration/rehabilitation in emergency caused by water, as well as for design, construction and prevention of facilities against flooding and landslides;
Safety of settlements, facilities and areas against harmful impact caused by water due to disaster, industrial accident and catastrophe has been ensured;
Sustainable operation of Unified information infrastructure of water sector has been ensured and access to water information to all stakeholders has been enabled;
Education and training of staff in use and protection of water resources have been ensured;
Efficient basin management has been achieved promoting meeting guaranteed demand of people, economy and ecosystem in water – contributing: achievement of strategic goal of being one of the fifty competitive countries; Concept on transfer to sustainable development 2007-2024, Strategy on industrial and innovative development 2003-2015, implementation of three key tasks of National Development Strategy 2030: efficient (integrated) use of resources, fare sharing of limited resources and provision of environmental sustainability;
Environmental stability and "good" conditions in water bodies have been ensured by 2025 – quality of water in sources of portable water has been improved – promoting (i) achievement of objectives set the national Programme "Drinking Water"; (ii) half reduced share of people do not having access to safe water by 2015 (Goal 7, task 10

MDGs) – damage decrease due to consumption of poor quality of drinking water (morbidity reduced, life expectancy increased across the country);

Equality and mutually beneficial use of trans-boundary water has been achieved;

Water ecosystem degradation process has been sustained and prevented – damage caused to ecosystem has been reduced, conditions supporting their sustainable functioning and provision of services and resources have been created.

In the field of water efficiency increase:

1) First phase (2008-2010):

Establishment of water users associations and extension service on water saving have been continued at local level;

Effective financial and economic mechanisms ensuring reproduction and conservation of water resources potential have been designed and introduced;

Action plan on improvement of monitoring system over use of water bodies, water economy structures including protection against harmful impact caused by water has been drawn up at local level;

Legislation in terms of water counting and provision of operation of water measurement system has been improved, organizational structure of the national measurement service has been strengthened and branch centers on staff training on hydro measurement have been established;

Works on rehabilitation of existing and new construction of water counting stations equipped with modern automotive measuring instruments and tools have been arranged;

Works on re-equipment of water economy system have been arranged based on employment of advanced means for measurement and automation;

Conditions on transfer from supply to demand governance of water have been established (education, public awareness on water saving);

Measures on achieving goals and set indicators on implementation of Central –Asian Initiative on sustainable development presented at the 5th European Conference of Ministers "Environment for Europe" have been taken;

2) Second phase: (2011-2025):

Net of water users associations has been formulated and operation of WUAs has been ensured at local level – efficiency in water use has been improved;

Economic incentives and technological innovations for demand management have been introduced – water losses have been reduced in all sectors of economy;

Implementation of commitments of Kazakhstan taken in Central- Asian Initiative on sustainable development has been ensured;

Monitoring system on water bodies, water economy system and structures has been improved at local level; reliable protection against harmful impact caused by water has been provided at local level;

Control system over enforcement of legislation in the field of measurement of water in water facilities has been improved;

Development of metrological infrastructure for hydraulic measurement has been ensured; special metrological services properly equipped and strengthened with organizational resources have been established in water management organizations;

Restoration of existing and construction of new additional water counting stations equipped with modern measuring instruments and automation tools have been provided;

Re-equipment of water economy systems and facilities has been accomplished based on advanced means of automation and measurement;

Decisions of ICWC, in particular, in respect of programme of Coordinative Metrological Center (CMC) on provision of equipment for operation of hydro-metrology service at inter-state water management systems have been implemented;

Pilot projects on water and land resources use efficiency have been designed and implemented;

Public awareness on water saving and protection of water resources has been established.

Implementation of the Programme shall ensure that Kazakhstan will get more recovery on investments made in water sector and that benefits shall maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital eco-system.

