



**Islamic Republic of Afghanistan
Afghanistan National Development Strategy**

Water Resource Management

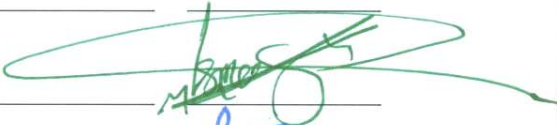


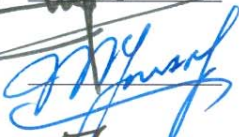

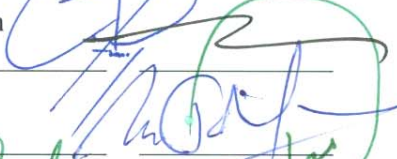

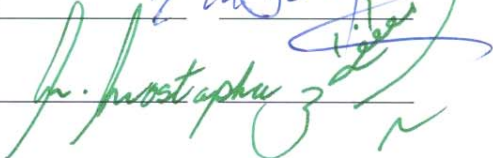
1387 - 1391 (2007/08 - 2012/13)



**Volume II
Pillar III, Infrastructure**

Water Sector Strategy

**Approved by:
Sector Responsible Authorities**

<i>Ministry/Agency</i>	<i>Name of Minister/Director</i>	<i>Signature</i>
Ministry of Energy and Water	HE M. Ismail Khan	
Ministry of Agriculture, Irrigation and Livestock	HE Obaidullah Ramin	
Ministry of Mines	HE Dip. Eng. M. Ibrahim Adel	
Ministry of Urban Development	HE Eng. Mohammad Yousaf Pashtun	
Ministry of Rural Rehabilitation and Development	HE Mohammad Ehsan Zia	
Ministry of Public Health	HE Dr. Said Mohammad Amin Fatimie	
Ministry of Economy	HE DR. M. Jalil Shams	
National Environmental Protection Agency	HE Mostapha Zaher	

FEBRUARY 2008

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of Allah, the Most Merciful, the Most Compassionate

Vision for Afghanistan

By the solar year 1400 (2020), Afghanistan will be:

- A stable Islamic constitutional democracy at peace with itself and its neighbors, standing with full dignity in the international family.
- A tolerant, united, and pluralist nation that honors its Islamic heritage and deep aspirations toward participation, justice, and equal rights for all.
- A society of hope and prosperity based on a strong, private sector-led market economy, social equity, and environmental sustainability.

ANDS Goals for 1387-1391 (2008-2013)

The Afghanistan National Development Strategy (ANDS) is a Millennium Development Goals (MDGs)-based plan that serves as Afghanistan's Poverty Reduction Strategy Paper (PRSP). It is underpinned by the principles, pillars and benchmarks of the Afghanistan Compact. The pillars and goals of the ANDS are:

1. Security: Achieve nationwide stabilization, strengthen law enforcement, and improve personal security for every Afghan.
2. Governance, Rule of Law and Human Rights: Strengthen democratic practice and institutions, human rights, the rule of law, delivery of public services and government accountability.
3. Economic and Social Development: Reduce poverty, ensure sustainable development through a private sector-led market economy, improve human development indicators, and make significant progress towards the Millennium Development Goals.

Foreword

For the preparation of the Afghanistan National Development Strategy



In the name of Allah, the most Merciful, the most Compassionate

Six and half years ago, the people of Afghanistan and the international community joined hands to liberate Afghanistan from the grip of international terrorism and begin the journey to rebuild a nation stunned by a long past of violence, destruction and terror. We have come a long way in this shared journey.

In just a few years, as a result of the partnership between Afghanistan and the international community, we were able to draw up a new, Constitution, embracing the values of democracy, freedom of speech and equal rights for women. Afghans voted in their first ever presidential elections and elected a new parliament. Close to five million Afghan refugees have returned home, making it one of the largest movement of people to their homeland in history.

Thousands of schools have been built; over six million boys and girls have been enrolled, the highest level ever for Afghanistan. Hundreds of health clinics have been established boosting our basic health coverage from 9 percent six years ago to over 85 percent today. Access to diagnostic and curative services has increased from almost none in 2002 to more than forty percent now. We have rehabilitated 12,200 km of roads. Our rapid economic growth, with double digit growth almost every year, has led to higher income and better living conditions for our people. With a developing network of roads and a state-of-the-art communications infrastructure, Afghanistan is better placed to serve as an economic land-bridge in our region.

These achievements would not have been possible without the unwavering support of the international community and the strong determination of the Afghan people. I hasten to point out that our achievements should not make us complacent distracting to face the enormity of the tasks that are still ahead. The threat of terrorism and the menace of narcotics are still affecting Afghanistan and the broader region and hampering our development. Our progress is still undermined by the betrayal of public trust by some functionaries of the state and uncoordinated and inefficient aid delivery mechanisms. Strengthening national and sub-national governance and rebuilding our judiciary are also among our most difficult tasks.

To meet these challenges, I am pleased to present Afghanistan's National Development Strategy (ANDS). This strategy has been completed after two years of hard work and extensive consultations around the country. As an Afghan-owned blueprint for the development of Afghanistan in all spheres of human endeavor, the ANDS will serve as our nation's Poverty Reduction Strategy Paper. I am confident that the ANDS will help us in achieving the Afghanistan Compact benchmarks and Millennium Development Goals. I also consider this document as our roadmap for the long-desired objective of Afghanization, as we transition towards less reliance on aid and an increase in self-sustaining economic growth.

I thank the international community for their invaluable support. With this Afghan-owned strategy, I ask all of our partners to fully support our national development efforts. I am strongly encouraged to see the participation of the Afghan people and appreciate the efforts of all those in the international community and Afghan society who have contributed to the development of this strategy. Finally, I thank the members of the Oversight Committee and the ANDS Secretariat for the preparation of this document.

Hamid Karzai

President of the Islamic Republic of Afghanistan

Message from the Oversight Committee

For the preparation of the Afghanistan National Development Strategy



In the name of Allah, the most Merciful, the most Compassionate

We are pleased to present the Afghanistan National Development Strategy, which reflects the commitment of the Islamic Republic of Afghanistan to poverty reduction and private sector-led economic growth for a prosperous and stable Afghanistan. The ANDS Oversight Committee (OSC) was mandated by the Government to produce a Millennium Development Goals-based national strategy that is Afghan-owned and meets the requirements for a Poverty Reduction Strategy Paper. The OSC met on a regular basis to design, discuss and oversee the development of the strategy, including the identification of the needs and grievances of the people, and the prioritization of resource allocations and actions. To embrace ‘Afghanization’ and ownership, the OSC facilitated inclusive and extensive consultations both at national and sub-national levels.

Sustained fiscal support and continuous evaluation and monitoring are essential now to meet the challenges ahead related to ANDS implementation. The democratic aspirations of the Afghan people are high, yet financial resources remain limited. While much has been accomplished since 2001, more remains to be done as we move from ‘Compact to Impact’. The Afghan Government with support from the international community must act decisively, strategically, and with an absolute commitment to the ANDS goals and vision.

We look forward to working with our government colleagues, civil society representatives, tribal elders and religious scholars, the private sector, the international community and, most importantly, fellow Afghans to implement the ANDS, to help realize the Afghanistan Compact benchmarks and Millennium Development Goals.

Prof. Ishaq Nadiri
Senior Economic Advisor to the President
Chair, ANDS and JCMB

Ahmad Zia Masoud
First Vice-President

Dr. Rangin Dadfar Spanta
Minister of Foreign Affairs

Dr. Anwar-ul-Haq Ahady
Minister of Finance

Dr. Sarwar Danish
Minister of Justice

Dr. Amin Farhang
Minister of Commerce and
Industry

Dr. Jalil Shams
Minister of Economy

Dr. Zalmay Rassoul
National Security
Advisor

Haneef Atmar
Minister of Education

Acknowledgments

For the preparation of the Afghanistan National Development Strategy



In the name of Allah, the most Merciful, the most Compassionate

The Afghanistan National Development Strategy (ANDS) could not have been developed without the generous contribution of many individuals and organizations. The ANDS was finalized under the guidance of the Oversight Committee, appointed by HE President Hamid Karzai and chaired by H.E. Professor Ishaq Nadiri, Senior Economic Advisor to the President and Chair of the ANDS Oversight Committee. The committee included: H.E. Rangeen Dadfar Spanta, Minister of Foreign Affairs; Anwar-ul-Haq Ahady, Minister of Finance; H.E. Jalil Shams, Minister of Economy; H.E. Sarwar Danish, Minister of Justice; H.E. Haneef Atmar, Minister of Education; H.E. Amin Farhang, Minister of Commerce; and H.E. Zalmi Rassoul, National Security Advisor.

We would like to sincerely thank the First Vice-President and Chair of the Economic Council, H.E. Ahmad Zia Massoud. Special thanks are also due to H.E. Hedayat Amin Arsala, Senior Minister and H.E. Waheedulah Shahrani, Deputy Minister of Finance and the Ministry of Finance team. In addition, we would like to thank the Supreme Court, the National Assembly, Government Ministries and Agencies, Provincial Authorities, Afghan Embassies abroad, national Commissions, the Office of the President, Civil Society Organizations, and International Community.

All Ministers, deputy ministers and their focal points, religious leaders, tribal elders, civil society leaders, all Ambassadors and representatives of the international community in Afghanistan; and all Afghan citizens. National and international agencies participated actively in the ANDS consultations. Their contributions, comments and suggestions strengthened the sectoral strategies, ensuring their practical implementation. Thanks are also due to the Ministry of Rural Rehabilitation and Development for their significant contributions to the subnational consultations. Special thanks are further due to the President's Advisors, Daud Saba and Noorullah Delawari for their contributions, as well as Mahmoud Saikal for his inputs. We are also indebted to the Provincial Governors and their staff for their contributions, support and hospitality to the ANDS staff.

Special thanks go to Wahidullah Waissi, ANDS/PRS Development Process Manager, for his invaluable contribution and for the efforts of his team of young Afghan professionals who dedicated themselves tirelessly to completing the I-ANDS, Afghanistan Compact and the full ANDS in consultation with both national and international partners. The Sector Coordinators included Rahatullah Naeem, Farzana Rashid Rahimi, Shakir Majeedi, Attaullah Asim, Mohammad Ismail Rahimi, Zalmi Allawdin, Hedayatullah Ashrafi, Shukria Kazemi, Saifurahman Ahmadzai, and; the Sub-National Consultations Team consisted of Mohammad Yousuf Ghaznavi, Mohammad Fahim Mehry, Shahenshah Sherzai, Hekmatullah Latifi, Sayed Rohani and Osman Fahim; and Malik Sharaf, Naim Hamdard, Saleem Alkozai, Mir Ahmad Tayeb Waizy, Sayed Shah Aminzai, Khwaga Kakar and Mohammad Kazim. Thanks to Nematullah Bizhan for his special contribution from the JCMB Secretariat. We are also indebted to the many national and international advisers who supported this effort. In particular, we would like to thank Zlatko Hurtic, Paul O'Brien, Jim Robertson, Barnett Rubin, Peter Middlebrook, Richard Ponzio, Anita Nirody, Shakti Sinha, Ashok Nigam, Christopher Alexander and Ameerah Haq.

Finally, I would like to thank all who contributed towards this endeavor in preparation of the first Afghanistan National Development Strategy, a milestone in our country's history and a national commitment towards economic growth and poverty reduction in Afghanistan.

Adib Farhadi,
Director, Afghanistan National Development Strategy, and
Joint Coordination and Monitoring Board Secretariat

The complete list of contributors will be attached shortly.

The Water Sector Strategy was developed as a result of the commitment and efforts of members of key Afghan ministries, donors, civil society and the private sector.

The invaluable contribution of HE Mohammad Ismail Khan, Minister of Energy & Water, H.E. Obaidullah Ramin, Minister of Agriculture, Irrigation and Livestock, HE Dip. Eng. M. Ibrahim Adel, Minister of Mines, HE Eng. Mohammad Yousuf Pashtun, Minister of Urban Development, HE Mohammad Ehsan Zia, Minister of Rural Rehabilitation and Development, HE Dr. Said Mohammad Amin Fatimie, Minister of Public Health, HE Dr. M. Jalil Shams, Minister of Economy, HE Mostapha Zahir, Director General of the National Environment Protection Agency, has been invaluable in the development of this sector strategy.

Finally, we would like to thank everyone who assisted the ANDS Secretariat in working to develop the Water Sector Strategy. We look forward to the firm commitment of all our stakeholders throughout the implementation of this strategy.

Certainly, contributions to the Water Sector will remain key to the success of this strategy in particular, and of the ANDS in general.

Special thanks also go to the following for their valued help and support:

HE Eng. Shojaudin Ziaie, HE Eng. Pir Mohammad Azizi, HE Dip. Eng. Mohammad Akram Ghiasi, HE. Dr. Qiamudin Djalalzada, Eng. Dad Mohammad Baheer, Eng. Sultan Mahmood, Hans Husselman, Paul Collins, Eng. Sayed Sharif Shobair, Mohammad Qasim Naimi, Ghulam Hassan, Eng. Mohammad Naim Tokhi, , Mohammad Qasim Salehi, Abdul Hashim Hikmat, Eng. Abdul Waheed Hamidi, Eng. Fahimullah Ziaee, Eng. Waheedullah Majeed, Jamal Nasir, Eng. M. Ali Akbari, Roya.Husseni, Amin Shafiee and Diana Nawazi.