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
1. Strengthening institutional structure, capacity building and partnership development						
1.	Development of water supply strategy of the Republic of Kazakhstan for long term perspective	Strategy approved by Presidential Decree	CWR and other stakeholders	2008 2009 2010	Not required	Central government budget
2.	Improvement of legal acts of water resource regulation for IWRM transition	Projects of legal acts, amendments	CWR and other stakeholders	2008 2009 2010 Further on, if any	Not required	Central government budget
3.	Establishment of National Inter-sectoral Water Management Council as single coordinate body governed by Prime Minister	Government Decree	MA, CWR, ALRM, MEBP, MEP, MEMR, MH	2008-2009	Not required	
4.	Submit draft Presidential Decree on increasing the authority of CWR and RBOs for Government consideration	Draft of Presidential Decree	MA, CWR	2008-2009	Not required	
5.	Assign Chairman of authorized body for use and protection of water resources into CSD in Kazakhstan	Government Decree	MA, CWR and other organisations involved in SDC membership	2008	Not required	
6.	Increase staffing in authorized body for use and protection of water resources up to 70 persons	Staffing	MA, CWR	2008 – 2009	Not required	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
7.	Capacity building of ministries and organizations involved in use and protection of water resources (improvement of institutional structure, training, provision of equipment and material etc.)	Report to the Government. Annual budget programme	MH, ALRM, MA, MEP, MEBP, MEMR, MES, local executive bodies, etc.	2008-2009 On regular basis	Annual budget programmes	Central government budget
8.	Increase staffing in RBO up to 246 persons (eight RBOs). Further identification of needs for improvements in organizational structure in RBO	Approved staffing	MA, CWR, RBO	2008 – 2010 On regular basis	500.00 Annual budget programmes	Central government budget
9.	Provision of RBO (eight RBO) with equipment, material, methodology, financial and other resources necessary for efficient implementation of task at river basin level, and RBC day-to-day activity	Report to the Government	CWR, RBO	On regular basis	Annual budget programme	Central government budget
10.	Identification of needs in training of RBC' specialists (eight RBO). Organization of required courses	Approved plan for activities	CWR, RBO	On regular basis	Annual budget programme	Central government budget
11.	Support of established RBC' activity in eight water basins (current costs of RBC)	Draft Regulation on RBC, approved by the Government Decree	CWR, RBO, RBC	2008 2009-2013 Further on, if any	16.00 100.00	Central government budget
12.	Assess legal base of RBC activities, self funding, chairmanship and extension of authorities	Report to the Government, Draft amendments to legislation	CWR, RBO, RBC	2008 2009 2010 2011 Further on, if any	12,00 10,00 8,00 6,00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
13.	Establishment of project on identification of optimal option on participation of all water users in RBC (representative of rural and urban communities, recreation sector, irrigation farming etc.)	Report to the Government	CWR, RBO, RBC	2008 2009 2010 Further on, if any	20,00 20,00 10,00	Central government budget
14.	Develop draft basin agreement on restoration and protection of water bodies	Government Decree	CWR, RBO, RBC	2008 2009	2,00 2,00	Central government budget
15.	Elaboration of regulation on conclusion of basin agreements	Government Decree	CWR, RBO, RBC	2008	1,50	Central government budget
16.	Arrangements on development and conclusion of Basin agreements in all river basins in Kazakhstan	Report to the Government	CWR, RBO, RBC	2008 - 2010 Further on regular basis	12,00 - annum (8 RBOs)	Central government budget
2. IWRM environmental component and water quality management						
17.	Transition to new standards of water quality, including MPHI	Report to the Government	CWR, MEP, MH, ALRM, MEMR	2008 2009 2010	15.00 5.00 5.00	Central government budget
18.	Determine responsibility and role of water use management bodies with further empowerment, water use organizations and other organizations involved in protection and reproduction of water ecosystems	Draft of legal acts Report to the Government	CWR, RBO, MEP, MH, ALRM, MEMR, MES, local executive bodies, etc.	2008 2009 2010	7.00 5.00 3.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
19.	Development of analytical report and arrangement of work on adaptation of European Union normative and standards, *inter alia* Water Framework Directive of EU # 2000/60/EU	Report to the Government	CWR, MEP, MH, ALRM, MEMR, MES, CAREC, etc.	2008 2009 2010	10.00 10.00 10.00	Central government budget Foreign grants, credits
20.	Development of River basin management plan for each river basin (BMP) with accordance Water Framework Directive of EU # 2000/60/EC (Eight BMP)	BMP approved by Government Decree	CWR, RBO, RBC, MEP, MH, ALRM, MEMR, MES, CAREC and others .	2010 2011-2015	400.00 2400.00	Republican budget Foreign grants, credits
21.	Implementation of some provisions set in scheme of complex use and protection of water resources (SCUPWR)	Action plan on implementation of SCUPWR	CWR, RBO, MEP, MH, MES, MEMR, ALRM, local executive bodies, etc.	2008-2010 2011-2020	Determined at the time of formulation of annual budget programmes in accordance with SCUPWR	Central government budget Local government budget Funds of entities Foreign grants, credits
22.	Entitlement of function on water quality management on RBOs; Amendments to water and environmental legislation	Draft amendments to legislation	CWR, RBO, MEP, MH, MEMR, ALRM, etc.	2008 2009	6.00 3.00	Central government budget
23.	Establishment of information centers within the RBO and laboratory on overall water quality analysis	Report to the Government	CWR, RBO, MEP, Kazhydromet	2009 2010 further provision of adequate fund for operation of WQC on regular basis	800.00 800.00 Annual budget programmes	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
24.	Arrangement of study and works on elaboration and implementation of plan/programmes on improvement of quality of water in water bodies at national and water basin levels (all basins in Kazakhstan)	Programmes approved by Government Decree	CWR, RBO, RBC, MH, MEP, CGSU, ALRM, MES, CAREC, etc.	2009 2010 2011-2013 Insure programme implementation	100.00 100.00 300.00 Annual budget programme	Central government budget Foreign grants, loans
25.	Inclusion of provisions regulating protection, restoration and sustainable use of ecosystem related to water issues in national legislation, agreements on trans-boundary waters and international agreements on nature protection	Amendments to legislation, Government Decrees	CWR, MEP, MEMR, MH, MES, ALRM, MEA	2008 2009 2010 Further on, if any	10.00 15.00 15.00 Annual budget programmes	Central government budget
26.	Conduction of study and elaboration of methodology on assessment of damage caused to water body by pollution, including that of due to accident	Methodology on assessment of damage caused to water body by pollution	MEP, Kazhydromet, CWR, MES .	2008 2009 2010	10.00 10.00 10.00	Central government budget
27.	Elaboration of methodology for determination of needs and minimum requirements for ecological discharge downstream of river in all river basins	Government Decree	CWR, RBO	2008 2009 2010 Constantly	20.00 10.00 8.00 Annual budget programme	Central government budget
28.	Elaboration of Programme on optimal management of small rivers	Programme and Action plan approved by GOK's Decree	CWR, RBO, RBC, MEP, ALRM, local executive bodies, etc.	2008 2009 2010	30.00 25.00 25.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
29.	Elaboration of zoning – regional regulation on conditions of small rivers and permissible anthropogenic load, including catchment area	Methodology of permissible anthropogenic load, including catchment area	MEP, Kazhydromet, CWR, RBO, RBC, ALRM, CARE, etc.	2008 2009 2010	10.00 10.00 10.00	Central government budget
30.	Design of projects on establishment of water protective zones and strips and regime of economic activity for each water body;	Approved design of water protective zones and strips	CWR, ALRM, MEP, MES, MH, RBO, TDEP, local executive bodies	2008 2009 2010 Further on constantly basis	10.00 8.00 8.00 Shall be determined while setting local budget	Central government budget
3. Water-caused Harmful Impact Response and Prevention Plan						
31.	Identification of authorized body in charge of prevention and liquidation of harmful impact caused by water	Government Decree	MES, CWR	2008	Not required	
32.	Establishment of unifies data base on harmful impact caused by water	Data base	MES, CWR, ME&S, MEP, local executive bodies	2008 2009 2010	10.00 10.00 10.00	Central government budget
33.	Systematic inventory record keeping on sources of man-caused pollution of water	Inventory list	MEP, MES, CWR	2008 2009 2010	10.00 10.00 10.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
34.	Preparation of emergency response plan due to harmful impact caused by water	Emergency response plans	MES, CWR, RBO, local executive bodies	2008-2009 based on annum update	Shall be determined while setting local budget	Central government budget Local government budget
35.	Development of methodology for map preparation outlining areas subject to risk of harmful impact caused by water based on GIS and satellite based remote sensing; Preparation of catalog of specifically dangerous areas subject to catastrophic phenomenon due to water factor	Assessment methodology, Catalog	ME&S, MES, CWR, MEP, local executive bodies	2008 2009 2010	100.00 100.00 100.00	Central government budget Local government budget
36.	Conduction of master plan on protection of regions, economic facilities and settlements against flooding and landslide	Design	MES, ME&S, CWR, local executive bodies	2009-2012	800.00	Central government budget
37.	Establishment of special organizations on emergency O&M in cases of harmful impact caused by water, as well as organizations dealing with regular design and construction of protective structures and enabling to conduct preventive repair at structures providing protection against flooding and landslide	Flooding and landslide protection department, including 8 branches within regional dpt of MES	MES, CWR, RBO, RBC	2011-2015	8,500,000.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
38.	Arrangement and conduction of flood control in order to protect settlements, facilities and territory against harmful impact caused by water	Project implementation	local executive bodies, MES, CWR, MEP	2008-2024	In compliance with approved cost estimate	Central government budget Local government budget
3. Water efficiency						
39.	Elaboration of state programme on water efficiency, rehabilitation of urban and rural water supply system, including irrigation	State programme	CWR, RBO, RBC, canals, vodkhoz, local executive bodies	2008 2009 2010	45.00 30.00 15.00	Central government budget
40.	Elaboration and introduction of economic mechanism on water use and protection of water resources; Elaboration of methodology for setting water tariff to recover the cost on protection and reproduction of water bodies ensuring economic incentive for rational water use based on the principles: “water pays for water” and “polluter pays principle”	Government Decree; Amendments in legislation;	CWR, ARNM, MEP, RBO, RBC, canals, vodkhoz, local executive bodies	2008 2009 2010 – 2013	28.00 20.00 15.00	Central government budget
41.	Analysis of water tariff policy reform implemented in all water sub-sectors, including 1) recommendation and action plan for reformation of water tariff policy (amendments to legislation); 2) methodology on tariff setting	Report to the Government; recommendation and action plan for reformation of water tariff policy approved by GOK’s Decree	CWR, ARNM, RBO, RBC and other stakeholders, including local executive bodies	2008 2009 2010 Further on, if any	25.00 20.00 20.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
42.	Study and design of minimum water consumption rate considering total number of population in settlement, availability of surface or ground water sources, remoteness from group pipeline etc	Report to the Government Legal acts, approved by the Government	CWR, MH, RBO, SGC, Committee for rural area development of MA, etc.	2008 2009 2010	25.0 15.0 15.0	Central government budget
43.	Allocation of all settlements across the country based on water basin principle	Report to the Government	CWR, MH, RBO, SGC, Committee for development of rural area, MA RK	2008 2009 2010	15.0 20.0 20.0	Central government budget
44.	Analysis on types of water supply system in rural settlements at basin level	Report to the Government	CWR, MH, RBO, SGC, Committee for development of rural area, MA RK	2008 2009 2010	15.0 15.0 20.0	Central government budget
45.	Study and amendments to national, sectoral, regional programmes accounting for state minimum water consumption rate	Report to the Government Draft of legal acts	CWR, MH, RBO, SGC, Committee for development of rural area, MA RK, etc.	2008 2009 2010	10.0 8.0 8.0	Central government budget
46.	Development of measures and incentives for promotion of treatment facilities, introduction of water saving technologies amongst water users	Report to the Government Draft of legal acts	CWR, ARNM, MI&T, MEP, MEMR, RBO, RBC, local executive bodies	2008 2009 2010 Further on, if any	15.00 10.00 15.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
47.	Determination of potential productivity of water in all sectors of water use and elaboration of methods on achieving it	Methodology for determining specific water consumption rates	CWR, RBO, RBC, ALRM	2008 2009 2010	15.00 10.00 10.00	Central government budget Funds of entities
48.	Ensure operational regime of hydraulic structures and reservoirs considering interests of all water users	Report to the Government	CWR, MES, RBO, RBC, MOTC, etc.	Constantly	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
49.	Ensuring regime of minimum daily discharge during navigation in order to comply with interests of water users:: 430 m^3 / s - Buhtarma HPS 550 m^3/s - Ust-Kamenogosk HPS 750 m^3/s - Shulbinskaya HPS	Report to the Government	CWR, RBO, RBC, MOTC, etc.	Constantly	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
50.	Ensuring water accounting at water user level and provision of measuring equipment and means	Report to the CWR	local executive bodies	Constantly		Funds of entities
51.	Establishment of data transfer system to central server of CWR and regional server at RBOs in terms of intake and discharge	Report to the Government	CWR, RBO, vodhoz, MEP, local executive bodies	2009 2010 Further continuous provision of fund for O&M of server transfer system	50.00 20.00 Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
52.	Inventory survey of water accounting points in respect of water economy facilities owned by: 1) state 2) state municipality 3) water user (WUAs, RCCWUs)	Data base e-version	CWR, RBO, SOE, Vodhoz, Oblast Akimat, WUA, RCCWU	2008 2009 2010 Further on, if any	30.00 15.00 15.00	Central government budget Oblast budget Funds of entities
53.	Rehabilitation and new construction of additional water accounting points equipped with modern instruments and means at water economy facilities owned by: 1) state 2) state municipality 3) water user (WUAs, RCCWUs)	certificate on putting into operation of observation stations	CWR, RBO, SOE, Oblast Akimat, ОКГП, WUA, RCCWU	2008-2010 Further on, if any	Annual budget programme	Central government budget Oblast budget Funds of entities
54.	Renewal and establishment of metrological service (MS) under CWR, state-owned enterprises “Vodhoz” and their branches and provision them with necessary resources, including advanced measuring equipment	Metrological services under CWR and state-owned enterprises “Vodhoz” and their branches	CWR, RBO, SOE, Vodhoz	2008 2009 2010 Further provision of fund for O&M of MC	20.0 20.0 20.0 Annual budget programme	Central government budget
55.	Renewal and establishment of metrological service (MS) regional state-owned enterprises “Vodhoz” and their branches and provision them with necessary resources, including advanced measuring equipment	Metrological services under state-owned regional enterprises “Vodhoz” and their branches	Oblast Akimat, Oblast SOE, Vodhoz	2008 2009 2010 Further provision of fund for O&M of MC	10.0 10.0 10.0 Annual budget programme	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
56.	Renewal education and training system for hydrometrological specialist, arrangements of training courses, seminars etc	Training	CWR, GOST, SOE Vodhoz, Oblast SOE Vodhoz, Oblast Akimat	2008 2009 2010 Further on regularly basis	5.00 5.00 5.00 5.00 annually Annual budget programme	Central government budget
57.	Improvement of organiszational structure and provision of resources to head office of metrological service Suavtomatika, including its branches in oblasts	Approved organizational structure of state-owned enterprise Suavtomatika	CWR	2008 2009 2010 Further provision of fund for O&M of Suavtomatika Center and its branches in oblasts	15.00 15.00 15.00 Annual budget programme	Central government budget
58.	Provision of head office of metrological service CWR MA with standard measuring means for checking and certification of measuring instruments	Equipment for attestation and certification and inclusion measuring instruments to national standard measurement registry	CWR	2008 2009 2010	15.0 10.0 10.0	Central government budget
59.	Provision of resources to national metrological centers of Central Asian countries “Suavtomatika”	transportation: NIva -1 ps. Gazel-pickup - 1 ps; PC and printer, copy machine, scanner	CWR, MA	2008 2009 Further on, if any	10.00 10.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
60.	Improvement of regulation and legislation in hydrological metrology at warter facilities and complexes; development, of normative documentation and standards, their certification and inclusion to national registry State Measurement System	Adopted norms and standards	CWR, Gosstandart, SOE Syavtomatika	2008-2010	Annual budget programme	Central government budget
61.	Field survey on calibration of major Headworks, dams and other structures	Sampling data	CWR, SOE Vodhoz, Oblast SOE Vodhoz	2008-2010 Further on, if any	Annual budget programme	Central and oblast government budget
62.	Systematic evaluation of water use efficiency at main canal; determination of water efficiency factor in respect of water economy facilities	Systematic evaluation of water use efficiency at main canal	CWR, SOE Vodhoz, Oblast Akimat, Oblast SOE Vodhoz	2008 – 2010 Further on regularly basis	Annual budget programmes	Central government budget Oblast budget
63.	Attestation and checking of water accounting points and measuring equipment employed in water economy systems and complexes during their operation	Water accounting points and measuring equipment employed in water economy systems checked and certified	CWR, SOE Vodhoz, Oblast Akimat, Oblast SOE Vodhoz	2008 – 2010 Further on regularly basis	Annual budget programmes	Central government budget
64.	Elaboration of programme Разработкаон water accounting and water efficiency	Programme, approved by the Government	CWR, SOE Vodhoz,	2008 2009 2010	10.0 10.0 6.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
65.	Elaboration of programme on water accounting and water efficiency at oblast level	Programme, approved by the Oblast Maslihat	Oblast Akimat, Oblast SOE Vodhoz	2009 2010 2011	8.00 8.00 5.00	Oblast budget
66.	Elaboration of programme on re-equipment of state-owned Headworks, dams, reservoirs	Programme, approved by the Government	CWR, SOE Vodhoz	2009-2011	45.00	Central government budget
67.	Elaboration of programme on re-equipment of state-owned Headworks, dams, reservoirs at oblast level .	Programme, approved by the Oblast Maslihat	Oblast Akimat, Oblast SOE Vodhoz	2009-2011	20.00	Oblast budget
68.	Elaboration of programme on import-substitution in respect of R&D on manufacturing measuring means and local automation system	Programme, approved by the Government	CWR, MA	2009 -2010	10.00	Central government budget
69.	Establishment of R&D institute on automatic and complex water accounting under South-West R&D agricultural center, Dpt. Of science, MA RK	GOK"s decree on establishment R&D institution	MA, CWR	2009 Further provision of fund for operation of R&D institution	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
70.	Harmonization of legislation and regulation on metrology of Central Asian countries; implementation of resolution of ICWC regarding implementation of Programme of coordination metrological center, a branch of national metrological center under CWR	Report Legal acts	MA, CWR, Gosstandart	2008 On regularly basis	Annual budget programme	Central government budget
71.	Regulation on state supervision on metrological issues conducted by water economy organizations providing services on water delivery and water users (WUA)	Approved regulations, annual budget programme, Programme, approved by CWR	CWR, MA, Gosstandart	2008 2009	5.00 5.00	Central government budget
72.	Systematic state supervision over metrological control on enforcement legislation by water economy organizations providing services on water delivery and WU	Report to the Government	CWR, RBO, SOE Vodhoz, etc.	On regularly basis	Annual budget programme	
73.	Promotion of water users (WUA, RCCWU) in all sub-sectors of economy, establishment of water efficiency extension service providing consultation and support to water users	Report to the Government	MA, CWR, RBO, RBC, local executive bodies	Constantly	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget Foreign grants, loans