Map of Afghanistan



Afghanistan National Development Strategy (ANDS) Structure

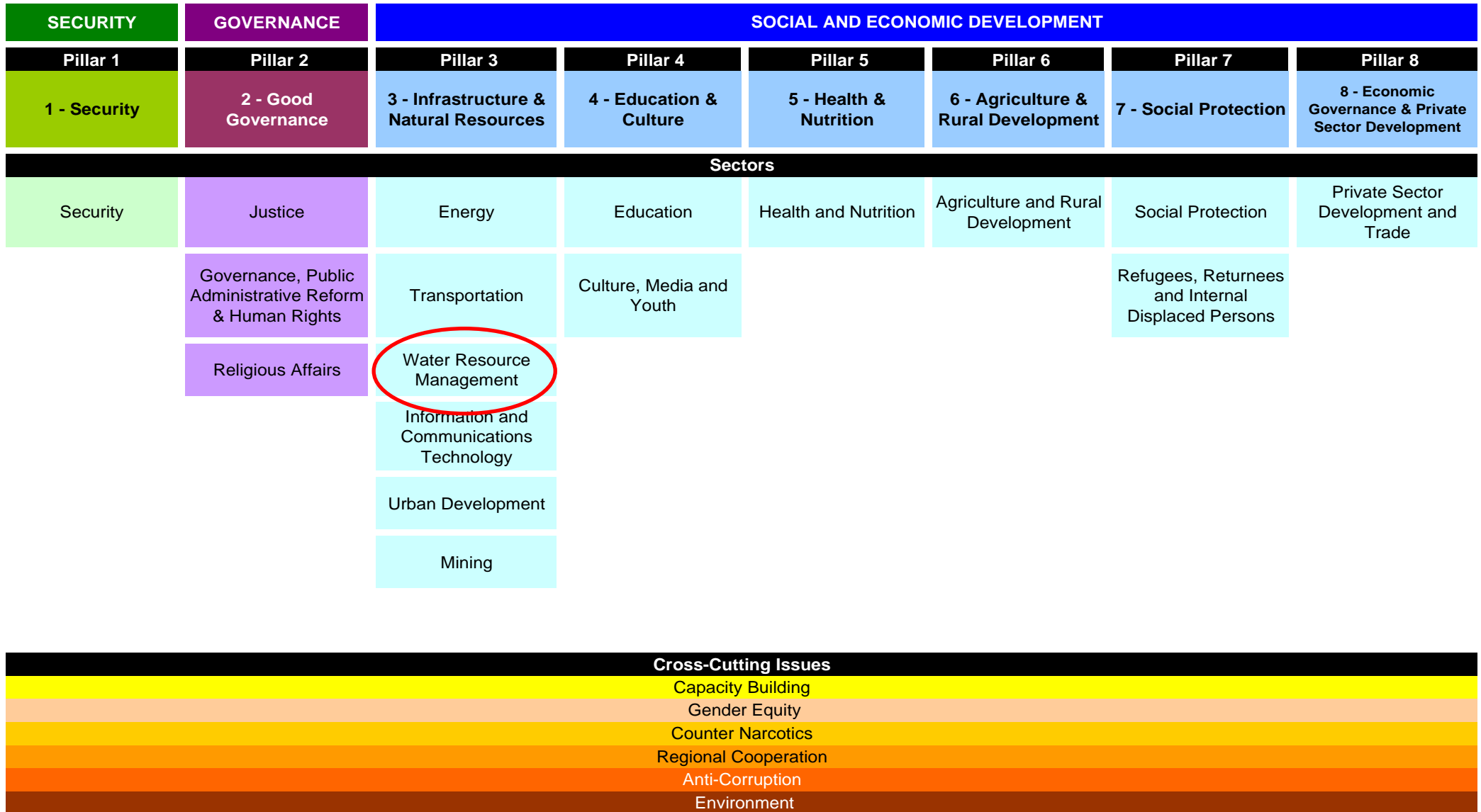


Table of Contents

I.	EXECUTIVE SUMMARY	1
1.1	INTRODUCTION	1
1.2	THE WAY FORWARD.....	1
1.3	WATER SECTOR DEVELOPMENT PROJECTS.....	2
1.4	POVERTY ALLEVIATION.....	3
II.	INTRODUCTION	4
2.1	GENERAL	4
2.2	POVERTY PROFILE	4
III.	CONTEXT	7
3.1	SECTOR STATUS.....	7
3.2	COUNTRY FEATURES	7
3.2.1	<i>Geography</i>	7
3.2.2	<i>Climate</i>	7
3.2.3	<i>Water Resources</i>	8
3.3	SECURITY.....	8
3.4	SECTOR STRATEGY.....	8
3.5	WATER SECTOR INSTITUTIONAL STRUCTURE.....	9
3.5.1	<i>Introduction</i>	9
3.5.2	<i>SCWAM and the Technical Water Secretariat</i>	9
3.6	WATER POLICIES AND LEGISLATION.....	12
3.6.1	<i>Background</i>	12
3.6.2	<i>Policy Formulations</i>	12
3.7	DONORS AND PARTNERS.....	13
3.8	NATIONAL AND INTERNATIONAL NGO'S AND THE PRIVATE SECTOR.....	15
3.9	UNIVERSITIES, COLLEGES AND OTHER TRAINING PROVIDERS	15
3.10	<i>Conclusions</i>	16
IV	OVERALL STRATEGY FOR THE WATER SECTOR	18
4.1	STRATEGIC VISION STATEMENT.	18
	<i>Strategic Vision</i>	18
	<i>Goals:</i>	18
	<i>Afghanistan Constitution</i>	18
4.2	AFGHAN COMPACT BENCHMARKS.....	18
4.3	WATER RESOURCES MANAGEMENT PLAN.....	20
4.3.1	<i>Integrated Water Resources Management</i>	20
4.3.2	<i>River Basin Management Institutional Structure</i>	21
4.4	DOMESTIC WATER SUPPLY AND SANITATION.....	22
4.4.1	<i>Current Situation</i>	22
4.4.2	<i>Urban Water Supply Goals</i>	23
4.4.3	<i>Rural Water Supply Goals</i>	23
4.4.4	<i>Sanitation</i>	23
4.5	INDUSTRIAL WATER AND WASTEWATER DISPOSAL	24
4.5.1	<i>Current Situation</i>	24
4.5.2	<i>Development Goals</i>	24
4.5.3	<i>Benchmark Clarification</i>	24
4.5.4	<i>Current Situation</i>	24
4.5.5	<i>Development Goals</i>	25
4.6	HYDROPOWER.....	25
4.6.1	<i>Current Situation</i>	25
4.6.2	<i>Development Goals</i>	25
4.7	ENVIRONMENT.....	26
4.8	NATURAL DISASTERS	26

4.9	HUMAN CAPACITY DEVELOPMENT	27
4.10	INFORMATION GATHERING	27
V.	PRIORITY POLICIES AND OBJECTIVES.	28
5.1	GENERAL	28
5.2	IMPLEMENTATION PROCEDURE.....	29
5.3	DESIRED OUTCOMES	29
5.3.1	<i>Short Term Objectives</i>	29
5.3.2	<i>Intermediate Term Objectives</i>	30
5.3.3	<i>Long Term Objectives</i>	31
VI.	INPUTS AND OUTPUTS	33
6.1	MAJOR PROGRAMS	33
6.2	INSTITUTIONAL SET-UP AND CAPACITY BUILDING	33
6.3	NATIONAL WATER RESOURCES DEVELOPMENT	34
6.3.1	<i>Planning Study Components</i>	34
6.3.2	<i>Infrastructure Components</i>	35
6.4	NATIONAL RIVER BASIN MANAGEMENT	41
6.5	IRRIGATION REHABILITATION	41
6.6	URBAN WATER SUPPLY AND SANITATION (MID-TERM PROGRAM)	42
6.7	RUWATSAN	42
6.8	RIVERBANK PROTECTION	43
6.9	“FOOD SECURITY FOR ALL” (AGRICULTURE PROGRAM)	43
6.10	PROVINCIAL CONSULTATIONS’ PRIORITIES.....	43
6.11	PRIORITIZED AND COSTED PROJECTS AND PROGRAMS	43
VII	CROSS CUTTING	45
7.1	CROSS CUTTING ISSUES	45
7.2	ENVIRONMENT.....	45
7.3	COUNTER NARCOTICS.....	45
7.4	GENDER	45
7.5	ANTI CORRUPTION:.....	45
7.6	CAPACITY BUILDING:	45
VIII	IMPLEMENTATION FRAMEWORK	46
A	RISK ASSESSMENT	46
B	MONITORING AND EVALUATION PROCESS	46
XII	BIBLIOGRAPHY:	50
	ANNEX I: WATER SECTOR STRATEGY ACTION PLAN.....	53
	ANNEX II: WATER SECTOR STRATEGY MONITORING MATRIX	55
	ANNEX III: LIST OF PROGRAMS AND PROJECTS (WATER SECTOR)	57
	ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (WATER SECTOR)	63

ABBREVIATIONS

AC	Afghan Compact
ADB	Asian Development Bank
AGS	Afghan Geological Survey
ANDS	Afghan National Development Strategy
ARTF	Afghan Reconstruction Trust Funds
ASAP	As soon as possible
AUWSSC	Afghanistan Urban Water Supply and Sewerage Corporation
BGR	Bundesanstalt fuer Geowissenschaften und Rohstoffen
CAWSS	Central Authority for Water Supply and Sewerage
CDC	Community Development Council
CIDA	Canadian International Development Agency
CN	counter narcotics
CUM	cubic meter
DfID	Department for International Development
DM	Deputy Minister
EC	European Commission
EIA	Environmental Impact Assessment
EIRP	Emergency Irrigation Rehabilitation Program
ETP	Evapotranspiration
EU	European Union
FAO	United Nations Food and Agricultural Organization
FS	Feasibility study
FSO	Financial Support Operations
GIS	Geographical Information System
GTZ	Deutsche Gesellschaft fuer Technische Zusammenarbeit
GWP	Global Water Partnership
Ha	Hectare
HPP	hydro-power plant
IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Agency
KfW	Krediet fuer Wiederaufbau
Km	kilometer
M&E	Monitoring and Evaluation
MAIL	Ministry of Agriculture, Irrigation and Livestock
MCN	Ministry of Counter Narcotics
MDG	Millennium Development Goal
MEW	Ministry of Energy and Water
MFA	Ministry of Foreign Affairs

MIS	Management Information System
MoC	Ministry of Commerce
MoE	Ministry of Economics
MoF	Ministry of Finance
MoM	Ministry of Mines
MoPH	Ministry of Public Health
MRRD	Ministry of Rural Rehabilitation and Development
MUD	Ministry of Urban Development
MoWA	Ministry of Women Affairs
MW	Megawatt
NEPA	National Environmental Protection Agency
NGO	Non Governmental Organization
NHCA	National Hydrology Committee for Afghanistan
NRVA	National Risk and Vulnerability Assessment
NSP	National Solidarity Program
O&M	Operation and Maintenance
PCU	Project Coordination Unit
RBA	River Basin Agency
RBC	River Basin Council
RBM	River Basin Management
SBA	Sub-Basin Agency
SBC	Sub-Basin Council
SCWAM	Supreme Council for Water Affairs Management
SIA	Sociological Impact Assessment
SIDA	Swedish International Development Agency
SOE	State Owned Enterprise
Sq km	square kilometer
TA	Technical Assistance
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
USGS	United States Geological Survey
UWSS	Urban Water Supply and Sewerage
WB	World Bank
WRD	Water Resources Development
WRM	Water Resources Management
WRPU	Water Resources Planning Unit
WSS	Water Supply and Sanitation
WUA	Water User Association

GLOSSARY

Shura	Traditional or Local Council
Mirabs	A person responsible for irrigation water management in a community
Karezes	Traditional irrigation system
Arhads	Traditional irrigation system
Kuchi	Nomad
Dearan/sahrah ashes	A place within or an outside compound for waste products, animal manure and

“WATER IS LIFE: EACH DROP IS A LEGACY FOR PRESENT AND FUTURE GENERATIONS”

I. EXECUTIVE SUMMARY

1.1 Introduction

Social needs of the country require water for domestic water supply and sanitation; economic needs are for agriculture, electrical generation, and industrial usage while ecological needs superimpose additional requirements for fisheries, forestry, and bio-diversity. All these needs are on an almost continuous daily basis, now and into the future.

Afghanistan receives its water in the form of snow falling on mountainous ridges. In a matter of a handful of months, the snow melts and the associated surface runoff rapidly subsides to nothing. Water scarcity abounds for the remaining months of the year.

During the 1960s through the 1970s, a great many advances were taken in identifying numerous potential water projects of almost every conceivable type and complexity. Some large scale water projects were also implemented. All that stopped through the disruptive years of occupation and unrest. At present, the Afghan water sector’s institutional structure is organized on a sector basis. Water resources development and management is conducted on a project to project manner, and its planning and administrative elements are essentially centralized.

The water sector’s governance structure, however, has been disrupted, and most infrastructure for agriculture, hydropower, and water supply has deteriorated significantly. Data collection has ceased, and even the stability of line ministries remains in a constant state of flux.

1.2 The way forward

Although a gradual transformation to integrated water resource management (IWRM) is actually in progress; the vast majority of current development undertakings are still being implemented on a project to project basis. This is because IWRM requires a significant infusion of relevant water and land use data pertaining to the analysis of river basins and/or sub-basins. Some of this data is non-existent at this time. Delaying development accordingly would have severe impact on Afghanistan’s immediate needs for poverty alleviation. Any delay would also further impede Afghanistan’s ability to effectively absorb a substantial number of returning refugees.

In addition to adopting IWRM principals, the Afghan water sector, over the course of time, will transition from a centralized to a decentralized institutional structure. Decentralization will establish jurisdictional boundaries conforming to natural river basins, further divided in sub-basins. A transition to a River Basin Organization (RBO)¹ for the introduction of the new way of water resources management and institutional set-up is already being experimented with along the northern frontier comprising the Amu Darya River Basin. Experience gained from this major pilot project will help pave the way for implementing additional RBO undertakings throughout the country in a progressive manner. In making this transition, it is anticipated that all stakeholders will participate in water sector development and management in their respective river basins or sub-basins.

¹ As early as the mid-1950s, Afghanistan had been introduced to application of IWRM principles as implemented through a river basin management structure: The Helmand – Aghandab Valley Association (HAVA), which was established in conjunction with the Kajakai Multipurpose Project, was conceived specifically to develop the Provinces of Helmand and Khandhar. .

Further change is in progress at the water user level. In the water sector, the concept of water user associations (WUAs) is being introduced. WUAs will, in many regions of the country, supplant the traditional governance mechanisms which have long since become dysfunctional. In urban water supply, the public agency Central Authority for Water Supply and Sanitation (CAWSS) will be replaced by the semi public Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC). All of these changes are aimed at improving the efficiency of water use and management. With respect to governance, new water law legislation is being prepared, environmental regulations have already been legislated, and enforcement capabilities are being established through the Ministry of the Interior. In the rural sector, governance is also being redressed through the establishment of Community Development Councils (CDCs) under the National Solidarity Program (NSP). Additionally rural water sanitation and village level irrigation is being addressed by the national development program rural water sanitation program (RUWATSAN)

1.3 Water Sector Development Projects

During the period required for transforming development and management principles to IWRM, as well as for transitioning institutional structures to RBOs, a continued project to project implementation program in the water sector needs to be strongly supported by both the donor community and international funding agencies. Substantial infrastructure investment is needed for this development:

- Water sector components involve the construction of storage dams;
- Municipal water supply requires storage and/or diversion dams for the supply of surface waters;
- Both municipal and rural water supply require installation of wells and extraction equipment and comprehensive survey for the supply of groundwater;
- Water conveyance components involve construction of diversion dams, canals, and/or pipelines;
- Water utilization components include the construction of hydroelectric generating plant, pumping plants, water supply and wastewater treatment plants, and water distribution facilities;
- Supportive infrastructure components entail the construction of river diversion facilities which are required during dam construction, service roads, temporary labor camps, and installation of monitoring equipment (instrumentation);
- Groundwater needs to be replenished through the use of recharge basins and dams;
- Water harvesting techniques need to be constructed to supplement groundwater replenishment, as well as to provide for the care of livestock;
- Riverbank erosive defensive measures need to be inaugurated, as valuable farmlands are being severely impacted throughout the country;
- Reforestation, fisheries, biodiversity, and socio-environmental considerations need to be addressed and appropriately attended to as conditions warrant;
- Flood mitigation management requires implementing both non-structural and structural measures to minimize flood risks and damages. Non-structural measures involve establishing flood warning and preparedness (FW/P) amongst the impacted populace, structural measures involve construction of flood storage projects, embankments, and river training facilities; contrarily
- Dehsabz city and Barikab water requirements must be fully integrated into the water and hydro electric management plans of all the affected water basins.
- Drought management, in addition to the construction of water storage reservoirs, requires developing extensive expertise in weather forecasting techniques; and.
- Applied appropriate technologies in irrigation and agricultural practices shall be introduced to improve effective and efficient use of water.
- Control and protection of underground water and its use is very important

A delineation of prioritized water sector projects selected for development is included in the implementation plan developed with this strategy paper. This delineation is mainly presented (formatted) on a project to project basis at this time. As comprehensive IWRM analyses progress in the future, they can be expected to be incorporated with and thoroughly integrated into the respective planning and development programs applicable to their respective basins and/or sub-basins.