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
74.	Regulation on registration of water users associations and hydro-amelioration condominiums	Government Decree	MA, CWR, RBO, RBC, local executive bodies	2008 -2009	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
75.	Promotion of establishment of WUA and RCCWU and tax redemption	Government Decree	CWR, ARNM	2008-2009	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
76.	Amendment to Tax legislation on imposing property tax in respect of canal and hydraulic structure at zero tax rate	Government Decree	CWR, ARNM	2008-2009	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
77.	Amendment to Decree of the President “On privatization” in respect of granting water economy facilities for gratis use (Water Code, art,27,29)	Draft of legal act	CWR	2008 –2009	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
78.	Inventory survey of water economy structures (hydraulic structures, canal, collector, well, reservoir etc)	Report to the Government	CWR, RBO, RBC, local executive bodies	2008 2009 2010 Further on, if any	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
79.	Maintaining operation of consultation services established under EuropeAid project SCADWUC (2007)	Report to the Government	CWR, RBO, RBC, local executive bodies	2008 Further on regularly basis	19.50 33.00 - annum	Central government budget
80.	Assessment of advanced technologies in irrigated agriculture, leveling, farmer training	Report to the Government	CWR, RBO, RBC, local executive bodies	2008 2009 2010 2011-2015	200.00 250.00 200.00 500.00	Central government budget Foreign grants, loans
81.	Rehabilitation of irrigation infrastructure	Report to the Government	MA, CWR, RBO, RBC, Vodhoz, local executive bodies	2008 2009 2010	250.00 125.00 125.00	Central government budget Foreign grants, loans
82.	Renewal and development of irrigated agriculture in the RK; Ameliorative measures covering 2,700 thousand ha	Report to the Government	MA, Kaznii	2008 2009 2010 2011-2013 2013 - 2015 2016-2018 2019-2020	182000.00 200000.00 910000.00 176000.00 293000.00 165000.00 271000.00	Central government budget Foreign grants, loans
83.	Educational and training programme on preparation of specialist in water use, demand control, pricing police application etc	Training	CWR	2008-2010 Constantly	38.00	Central government budget Foreign grants, loans