1.4 Poverty Alleviation

Poverty remains a core issue for Afghanistan. Analyses and deductions derived from the National Risk & Vulnerability Assessment surveys rank the people of Afghanistan amongst the most severely impacted and vulnerable people in the world today. Contribution of the Water Sector to poverty alleviation therefore becomes of paramount importance. In Global Water Partnership (GWP) studies, conducted particularly since 2003, essential or highlighted considerations relating to the adoption of IWRM philosophy have come to light. Four main pivotal insights evolved from the GWP studies:

- In economies having a preponderance of population dependent upon agriculture, access to water is a fundamental factor influencing the level of poverty.
- Strengthening governance structures is of fundamental importance.
- Great effort is needed to ensure management approaches that can adapt to hydrologic variability (spatially and temporally dispersed), limited data and knowledge, rapid social, technological, economic, and demographic changes and dynamics which are politically motivated
- Continuous attention to the needs of the poor is required when adopting a broad integrated approach to solve water problems; particularly when the approach is considered within a context of weak institutional structures and rapid social changes.

Implementation of IWRM policies generally do not target a central objective of providing water for people's use. Instead emphasis is generally focused on water demand management, cost recovery, reallocation of water use to higher value users, and to environmental conservation. It is obvious that a livelihood-centered IWRM approach is required and needs to be implemented in any effective Afghanistan poverty alleviation program. Poverty alleviation has to be constructed on a broader foundation of stakeholder capacity building, and the emphasis should be to support farmers' and other poor water users' desires to achieve sustainable livelihoods. Simultaneously, this approach should be responsive to accepting social responsibility by minimizing downstream and/or off-site impacts, i.e., those areas which fall outside of the poverty study area or bounds.

II. INTRODUCTION

2.1 General

Years of war and conflict, coupled with six years of persistent drought had a devastating impact on the social, environmental and economic structures in Afghanistan, resulting in:

- A vast majority of the population without access to safe and adequate drinking water;
- Damaged existing water infrastructure and lack of required infrastructure need for Afghanistan
- A growing incident of water-borne diseases with little or no medical assistance available;
- A significant decline in the output of the agricultural sector and damage of its infrastructure;
- A large-scale displacement of the population within and outside the country;
- Uncontrolled and deliberate cutting of forests reducing significantly the natural resource base and damaging the environment;
- A significant increase in river bank erosion and flood damages.
- Natural plants, wild pistachio and other nut bearing forest drying up from the roots;
- Badly damaged traditional community based institutions for the management of forests, water and other natural resources.
- Depletion of ground water level due to over exploitation of ground water

Population growth, returning refugees, and a re-vitalized and growing economy have created competitive demands on an already scarce water resource. A lack of specific national legislation and strategies makes proper response to the growing needs of the Afghan communities impossible. The Water Sector is central to responding to these needs.

2.2 Poverty Profile

In Afghanistan, poverty is rampant and the poor invariably lack access to freshwater and sanitation. Caught in a vicious circle, the poor not only end up paying more for water, both in terms of money and energy expended in acquiring it, they are much more susceptible to both water and sanitation borne diseases. Improving freshwater access and conditions of sanitation can factor strongly in poverty alleviation.

A key reason why poor people lack access to clean water and sanitation and why water is used in an environmentally unsustainable manner is the lack of IWRM capacity. IWRM with strong emphasis on ecosystem management improves environmental conditions, enriching the livelihoods of those dependent upon it.

Apart from adopting satisfactory IWRM initiatives, instituting good governance is perhaps the most important requirement for solving problems of providing freshwater access and sanitation to the poor. Governance includes policy, management, legal frameworks, effective institutions, and responsive community participation. Good governance, in consort with good science, facilitates sustainable use of water resources, leading to achieving sustainable economic development. Thus, poverty reduction can be promoted through the equitable distribution of benefits. Where shared resources are involved, a potential for reduction of conflict also can be achieved.

To fully address and achieve that Millennium Development Goals (MDG) targeting both the aspects of poverty alleviation and gender empowerment, the following guidelines predicated upon global experiences should be included in the IWRM criteria:

- Water law and policy should formally recognize the validity and legitimacy of local community-based water arrangements, so long as these are in compliance with constitutional imperatives and principles of human rights.
- Water resources development should provide technical and financial support to small-scale water use, particularly as is practiced by women
- Administration and allocation of water use should facilitate small-scale rural use without imposing restrictive unrealistic barriers or water use quotas, but also should incorporate realistic and/or practical monitoring methods/devices.

Achievements

Following is a listing of achievements realized in the Water Sector since 2001:

- Governance: Formation of the Supreme Council for Water Affairs Management (SCWAM) and Technical Secretariat, preparation of new water laws and a multitude of sector policies, environmental law were enacted by the Afghanistan Parliament.
- Water Resources Management:
 - Adoption of IWRM, formations of the companion concept of River Basin Organizations.
 - Feasibility studies completed or underway for small, medium and large Infrastructure projects
 - Rehabilitation and modernization of hydrological stations have been started
 - Research and modeling for safe drinking water supply in Kabul for short, medium and long term
- Irrigation: 1200 small, medium and large irrigation networks have been rehabilitated or constructed resulting increase in irrigation land from 1.6 million to 1.8 million hectares.
- Access to safe drinking water and sanitation
 - Establishment of (Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC)
 - 140 Projects for water supply and sanitation have been developed
 - Research and assessment of underground water for Kabul
 - Water supply systems have been rehabilitated in 11 provinces
- 3.8 Million people benefited from water Supply and sanitation in rural areas through:
 - Construction of 45,666 wells and installation of pumps
 - Construction of 68 water supply systems
 - Construction of 18641 toilets

Challenges and Constraints

Following is a delineation of major challenges and constraints immediately confronting the Water Sector:

- Lack of skilled/experienced human and financial resources and institutions
- Lack of reliable hydrological, meteorological, geo-technical and water quality data
- Inadequate infrastructure and equipment
- Inadequate of ground water information and data
- Lack of economic mechanisms regulating water use and investments for irrigation, water supply, sanitary systems and hydropower generation
- Unclear delineation of responsibilities
- Projects not integrated among various line ministries
- Donors focused on emergency projects
- Access to safe drinking water and sanitation is not qualifying the goals of MDGs
- Lack of resources for national underground water survey in the country
- Digging of deep wells without coordination and enough information of hydro geological

Water and Poverty Reduction and Economic Growth

Emphasis on poverty alleviation and private sector development:

- Improve access to clean water to support decrease in infant mortality and increase in life expectancy by mitigate water-borne disease
- Support private sector development, employment generation and poverty reduction
- Provide water for irrigation for both cash and non-cash producing crops and support poverty reduction among rural population

Provincial Development Plans (PDPs)

The Water Sector Strategy incorporates feedback, proposed projects and comments from the Sub National Consultations (SNCs) and is a response to the people's needs and development goals.

III. CONTEXT

3.1 Sector Status

After the defeat of the Taliban in 2001, a significantly smaller amount of resources relative to other sectors of the economy went into restoration of capacity in the water sector, i.e., technical, Managerial and infrastructure capacities. This was so despite programs and projects for;

- the rehabilitation of the irrigation networks and associated works;
- implementation of the National Solidarity Program (NSP) in the rural sector supporting water pumps, micro-hydro and small scall irrigation systems;
- the urban sector with rehabilitation and extension of water supply systems in Kabul and 22 provincial towns and improvement of the institutional set-up and management capacity;
- The hydro-power sector with the rehabilitation of some hydro-power plants and implementation of demonstration projects for micro-hydro power (and renewable energy) in remote rural areas.

However, initial steps were also undertaken to draft policies, legislation and strategies for the planning, development and management of the water sector.

3.2 Country Features

3.2.1 Geography

Afghanistan is a semi arid land locked country with an area of about 655,000 square km extending about 1,300 km from southwest to northeast and about 600 km from northwest to southeast. Over three quarters of the land is mountainous, the interconnected ranges of Pamir, Hindu Kush, Koh-i-Baba, and Parapamisus rising in some places more than 6,000 m separate the rich plains of the north from the central plateau and southern valleys and deserts. This impressive chain of mountains and a smaller range running along the eastern edge of the country (Koh-i-Sulaiman) are the source of all the nation's rivers. Exhibit 2 depicts general land use conditions throughout Afghanistan

3.2.2 Climate

Afghanistan's climate is continental, with temperature ranging from 45°C in summer to minus 20°C in winter. In spring, late frost can affect agriculture, mainly fruit production. Average annual rainfall is estimated at around 250 millimeters and varies in different parts of the country from 1200 millimeters in the higher altitudes of the northeast to 60 mm in the southwest. Snow falls regularly in the mountainous regions and higher altitudes of the Northeast and the Central Highlands, while the rest of the country has varying snow fall. Annual evapotranspiration (ETP) rates are relatively low in the Hindu-Kush (900 – 1,200 mm) due to long and sever winters. They vary between 1,200 mm and 1,400 mm in the northern plains and reach up to 1,800 mm in the southern and southwestern plains. Distribution of seasonal precipitation patterns are shown on Exhibit 3.