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
84.	Public awareness and access to information on targets and tasks aimed at conservation of water ecosystem, water saving and raising efficiency factor of water use	Public awareness	CWR, Mass Media, Vodokanal, Vodhoz	2008-2010 Constantly	28.00	Central government budget
5. development of monitoring system for water bodies and land resources						
5.1. Development of state monitoring system of surface water bodies: quality and quantity						
85.	Elaboration of legislation act on monitoring of surface water	Government Decree	MEP, CWR,	2008 2009 2010 Further on, if any	10.00 12.00 12.00	Central government budget
86.	Elaboration of norms determining conditions of water bodies, anthropogenic impact on surface water and norms of ecological safety of water bodies	Government Decree Orders approved by appropriate institution	MEP, CWR, MA, MH, MEMR, MES	2008 2009 2010	12.00 10.00 10.00	Central government budget
87.	Elaboration and improvement of regulation, rules on procedure for conduction of monitoring and methodology on performing measurements	Government Decree. Orders, instructions, decree approved by appropriate institution	MEP, CWR, Kazhydromet, RBO, MH, MEMR, MES, MA, Gosstandart	2008 2009 2010 2011 Further on, if any	10.00 10.00 12.00 12.00	Central government budget
88.	Elaboration of programme on optimization of state network of hydrological observations	Optimization programme of hydro posts	MEP (Kazhydromet), CWR, RBO	2008 2008 2009	3.00 3.00 4.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
89.	Conduction of optimization of state network of hydro observation	Report to the Government. Optimization programme of hydro posts	MEP (Kazhydromet), CWR, RBO	2010 2011 - 2015	60.00 300.00	Central government budget
90.	Conduction of hydrological monitoring	Report to the Government. Collection of data and issue of forecast bulletin	MEP (Kazhydromet),	2008 2009 2010 2011 Further on, if any	1300.00 1440.00 1580.00 1700.00 (Annual budget programme)	Central government budget
91.	Routine repair on existing hydrometeo-stations and posts	Report to the Government. Certificate on routine repair	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	30.00 33.00 36.00 40.0	Central government budget
92.	Establishment of new observation points in compliance with WMO 2008 - 2 Meteo-stations (MS) and 10 hydroposts (HP); 2009 -. 2 MSи 10 HP 2010 -. 2 MS и 10 HP; 2011 -. 2 MS и 10 HP	Report to the Government. Certificates on putting into operation of observation stations	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	125.00 140.00 150.00 170.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
93.	Shifting observation points in order to get representative observations: 2008 -2 MS, 3 HP 2009 - 2 MS, 3 HP 2010 - 2 MS, 3 HP 2011 – 2 MS, 3 HP	Report to the Government. Certificates on relocation (putting into operation) observation stations	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	33.20 36.50 40.20 44.20	Central government budget
94.	Procurement and installation of automotive meteorological stations with ensuring working place for technician 2008-20 MS 2009-20 MS 2010-20 MS 2011-20 MS	Report to the Government. Automatic meteo-station: certificate on putting into operation	MEP (Kazhydromet),	2008 2009 2010 2011	91.30 100.00 110.00 121.00	Central government budget
95.	Procurement and installation of sets of evaporation meter ГГИ-3000: 2008 - 5 г/п	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet)	2008	1.24	Central government budget
96.	Procurement and installation of velocity flow meter for HP 2008 – 40 HP 2009 – 40 HP 2010 – 40 HP 2011 – 40 HP	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	12.50 13.80 15.20 16.70	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
97.	Procurement of hydrological registration sets (HRS): 2008 – 2 HRS 2009- 2 HRS 2010 – 2 HRS 2011 - 2 HRS	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	1.70 1.90 2.10 2.30	Central government budget
98.	Procurement of radar water stage recorder 2008-10 sets 2009-10 sets 2010 -10 set sets 2011 – 10 sets.	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	3.30 3.60 3.90 4.40	Central government budget
99.	Procurement of automotive ultrasound flow meter 2008- 20 sets 2009-20 sets. 2010-20 sets. 2011-20 sets.	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	92.00 101.00 111.00 122.00	Central government budget
100.	Procurement of calibrating chute	Equipment for calibration meter measuring velocity of flow	MEP (Kazhydromet)	2008	7.00	Central government budget
101.	Procurement of equipment for certification and checking measuring instrument	Report to GOK; Equipment	MEP (Kazhydromet)	2008	3.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
102.	Procurement of special boat with laboratory equipment to conduct hydro-metrological and hydro-chemical works: 2008 - Buhtarma reservoir 2009 – KApshagai reservoir 2009 - Balkhash lake; 2010 - Alakol set of lakes	Report to GOK; River boat for hydro-metrological works at water bodies	MEP (Kazhydromet)	2008 2009 2009 2010	120.00 130.00 130.00 200.00	Central government budget
103.	Provision of hydro posts with boat and boat engine 2008 –10 boat + 10 boat engine 2009 -10 boat + 10 boat engine 2010 -10 boat + 10 boat engine 2011 -10 boat + 10 boat engine	Report to GOK; River boat for hydro-metrological works at rivers	MEP (Kazhydromet)	2008 2009 2010 2011	19.10 20.90 23.10 25.40	Central government budget
104.	Provision of modern equipment and instrument to network labs and mobile labs for monitoring of surface water	Report to the Government. Resources for conduction of observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011-2013	150.00 150.00 150.00 450.00	Central government budget
105.	Renewal of hydro-biological observation at surface water bodies; development of bio-identification and bio-diagnosis in respect of conditions of water ecosystem; ecological toxicology and bio-testing	Report to the Government. Hydro-biological observation	MEP (Kazhydromet), CWR, RBO	2008 2009 2010	15.00 45.00 45.00	Central government budget
106.	Inventory survey on sources of anthropogenic impact on surface water bodies at water economy system level	Report to GOK; cadastre of pollutants	MEP (Kazhydromet), CWR, RBO	2008 2009 2010	10.00 10.00 12.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
107.	Elaboration of programme for conduction of monitoring over anthropogenic impact on surface water bodies	Report to the Government. Programme approved by appropriate institution	MEP (Kazhydromet), CWR, RBO, MH, MES	2008 2009	4.50 4.00	Central government budget
108.	Arrangement of special observation network for conduction of monitoring over anthropogenic impact on surface water bodies	Report to GOK; results of observations	MEP (Kazhydromet), CWR, RBO	2010-2015 15-20 observation stations annum	450.00	Central government budget Funds of water users
109.	Re-equipment of observation network for monitoring over anthropogenic impact on surface water	Report to GOK; results of observations	MEP (Kazhydromet), CWR, RBO	2010-2015 15-20 observation stations annum; 2 sets of equipment for mobile lab	650.00	Central government budget, local government budget Funds of water users
110.	Conduction of monitoring over anthropogenic impact on surface water bodies	Report to GOK; results of observations	MEP (Kazhydromet), CWR, RBO	2010- On regularly basis	180.00 Separate programmes of nature users	Central government budget, local government budget Funds of water users
111.	Elaboration and approval of programme on organization and development basin system of monitoring of surface water	Report to GOK; Programme for monitoring basin system	MEP (Kazhydromet), CWR, RBO	2008 2009 2010	8.00 8.00 10.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
112.	Establishment and development observation network and control of basin monitoring system of surface water and provision of labs with advanced equipment for sampling at territorial level	Report to the Government. Observation network	MEP (Kazhydromet), CWR, RBO, local executive bodies	2009 2010 2011 - 2015 8 river basins	300.00 300.00 1500.00	Central government budget, local government budget Funds of water users
113.	Oconduction of surface water monitoring at river basin level	Report to GOK, Results of observations	MEP (Kazhydromet), CWR, RBO	2009 2010 On regularly basis	60.00 95.00 100.00 - annum	Central government budget, local government budget Funds of water users
114.	Establishment of unified information monitoring system of surface water based on GIS technology	Report to GOK; UIS MSW	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	45.00 90.00 90.00 75.00	Central government budget
115.	Elaboration of procedure for coordination between state and inter-sectoral organizations involved in monitoring system	Government Decree	MEP (Kazhydromet), CWR, RBO	2008-2009	18.00	Central government budget
116.	Procurement of software necessary for database operation in terms of collection, analysis, assessment, forecast modeling etc.	Report to the Government software	MEP (Kazhydromet), CWR, RBO	2008 2009	150.00 150.00	Central government budget
117.	R&D for formulation of principles, methodology and rules for performance of particular works in the system of monitoring of surface water	Report to the Government	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011	20.00 20.00 25.00 25.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
118.	Elaboration and introduction of methodology allowing to get comparative results of observations, assessment and forecast irrespectively the place and time of their implementation	Report to the Government Regulation and standards	MEP (Kazhydromet), CWR, RBO	2008 2009 2010	20.00 20.00 25.00	Central government budget
119.	Elaboration and improvement of regulation and standard on conduction of monitoring of surface water	Report to the Government Regulation and standards	MEP (Kazhydromet), CWR, RBO	2008 2009 2010	30.00 45.00 45.00	Central government budget
120.	Assessment of surface water conditions at basin level	Report to the Government	MEP (Kazhydromet), CWR, RBO	2008-2010	20.00	Central government budget
121.	Ambient level of content of microelements in major watercourses of Kazakhstan	Report to the Government	MEP (Kazhydromet), CWR, RBO	2008- 2010	19.00	Central government budget
122.	Elaboration of methodology on assessment of annual water resources in water economy basins	Report to the Government Issue of annual State Water resources Cadastre	CWR, MEP (Kazhydromet), RBO	2008 2009 2010	12.00 15.00 18.00	Central government budget
123.	Assessment of impact of mountain glacier degradation on water resources of Balkhash lake	Report to the Government EIA	MEP (Kazhydromet), CWR, RBO	2008 2009	9.00 10.00	Central government budget
124.	Assessment of water level in Balkhash lake for short and long-term period, and anthropogenic impact on quality of water in lakes	Report to the Government EIA	MEP (Kazhydromet), CWR, RBO	2008 2009	10.00 10.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
125.	Assessment of water level in Alakol set of lakes for short and long-term period, and anthropogenic impact on quality of water in lakes	Report to the Government EIA	MEP (Kazhydromet), CWR, RBO	2008 2009	10.00 10.00	Central government budget
126.	Determination of water consumption upstream of trans-boundary rivers Ili and Irtysh	Report to the Government	MEP (Kazhydromet), CWR, RBO	2008 2009	9.00 10.00	Central government budget
127.	Assessment of multi-year resources of surface water under current climate and environmental conditions at all water basins	Major hydro-geological characteristics	MEP (Kazhydromet), CWR, RBO	2008 2009 2010 2011 Further on, if any	18.00 19.00 20.00 21.00	Central government budget
128.	Elaboration of modern methods for short-term and long-term forecast of water availability in rivers of Kazakhstan	Modern methods for short-term and long-term forecast of water availability in rivers of Kazakhstan	MEP (Kazhydromet), CWR	2008 2009 2010	9.00 10.00 11.00	Central government budget
129.	Assessment of Caspian sea water level for short and long-term (3-5) and (10-15), accordingly	Results of assessment	MEP (Kazhydromet), CWR, RBO	2008 2009	7.00 8.00	Central government budget
130.	Design standard “Determination of basic hydrological characteristics”	SNiP “Determination of basic hydrological characteristics”	MEP (Kazhydromet), CWR, RBO	2008	6.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
131.	Implementation of international commitments on protection of nature	Programme of implementation	MEP (Kazhydromet), CWR, RBO	2008-2010	65.00	Central government budget Foreign grants, loans
132.	Participation on WMO and international projects under UNDP, TACIS etc	Programme of cooperation. Report to the Government	MEP (Kazhydromet), CWR, RBO	2008-2010	-	Foreign grants, loans
133.	Create database on all available training courses in the field of monitoring of water resources ; updating each three years	Information for organisations concerned	MEP (Kazhydromet), CWR, RBO	2008 2010-2025	5.50 12.00	Central government budget
134.	Programme on exchange of experience between local and international training centers; review programme each 5 years	Programme, report to the Government	MEP (Kazhydromet), CWR, RBO	2008 2009 2010-2025	4.00 5.00 20.00	Central government budget
135.	Establishment of training centers based on RBO and observation stations on environment monitoring for technical staff; Provide operation of training centers on annum basis	Information for organizations concerned	MEP Further CWR, RBO, Kazhydromet	2008 2009 2010 2012-2025	30.00 30.00 35.00 245.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
136.	Training of engineers and managers	Report to the Government	MEP (Kazhydromet), CWR, RBO Further CWR, RBO, Kazhydromet	2008 2009 2010 2011-2025	8.00 8.00 10.00 10.00 220.00	Central government budget
5.2. Development of monitoring system of sub-soil water						
137.	Identification of inquiry system for state bodies and organizations concerned in respect of water resources condition	Inquiry system approved by organizations concerned	MEMR (SGC), MEP, CWR	2008 -2009	1.00	Central government budget
138.	Elaboration of “Regulation on operation and protection of observation points within state network"	Registration of Regulation in MJ	MEMR (SGC)	2008	2.00	Central government budget
139.	Elaborate and approve regulation for transfer data on ground water monitoring on irrigation land to IS SMGW	Regulation	MEMR (SGC), CWR	2008	1.00	Central government budget
140.	Доработка "Instruction on conduction of observation for water table, water head, temperature and chemical composition of ground water in SMGW system” and “Instruction-Regulation on monitoring of mining water for drinking purpose” and etc .	Registration of regulations in MJ	MEMR (SGC)	2008	6.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
141.	Regulation on approval procedure by Territorial dpt of geology and sub-soil use in respect of Programme of Production monitoring over environment and reporting documents on ground water accounting requirements of IS SMGW	Regulations approved by ministries concerned	MEMR (SGC)	2008	1.00	Central government budget
142.	Provision of substantiation for Kazhydromet data on monitoring of surface water, climate which are necessary for assessment of conditions of ground water and forecast of ground water resources; development and approval of regulation on exchange of data considering requirements of IS SMGW	Substantiation, Regulation	MEMR (SGC), MEP, CWR	2009	2008-2.50 2009-2.50	Central government budget
143.	Requirements of Law on Sub-soil and sub-soil resources use shall be considered in Regulation on production monitoring over environment developing by MEP, the section on monitoring of ground water	Approval of Provision	MEMR (SGC), MEP	2008		