Extreme droughts and flooding are expected to occur more frequently in the coming decades and this may cause major economic losses and social and environmental disasters. Climate models predict that rising temperatures will trigger major regional changes in the amount and distribution of precipitation with direct consequences for the availability and use of water resources, although such models have consistently yielded estimates of temperature increases in excess of actual increases.

3.2.3 Water Resources

Snow at elevations above 2,000 m represent about 80 percent of Afghanistan's water resources (excluding fossil groundwater) and is of key importance to the country as natural water storage. However, the quite significant amount of rain fall in spring should be considered, too. Severe droughts are generally caused by low winter precipitation in two consecutive years. Historical records show that low winter rainfall in two successive years occurs at least once every 10 -15 years. During the last cycle of drought, the glaciers decreased in size. If this reduction can be associated with global climate change, this poses additional longer term threats to the water sector.

Average total annual natural storage of water in the form of precipitation is about 165,000 million m³ for the whole country. The total annual surface water volume of about 57,000 million m³ corresponds to approximately 35% of this total. With approx 65% future use of that flow in Afghanistan (at present only 30 %) average surface water availability per head is roughly estimated at 2,280 m³/year, which would be satisfactory if there was not a problem of seasonal time scale and spatial distribution:

River Basin	Volume of water per year		Present Usage		Surface area		Population	Potential Water per capita
	Billion CUM	% of total	Billion CUM	% of available water	Sq km	% of total	Million	CUM per year
Amu Dariya	22.00	39	5.3	24	91.5	14	3.4	6470
Harirod-Murghab	3.06	5	1.3	42	78.4	12	2.1	1457
Helmand	9.30	16	5.4	58	2649	41	7.1	1310
Kabul	20.76	36	5.2	24	77.7	12	8.9	2333
Northern	1.88	3	1.88	100	71.7	11	3.3	570
Non-drainage					67.9	10	0.2	

3.3 Security

The deteriorating security situation in the country, particularly in southern, south-eastern and eastern provinces, has impacted activities in the water sector. Security concerns have led some implementing partners to stop work temporarily, and over the longer term, to revise their implementation strategies to reduce risks to their personnel. Work stoppages, additional security requirements, and the ability to provide adequate and regular technical oversight all have an adverse impact on their capacity to deliver, timing, cost, and quality of development programmes. Greater reliance on local management and implementation may be essential. Experience has shown that adopting local formal and informal measures enhances security

3.4 Sector Strategy.

Development of the Water Sector Strategy (WSS) involves implementing a sub-sector approach to the water utilization system. An effective strategy requires a different approach to governance and development of:

- urban and rural water supply and sanitation;
- irrigation and drainage;
- hydropower;

- industrial water supply and wastewater disposal;
- flood protection and preparedness;
- drought mitigation measures; and
- Environmental conservation, including forestry, fisheries, and bio-diversity.

Each of these sub-sectors necessitates significant institution building, enhancement of legal frameworks, capacity development, enlisting economic mechanisms, intensive rehabilitation, and facilitating related development.

Several line ministries and GOA agencies are directly and indirectly involved in activities related to the development and management of Afghanistan's water sector. Each entity has drafted a strategy related to its specific sector mandate, and has generally incorporated water sector activities accordingly. All indirect or peripheral line ministry water sector activities are integrated into this Sector Strategy paper. Pertinent oversights or deficits in peripheral strategies, have been rectified in this water sector strategy, so as to create a comprehensive picture of the programmed activities in the Afghan water sector.

3.5 Water Sector Institutional Structure

3.5.1 Introduction

Through the 1970's, development and management of water resources were undertaken by three principal line ministries: 1) Ministry of Water and Power which administered irrigation and water power; 2) Central Authority for Housing and Town Planning which administered urban water supply and sanitation; and 3) Rural Development Department which administered rural water supply and small scale irrigation systems. Other line ministries were in existence but participated more as peripheral players with respect to the water sector.

During the subsequent years of civil strife and unrest in Afghanistan, from the early 1980's to at least 2001, line ministries eventually collapsed. Only non-governmental organizations (NGOs) and United Nations (UN) agencies provided minimal services. Outreach programs were concentrated primarily in rural communities. To be able to function, surviving NGO's had to essentially ally themselves with the systems of governance existing during that traumatic period. Today, seven line ministries and/or GOA agencies have programs that are associated directly with the Water Sector:: 1) the Ministry of Energy and Water (MEW); 2) the Ministry of Agriculture, Irrigation, and Livestock (MAIL); 3) the Ministry of Rural Reconstruction and Development (MRRD); 4) Ministry of Urban Development (MUD); 5) Ministry of Mines (MM); 6) Ministry of Public Health (MPH) and, 7) Department of Environment Protection (NEPA).

MEW is the lead line ministry in the surface water sector and ministry of mines is the lead in underground water resource programs. Figure 1 shows the institutional responsibilities and activities assigned to all of the line ministries actively engaged in water sector activities. In a number of cases, some sub-sector responsibilities are being administered by several line ministries. In particular, sub-sector activities associated with domestic water supply and sanitation are currently being administered by four separate line ministries.

3.5.2 SCWAM and the Technical Water Secretariat

In 2005, the Supreme Council for Water Affairs and Management (SCWAM) was created. SCWAM is chaired by the First Vice President of the Islamic Republic of Afghanistan, and is composed of the following GOA officials: 1) Minister of Energy and Water 2); Minister of Agriculture, Irrigation and Livestock; 3) Minister of Urban Development; 4) Minister of Rural Rehabilitation and Development; 5) Minister of Health; 6) Minister of Mines; 7) Minister of Economy; and 8) Mayor of Kabul

The creation of SCWAM was in obvious recognition of the importance of water, not only to the well being of the people of Afghanistan, but to the development of the national economy. SCWAM is charged with the following mandates:

- To coordinate water related developments and activities of Government institutions.
- Recommend the National Water Sector Development Plans and Strategies for approval by Cabinet.
- Recommend any newly drafted legislation and regulations for approval
- Monitor the implementation of the development plans by the individual member – ministries and agencies.
- Function as a dispute resolution body for disputes related to water between ministries and/or agencies.
- Ensure proper compliance of the Water Law by the member ministries and agencies.