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
144.	Regulation on inspection conducting by dpt of geology and sub-soil use in respect of conduction monitoring on ground water on private and state network	Regulation	MEMR (SGC)	2008	2008- 2.00	Central government budget
145.	working place for user of IS SMGW	Acceptance certificate	MEMR (SGC)	2010	2008- 3.00 2009 – 14.00 2010 – 3.0	Central government budget
146.	Establish in oblast inspections of dpt of geology and sub-soil use group of SMGW of 2 staff for each oblast inspection (total 28 staff)	Approval of staffing by MEMR	MEMR (SGC)	2008	С 2008 г. 22.00 - annum	Central government budget
147.	Prepare basin map outlining boundaries of ground water basin with that of river basin accounting borders of hydro-geological structures 1:1000000	Map of ground water runoff	MEMR (SGC)	2008	5.00	Central government budget
148.	Hydro-geological map of basins based on new methodology 1:1000000	Set of hydro-geological map of basins	MEMR (SGC)	2013	2008-5.00 2009-5.00 2010-15.00 2011-15.00 2012-15.00 2013-15.00	Central government budget
149.	Clarification of ground water resources as per category of water use at basin level based on new methodology	Information on resources of ground water	MEMR (SGC)	2014	2012-15.00 2013-15.00 2014-15.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
150.	Optimization of observation network SMGW: 1. development of requirements to SMGW 2. identification of network resources in terms of meeting requirement 3. preparation of programme on development of SMGW 4. development of observation network of SMGW within basin	Optimal observation network of SMGW	MEMR (SGC)	2025	2008-2.00 2009-2.00 2012-6.00 2013-6.00 2014-2025-360.00	Central government budget
151.	Development of SMGW ranges	SMGW ranges	MEMR (SGC)	2025	2007-2010-80.00 (20.00 - annum) 2011-2025-300.00 (20.00 - annum)	Central government budget
152.	Improvement of information capacity of SMGW observation system through satellite image of various spectrum and scale	Observations results	MEMR (SGC)	2025	C 2008-2025 – 36.00 (2.00 - annum)	Central government budget
153.	Improvement and introduction of High-Tec in SMGW	Means for operation of observation	MEMR (SGC)	2025	2008-2010-6.00 (2.00 - annum) 2011-2025 (2.00 - annum)	Central government budget
154.	GIS of SMGW in river basin	GIS of SMGW in river basin	MEMR (SGC)	2013	2010-5.00 2011-6.00 2012-6.00 2013-6.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
155.	Evaluation of ground water conditions (hydrogeo-ecological and in terms of reserves) 1. risk assessment criteria of ground water basin 2. assessment of ground water basin based on new mapping	Information on ground water conditions in river basin	MEMR (SGC)	2016	2013-5.00 2014-10.00 2015-10.00 2016-10.00	Central government budget
156.	Identification of nature users (water use) and site of polluted ground water and creation of math model	List of facilities	MEMR (SGC)	2011	2008-2.00 2009-2.00 2010-2.00 2011-2.00	Central government budget
157.	Elaborate and approve document for summary data form 2ТП-vodhoz и ЛКУ.	Approved form of summary data	MEMR (SGC)	2008	2.00	Central government budget
158.	Preparation of improvement programme “Ground water in IWRM”	Programme	MEMR (SGC)	2008	2.00	Central government budget
159.	Increase staffing by 6 persons – hydro-geologists of high qualification in SMGW in IS SGC MEMR	Approve staffing of MEMR	MEMR (SGC)	2008	8.00 - annum	Central government budget
160.	Design of modeling АПДМ for significant hydro-geological object of sub-soil use (water use and nature use)	Modeling АПДМ for significant hydro-geological object	MEMR (SGC)	2008-2015	2008-2.00 2009-7.00 2010-7.00 2011-2015-35.00	Central government budget
5.3. Development of monitoring system of land resources						
161.	Analysis of land legislation and monitoring of land resources	Draft amendment	ALRM, MA, CWR, MEP, SGC, MJ	2008 2009	13.00 13.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
162.	Legal entitlement of provision on conduction of monitoring on land resources as per unified system	Regulations approved by GOK	ALRM, MA, MEP, SGC, CWR	2008	10.00	Central government budget
163.	Analysis and review of land legislation in respect of compatibility with international standard	List of normative documentation; proposed new norms and regulations	ALRM	2008 2009	30.00 30.00	Central government budget
164.	Establishment of central and regional and oblast centers of land monitoring	Report to the Government	ALRM	2008 2009 2010 2011-2013	100.00 100.00 100.00 300.00	Central government budget
165.	Establishment of Automation Information Monitoring of land resources	Report to the Government	ALRM, MA, MEP, SGC, CWR Further on regularly basis	2008 2009 2010	10.00 10.00 10.00	Central government budget
166.	Modernization of stationed observation points	Report to the Government	ALRM	2008 2009 2010	300.00 400.00 300.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
167.	Establishment of ecological observation stationed points 200 points 400 points 500 points 600 points 500 points 400 points	Report to the Government	ALRM	2008 2009 2010 2011 2012 2013	180.00 360.00 450.00 540.00 450.00 360.00	
168.	Special survey in zones of environmental disaster (Aral sea, Balkhash lake, Semei, East-Kazakhstan oblast	Report to the Government	ALRM	2008 2009 2010 2011 2012 2013	15.00 20.00 20.00 30.00 20.00 15.00	Central government budget
169.	Provision of express laboratories	16 labs	ALRM	2008-2010	300.00	Central government budget
6. Information Exchange and Management, Information Infrastructure in the Field of Use and Protection of Water Bodies						
170.	Identification of needs in modern equipment, technology and training of staff	Recommendations, report to the Government	CWR, RBO, MEP, ALRM, MH, SGC	2008 2009	10.00 10.00	Central government budget
171.	Procurement of modern computer equipment, LAN, GPS for CWR and RBO	Report to the Government	CWR	2008 – 2010 Further annual update	2008 - 12.00 2009 – 14.00 2010 - 5.00	Central government budget
172.	Procurement of software for database collection, data analysis and modeling (based on GIS)	Report to the Government	CWR	2008 – 2010	2008 - 10.00 2009 – 4.00 2010 – 4.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
173.	Identification of information needs for basin management and for UIS	Programme of basin monitoring	CWR, RBO, RBC, MEP, SGC, MH, ALRM, MES	2008 Further on, if any	20.00 Financing will be providing at the time of adoption budget for programmes of basin monitoring of appropriate fiscal year	Central government budget
174.	Training: 1) basic knowledge on use and management of information; 2) use of computer equipment 3) modern IT: internet, LAN, database, GIS, specific software for various application in water management sector	Report to the Government	CWR, RBO, MEP, Kazhydromet	2008 – 2010 anum	2008 - 10.00 2009 - 10.00 2010 - 5.00	Central government budget
175.	Elaboration of regulation on information exchange between state and cross-sectoral organizations engaged in monitoring and management of water economy	Government Decree	CWR, RBO, RBC, MEP, SGC, MH, ALRM, MES	2008 2009 2010	8.00 10.00 5.00	Central government budget
176.	Assign coordination and control function on exchange of information in terms of water resources, water facilities on CWR at national level and RBO at river basin level	Amendment of legislation, GOK's decree	CRW, RBO and others	2008-2009	Not required	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
177.	Establishment of R&D Center of water management	Report to the Government	CRW, RBO and others	2008 – 2009 Further providing finance for R&D WM	60.00 Annual budget programme	Central government budget
178.	Establishment of information dpt in CWR and RBOs	Establishment of foundation for UIS of water management	CRW	2008 2009 2010 Further providing finance for departments	50.00 50.00 50.00 Annual budget programme	Central government budget
179.	Entitlement of function on formation and operation of UIS on CWR and RBO at national and regional level, accordingly	Amendment in legislation, GOK:s decree	CRW	2008	Not required	
180.	Establishment of corporate information portal and CWR' site as basis for UIS	Report to the Government	CRW	2008 2009 Further providing finance for operation web portal	10.00 10.00 Annual budget programme	Central government budget
181.	Establish information digest on CWR's site based on routine information on water resources; updating on regular basis	Information for interested	CRW	2008 2009 2010 On regularly basis	10.00 10.00 10.00 10.00 – annum annual budget programme	Central government budget
182.	E-library on CWR's site, updating on regular basis	Information for interested	CRW	2008 2009 2010 Constantly	12.00 10.00 10.00 10.00 - annum annual budget programme	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
183.	E-library located on CWR ‘s site based on periodic material, text books, conference material; annum update	Information for interested	CRW	2008 2009 2010 Constantly	7.00 8.00 8.00 8.00 – annum annual budget programme	Central government budget
184.	Establishment and operation of UIS; design methodology and prepare guidelines for maintaining system on unified approaches and principles	Guidelines on maintaining UIS	CWR, RBO, RBC, MEP, MH, MES, SGC, ALRM	2008	15.00	Central government budget
185.	Elaboration of Concept on UIS of water basins	Concept	CWR, RBO, RBC, MEP, MH, MES, SGC, ALRM	2008 2009	35.00 20.00	Central government budget
186.	GPS based on GIS structures for UIS	Foundation for UIS	CWR, MEP, RBO, Kazhydromet	2008 2009	40.00 45.00	Central government budget
187.	Clarification of the river basin boundaries with the use of modern GIS and entry data in UIS	Approved division on major water economy basins, water economy rayons and sections	CWR, MEP, RBO, ALRM, Kazhydromet	2008 2009	25.00 10.00	Central government budget
188.	Inventory of water bodies, water users and entry in UIS	Database on GIS technology	CWR, MEP, SGC, RBO, Kazhydromet	2008 2009 2010 2011-2013	15.00 35.00 35.00 105.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
189.	Inventory of water economy systems and hydraulic structures and entry data in UIS	Database on GIS technology	CWR, MES, MEP, RBO	2008 2009 2010 2011-2013	20.00 40.00 40.00 120.00	Central government budget
190.	E-database based on hard copies of the State Water Cadastre of the USSR (Kazakhstani part) on water use	Database on GIS technology	CWR, MEP, SGC, Kazhydromet	2008 2009 2010 2011-2012 Further on, if any	15.00 40.00 40.00 80.00 Annual budget programme	Central government budget
191.	E-database based on GIS on water use	Database on GIS technology	CWR	2008 2009 2010 On regularly basis	20.00 45.00 45.00 Annual budget programme	Central government budget
192.	Short-term training on use and protection of water resources	Report to the Government	CWR, MEBP, MF, MEP, ALRM, MEMR, SGC, MH, MI&T, ME&S	2008 2009 2010 On regularly basis	5.00 5.00 5.00 Annual budget programme	Central government budget Foreign grants, loans
193.	Public awareness within the framework of UN Convention on the right of the public to access to information, to decision making process and access to justice on environmental issues	Public awareness campaign	CWR, MEP, RBO, RBC, Mass media	2008 2009 2010 On regularly basis	10.00 10.00 10.00 Annual budget programme	Central government budget
7. Education and Training of Staff in the Field of Use and Protection of Water Bodies						
194.	Survey and preparation of training programme abroad for staff engaged in water sector	Report to the Government. Approved programme	CWR, ME&S MEP	2008 2009 2010	20.00 15.00 15.00	Central government budget Foreign grants, loans

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
195.	Education abroad for water specialties (10 students annum)	Report to the Government.	CWR, ME&S MEP	2008 2009 2010 2011-2018	30.00 30.00 30.00 290.00	Central government budget Foreign grants, loans
196.	Improvement of higher education: Study and elaboration of action plan for preparation of water specialists, including improvement of educational programme in higher institutions, colleges, and training of professor staff	Programme/plan of activities, approved by the Government.	CWR, ME&S MEP	2008 2009 2010 Further on regularly basis	12.00 10.00 8.00 Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
197.	Renewal of system of state order for preparation of water specialists, including agrarian specialist	Report to the Government. National order system is restored	ME&S, CWR, MA, MEP	2008 2009	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
198.	Allocation of state quotas and increasing number of educational grants for preparation water specialists	Report to the Government.	ME&S, CWR, MEP	2008-2018	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
199.	Improve resources basis of labs in higher education, colleges; introduction of new technologies in education process	Recommendations, report to the Government.	ME&S, MEP, CWR	2008 2009 2010 Further on, if any	10.00 10.00 10.00 Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
200.	Improvement of secondary education system: include in curriculum of secondary and primary school water and environmental disciplines as mandatory subject and introduce new subject “Water resources and water use”	Report to the Government	ME&S, MEP, CWR, CAREC	2008-2009 Further on, if any	Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
201.	Development and introduction of text books and guidelines on ecology including section devoted to Water resources of the RK; design of text books on ecology for primary school	Textbook, methodological guidelines		2008 2009 2010 Further on, if any	15.00 15.00 15.00 Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget Foreign grants, loans