The formation of SCWAM was followed in mid-2005 by the creation of a Technical Secretariat (TS). The TS is composed of experts of SCWAM members, under chairmanship of Water DM of MEW, to prepare advice to SCWAM for decision-making on developments in water sector. The TS would work with and report directly to SCWRM. In this later directive, it was further envisioned that the TS would ensure, as a minimum, that all of the following functions be implemented:

- Obtain all documents relevant to the water sector from the appropriate line ministries and agencies.
- Review and analyze all relevant documents in accordance with approved policies and directives; thus, ensuring the effective use and conservation of water in a sustainable and integrated manner.
- Submit all relevant documentation and recommendation for action to SCWAM for ultimate decisions.
- Collect and compile all relevant data and information obtained from organizations involved with drought, flood control, drinking water supply etc.
- Collect and compile all national and international legal documentation and contracts regarding the water issues.
- Perform all other related tasks assigned to the Technical Secretariat by SCWAM

Figure 1. –Water Sector Institutional Arrangement

The following table summarizes various line ministry and agency responsibilities of those entities directly involved with water sector activities

		Institution	Responsibility
1		Ministry of Energy and Water	In charge of development and management of water resources and water resources infrastructures (diversion and conveyance of water) and hydro-power.
2		Ministry of Agriculture, Irrigation and Livestock	In charge of development and management of irrigated agriculture and livestock, on-farm water management, water application to crops
3	a	Ministry of Urban Development	In charge of policy making and legislation of urban water supply and sanitation
	b	Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC)	In charge of management and operation of urban water supplies in cities.
4		Ministry of Mines	In charge of underground water resources management, survey, Investigation, discovery and development and their control.
5		Ministry of Rural Rehabilitation and Development	In charge of rural water supplies and sanitation as well as small scale irrigation (village level) and rural micro hydro power projects.
6		Ministry of Health	In charge of regulating and monitoring quality of (drinking) water
7		NEPA	In charge of regulating and monitoring any activity related to environment, including water.
8		Kabul Municipality	As representative of the capital it is a member of the SCWAM
9		National Hydrology Committee for Afghanistan (NHCA)	Advisory, research activities and capacity building support to water sector
10		Dehsabz City Development Authority (DCDA)	In charge of feasibility study and design of water supply and discharge systems for the New City at Dehsabz

There are of course numerous line ministries which are not directly involved with water sector activities, but which, through their assigned responsibilities, facilitate the normal functionality of the water sector as a whole. These supportive GOA institutions are delineated in the following table:

Government institutions indirectly involved in the water sector		
11	Ministry of Foreign Affairs	Any issue related to international affairs
	Ministry of Interior	Any dispute on water related conflicts that are referred to this ministry and security measures
	Ministry of Justice	Clarification and elaboration of water law and regulations
12	Ministry of Finance	Proper funding of water sector activities will be of essential importance.
13	Ministry of Economics	Evaluation of the impact of WRD on national economy and prioritization of projects.

14	Ministry of Women's Affairs	Necessary inputs and technical guidance as to how to address women's issues and gender agenda within the water sector
15	Ministry of Counter Narcotics	Funding of projects in the water sector; advisory support and capacity on CN issues and providing input to National Water Resources Development Plan
16	Provincial Governments and Development Committees	Help and support for the establishment of river basin councils according to water law and its regulations and help in their function and activities
17	Ministry of Higher Education	Developing curriculum for WRM, support human resources development in the water sector
18	Meteorological Dept.	Data collection of precipitation
19	Academy of Science	Advice and research for the water sector.

3.6 Water Policies and Legislation.

3.6.1 Background

Throughout Afghanistan's past, governance has generally been vested at provincial, district, municipal, and local levels. Accordingly, natural resources, including the water sector, have also generally been managed at that level. Water resources were typically managed by a Mirab (water master) who was elected by farmers. The Mirab had the power to make key decisions concerning maintenance of irrigation facilities and the distribution and usage of water. The Mirab also provided the necessary linkage between farmers and prevailing governmental implementing entities.

The years of conflict damaged this traditional governance structure, and today governance is not only badly fragmented, but it is often ineffective. This is of great consequence considering that almost 80% of the population lives in rural Afghanistan. Recognizing this plight, there is strong governmental incentive to re-establish local level governance structures by strengthening and legalizing traditional systems which are still functioning properly or by setting-up modified systems with Water User Associations (WUAs). Through these mechanisms, direct stakeholder (community) participation can be re-established and maintained.

3.6.2 Policy Formulations

In 2002 an international conference in Kabul laid the foundation for development of the water sector in Afghanistan. The outcome of the conference, also known as the Kabul Understandings, has been used in the formulation of different policies in the sector. The main policy guiding the water sector is the Strategic Policy Framework for the Water Sector, approved by the Supreme Council for Water Affairs Management (SCWAM) in November 2006 (1st draft 2004). It describes the way forward in the water sector and points out specific policies, laws, regulations and procedures to be formulated:

- Revision of the approved Water Law of 1991
- Water Resources management Policy and Regulations
- Institutional framework for water resources management;
- Irrigation Policy and Regulations
- Regulations for Water User Associations
- National Urban and Rural Water Supply and Sanitation Policies and Institutional Development;

- Groundwater Policy;
- Hydropower Development Policy
- Environment Law.

The Environment Law has been approved by Parliament in January 2007, while some of the the above mentioned policies have now been approved by SCWAM as national policies and remaining are under discussion.

The Strategic Policy Framework for the Water Sector (approved as national policy) and the revised Water Law (approval in progress) will be guiding the sector. The details are described in specific policies/plans on water resources management, irrigation, urban water supply and sanitation and urban water supply institutional development, rural water supply and sanitation and ground water development. Eleven separate regulations have been identified as being needed for proper implementation of the revised Water Law (Additional regulations might be required.). Four out of these eleven have already been drafted:

- Establishment and Management of River Basin Councils, Sub-basin Councils, River Basin Agencies and Sub-basin Agencies;
- Establishment of Water User Associations;
- Declaration of River Basins and Sub-basins; and
- Permits and Licenses.

The remaining regulations are still pending and are dependent upon revisions within the drafted water law. Official adoption of these regulations and their application is compulsory for proper progress in the sector.

In addition to these legislative needs, there is a need for political will and commitment by the Government to introduce and enforce the regulatory frameworks. In particular, in the case of non-compliance, to avoid any protraction of conflicts between various water users in the water sector and to mitigate against any deterioration in the natural and social environment.

In drafting Legislations, the principles of the Government’s “Integrated Water Resources Water Management” will be applied, including one that states: Women are key partners in water management.

3.7 Donors and Partners

Following is a list of those partners most active in the Water Sector, along with an explanation of how their roles and contribution are impacting Water Sector Strategy

International Partners		Specific roles and contribution
1.	World Bank	Administering ARTF, and through direct contribution supports numerous water sector projects and consultancies, capacity building, irrigation rehabilitation, urban water supply and rural development. World Bank support given to numerous sectors and activities is contributing extensively to the goals of the water sector.
2.	European Commission	Support to Kunduz River Basin Program and the Amu Darya (Kokcha-Panj) River Basin. These are pilot IWRM programs. Support given to the NSP (MRRD)and other rural development projects also contributes to the water sector’s goals .
3.	ADB	Extensive support given to natural resources and transportation

		sectors, including significant inputs given to the agricultural sector.: Western Basins and Balkh River Basin Projects are also pilot IWRM projects
4.	FAO	FAO studies on agriculture and water resources as well as consultancy support and capacity building contribute extensively to the development of several Afghan sectors. FAO has played a long term vital role in the development of the Afghan economy.
5.	GTZ	Provides institutional and legislative developments to the water resources management sector. GTZ also supports the institutional strengthening of Kabul, Herat and Kunduz Water Supply. Micro-hydropower (and renewable energy) are fields GTZ provides support, too.
6.	KfW	Financial support to the rehabilitation and upgrading of water supply systems in Kabul, Herat and Kunduz. Financial support is also provided to micro-hydro installations.
7.	USAID	Support to domestic urban and rural water supply and sanitation, hydropower, RAMP, Kajakai hpp, Helmand, LBG, IRD, DAI water projects, and capacity development
8.	Japan (JICA)	Feasibility studies of different water resources and contribution to NSP. WRM activities in Balkh through ADB are also funded. Study of water supply and discharge for Kabul Metropolitan Area and preliminary design of water supply and discharge systems for the New City at Dehsabz.
9.	Indian Government	Construction of Salma Dam, rehabilitation Amir Ghazi and Qargha Dams and some of future feasibility studies. Capacity building.
10.	Iranian Government	Support to capacity building and construction of research institute in MoEW. Technical assistance
11.	UNESCO	Assistance through their international hydrology program (IHP) to the preparation of a National Water Resources Development Plan and support to NHCA. Capacity building.
12.	International NGOs	Experience of international NGOs can significantly contribute to the developments in the water sector from national to field level.
13	CIDA	Contributions to NSP, co-funding of Western Basin. Dahla dam
14	DfID	Contributions to NSP
15	Denmark	Contributions to NSP
16	Norway	Contributions to NSP
17	UN-Habitat	Support to MUD
18	UNICEF	Support to MRRD, MoE, MPH, NGOs: advocate and promote better hygiene practice; support provision of safe drinking water and sanitation facilities to families, schools health centers and at communities; provide safe water and sanitation during calamities; support displaced and returnees.
19	SIDA	Conducting educational capacity development programs, Shamalan canal.