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
202.	Implementation of pilot project on improvement of educational and training programme for secondary school teachers dealing with water and environmental subject	Implementation report. Report to the Government.	ME&S, MEP, CWR	2008 2009 2010	15.00 25.00 25.00	Central government budget Foreign grants, loans
203.	Dissemination of pilot project outcomes in respect of training programme for secondary schools teachers trained to water and environmental issues	First phase completed, report to GOK,	ME&S, MEP, CWR	2009 2010 2011-2014	50.00 50.00 400.00	Central government budget Foreign grants, loans
204.	Provision of schools with PC, improvement of access to Internet	Report to the Government Approved plan of activities	ME&S	2008 2009 2010 2011-2014	100.00 100.00 100.00 800.00	Central government budget
205.	Establishment of training centers under CWR and RBO for staff engaged in use and protection of water resources; provision of annual operation of training centers	Information for organizations concerned	CWR, RBO, STO Kazhydromet	2009 2010 2011 Further on regularly basis	60.00 35.00 35.00 Shall be determined at the time of adoption budget for appropriate fiscal year	Central government budget
8. International cooperation in the field of use and protection of trans-boundary waters						
206.	Arrangement of works on implementation of international commitments	Programmes of implementation, report to the Government	MA, CWR, MEP, MEMR, MEA	2008-2010 On regularly basis	65.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
207.	Improvement of bilateral agreements; execution of bilateral long-term agreements including provisions on joint water quality monitoring	Bilateral and multilateral consultations	MA, CWR, MEP, MEMR, MEA	2008 – 2010 On regularly basis	2008 – 10.00 2009 – 10.00 2010 – 13.00	Central government budget
208.	Expansion of regional legal framework for multilateral agreements	Bilateral and multilateral consultations. Signing trans-boundary agreement	MA, CWR, MEP, MEMR, MEA	2008-2010	2008 – 10.00 2009 – 10.00 2010 – 13.00	Central government budget
209.	Joining the Convention on protection and use of trans-boundary water courses and international lakes (1992) by riparian countries	Bilateral and multilateral consultations	MEA, MEP, MA, CWR	2008-2010	6.00	Central government budget
210.	Elaboration of legal mechanism on prevention of transfer of contaminating substances through water	Bilateral and multilateral consultations	MA, CWR, MEP, MEA	2008-2010	6.00	Central government budget
211.	Comparative analysis of national water legislation with that of riparian countries and issue of recommendation on harmonization of legislation in the field of trans-boundary water management	Report	MEP, MJ, MA, CWR	2008	9.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
212.	Elaboration of compensation mechanism in case of emergency discharge of polluting substances in trans-boundary water and caused significant damage to economy of one or several countries	Bilateral and multilateral consultations	MEA, MEP, MA, CWR	2008	9.00	Central government budget
213.	Exchange of routine hydrological information between riparian countries	Interstate agreement	MEP, MA, CWR, MES	2008	7.00	Central government budget
214.	Elaboration of warning call system in trans-boundary water	Bilateral and multilateral consultations	MEP, MA, CWR, MES	2008	10.00	Central government budget
215.	Formulation of unified principles of interactions during accident and emergency in trans-boundary waters	Interstate agreement	MEP, MA, CWR, MES	2009	60.00	Central government budget
216.	Elaboration and implementation of national plan on prevention of pollution of water sources	Plan of activities, approved by the Government	MA, CWR, MEP, MES	2010	30.00	Central government budget
217.	Preparation and implementation of programme on protection of wetland having the international importance as habitat for waterfowls	Programme, approved by the Government	MA, CWR, MEP	2010	159.00	Central government budget
218.	Elaboration of additional measures on implementation of Convention on combating with desertification	Programme, approved by the Government	MA, CWR, MEP	2012	50.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
219.	Joining to Convention on non-navigation type of water use in international water courses (1997)	Government Decree with further ratification	MA, CWR, MEA, MEP, MJ	2012	30.00	Central government budget
220.	Joint elaboration of general principles of complex deployment and rational use of water resources in trans-boundary	Interstate agreement	MA, CWR, MEA, MEP, MJ	2009-2011	45.00	Central government budget
221.	Elaboration of procedures and methodology on preparation of unified international plan of river basin management, considering international commitments of parties involved	International basin management plan: preparation of one section	MA, CWR, MEA, MEP, MEMR, MJ	2009-2010	50.00	Central government budget
222.	Joint elaboration of assessment methodology for water resources and their quality	Interstate agreement	MA, CWR, MEA, MEP, MJ	2009-2011	60.00	Central government budget
223.	Joint employment of hydropower resources in trans-boundary water	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2009	2000.00	Central government budget
224.	Joint implementation of inter-state programme on improvement of ecosystem in trans-boundary water	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2014	1000.00	Central government budget
225.	Joint implementation of inter-state water saving programme	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2015	1500.00	Central government budget

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Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
226.	Implementation of national plan on suspending pollution of water sources	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2016	3000.00	Central government budget
227.	Elaboration of general principles jointly with neighbouring countries on protection of trans-boundary water ecosystem	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2017	75.00	Central government budget
228.	Elaboration of Action plan jointly with neighbouring countries on gradual reduction of environmentally dangerous technologies and production in trans-boundary waters	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2014-2015	75.00	Central government budget
229.	Joining neighboring with Kazakhstan countries to Convention on non-navigation type of water use in international water courses (1997)	Bilateral and multilateral consultations	MA, CWR, MEMR, MEA, MEP, MJ	2014-2016	10.00	Central government budget
230.	Further capacity building of inter-state water management organizations	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2014-2016	150.00	Central government budget
231.	Joint implementation of inter-state complex programme on ecological safety in river basin	Interstate agreement	MA, CWR, MEMR, MEA, MEP, MJ	2020-2025	2000.00	Central government budget
232.	Pursuing of agreed environmental policy based IWRM principles in trans-boundary waters	Inter-state agreement	MA, CWR, MEMR, MEA, MEP, MJ	2020-2025	3000.00	Central government budget

Action Plan for Programme Implementation (2008-2025)

Sl.No.	Measures	Outcome	Responsible Agency (implementation)	Terms of Implementation	Expected cost, KZT mln	Sources of Financing
1	2	3	4	5	6	7
233.	Elaboration and implementation training programme for management staff at regional level	Inter-state agreement – experience exchange and educational seminars	MEA, MEP, MA, CWR, MEMR, MES, MJ	On regularly basis	Annual budget programmes	Central government budget