20	China	Funding and implementing Parwan irrigation project .
21	IDB	Support to the development of the Western River Basin.
22	USGS	Support MM with research in groundwater quality

3.8 National and International NGO’s and the Private Sector

NGOs can play a significant role in the development of the stakeholder participation in water resources management, especially at “field” level. Due to their presence during the years of civil strife and unrest, NGOs have maintained close working contact with virtually all rural communities and their services could be readily broadened to instruct and/or coach functioning CDCs/WUAs with water usage techniques and conservation programs.

Currently there are approximately 1100 national registered non-governmental organizations (NGOs), and 300 international NGOs (INGOs). These organizations are dispersed throughout the Provinces, and enjoy a close working relationship with Afghanistan’s rural communities. NGOs therefore play a very vital role in developing stakeholder participation in water resources planning and management. NGO services could also be quite readily broadened to facilitate having Community Development Councils (CDCs) and even Water User Associations (WUAs) provide effective water conservation techniques and associated water management programs to water users.

The Water Law provides significant opportunities for “end-user” participation in decision making relating to 1) water resources, planning, implementation and management ; 2) operation & maintenance of water supply systems and services; and 3) determinations of water use allocations.. All rights of “end-users” in these processes are described in the Water Law. National and International NGOs will be able to support the participation of “end-users” through appropriate training and capacity development programs

The water law encourages stakeholder participation in IWRM planning and management processes. This participation can take different modalities according to the level at which actions take place and decisions are made. Participation is especially important at project level where water user problems can be more readily resolved. Institutions should therefore be able to integrate stakeholder needs and concerns into a common shared approach; thereby facilitating a partner relationship. This type of relationship not only expedites project execution, but tends to carry over into subsequent project management and provides an excellent platform for implementing water conservation.

Private sector participation is also encouraged. However, where public services are concerned, private sector participation is best served by first having strong institutions and a comprehensive regulatory framework in place. Where regulations are limited or unenforceable, transfer of services to the private sector may be impractical or undesirable.

3.9 Universities, Colleges and other Training Providers

For the development of appropriate degree and diploma curricula and skills training programs pertaining to water sector related subjects (WRD, WRM, WSS, water quality, etc) cooperation between Ministry of Education, MEW, MAIL, MM, MPH, NEPA , Universities, colleges and training institutions is required. It is essential to merge scientific theory with empirical and/or practical knowledge. It is also necessary to develop “practically-oriented” graduates, technicians and skilled personnel that respond to relevant needs of the sector.

3.10 Conclusions

From the context the following general problem areas have been identified::

1. Institutional set-up
 - Present institutions in the water sector are fragmented, poorly coordinated or organized. No clear delineation of responsibilities between institutions exists.
 - Water Sector activities are currently diffused and fragmented and consistently are divorced from adequate environmental management.
 - The delivery of water services is typically viewed as being centralized in governmental organizations and agencies that are dealing with a deteriorated infrastructure and operating at extremely low efficiency.
2. Human Capacity
 - The Water Sector is impaired by a shortage of adequately experienced and trained staff and an inequitable gender balance.
3. Information
 - Water Sector is hindered by a lack of adequate and reliable hydrological, meteorological, geo-technical and water quality data, as well as information on socioeconomic characteristics and indicators of water use efficiencies and, in general, by an absence of reliable indicators for use as a basis for resolving implementation problems.
 - A lack of communication and transparency and openness on information exchange between ministries is noted.
4. Legislation
 - There is a lack of effective governance mechanisms
 - There is a current lack of rules and regulations for monitoring and enforcing pending legislation, particularly in the rural communities.
5. Integrated planning and priority setting
 - The present lists of projects in the water sector are all focused on the different line ministries' mandates: impacts (pro and con) of projects on each other are not considered.
 - Water management is an integral part of poverty reduction and increasing employment.
 - It is important to improve economic mechanisms regulating water use and to promote attraction of investments for rehabilitation of water supply and sanitary systems.
 - It is important to improve the population's access to clean drinking water and sanitation in compliance with the Millennium Development Goals (MDG).
 - At present, donors are mainly showing interest in small, emergency projects. Lack of updated pre-investment studies is withholding interest in large infrastructures.
 - There is a high rate of both urbanization and returning refugees, both of which are bringing new and frequently unique problems to the Water Sector.
 - Continued urbanization and general economic development of the country should be accompanied by proportionate development of water supply, sewerage, and waste disposal.
 - There is a lack of "shared vision" on river basin plans and limited financial resources for all proposed projects.

Water plays an important role in economic, social and environmental development. Water sector management and development is a central component of national development and included given focus as one of the important sectors in the National Development Strategy (ANDS).

IV OVERALL STRATEGY FOR THE WATER SECTOR

4.1 Strategic Vision Statement.

Strategic Vision

To manage the Nation's water resources so as to reduce poverty, increase sustainable economic and social development, and improve the quality of life for all Afghans and to ensure an adequate supply of water for future generations.

Goals:

To improve the livelihoods of the Afghan people of present and future generations by providing:

- better access to safe drinking water,
- enhanced household food security,
- protection from the negative effects of droughts and floods,
- sustainable development and management of water resources,
- mechanisms for facilitating more effective user participation,
- support to poverty reduction and private sector development,
- Effective services for efficient water use in all sectors so as to facilitate economic growth and social development.

Afghanistan Constitution

Article 9: Protection, management and proper utilization of public properties as well as natural resources shall be regulated by law.

MDG Goals

Goal 7: Ensure environmental sustainability:

Targets: *Halve, by 2020 the proportion without sustainable access to safe water and basic sanitation*

4.2 Afghan Compact Benchmarks

Key Water Sector benchmarks established in the Afghan Compact Agreements are transcribed below:

Benchmark 1:

Water Resources Management

Sustainable water resource management strategies and plans covering irrigation and drinking water supply will be developed by end-1385, and irrigation investments will result in at least 30% of water coming from large waterworks by end-1390.

Benchmark 2:

Urban Development

By end-2010: Municipal governments will have strengthened capacity to manage urban development and to ensure that municipal services are delivered effectively, efficiently and

transparently;

In line with Afghanistan's MDGs, investment in water supply and sanitation will ensure that 50% of households in Kabul and 30% of households in other major urban areas will have access to piped water.

Benchmark 3:

Agriculture and Livestock

By end-2010: The necessary institutional, regulatory and incentive framework to increase production and productivity will be established to create an enabling environment for legal agriculture and agriculture-based rural industries, and public investment in agriculture will increase by 30 percent; particular consideration will be given to perennial horticulture, animal health and food security by instituting specialised support agencies and financial service delivery mechanisms, supporting farmers' associations, branding national products, disseminating timely price and weather-related information and statistics, providing strategic research and technical assistance and securing access to irrigation and water management systems.

Benchmark 4:

Comprehensive Rural Development

By end-2010: Rural development will be enhanced comprehensively for the benefit of 19 million people in over 38,000 villages; this will be achieved through the election of at least a further 14,000 voluntary community development councils in all remaining villages, promoting local governance and community empowerment; access to safe drinking water will be extended to 90% of villages and sanitation to 50%; road connectivity will reach 40% of all villages, increasing access to markets, employment and social services; 47% of villages will benefit from small-scale irrigation; 800,000 households (22% of all Afghanistan's households) will benefit from improved access to financial services; and livelihoods of at least 15% of the rural population will be supported through the provision of 91 million labour days.

Benchmark 5:

Environment

In line with Afghanistan's MDGs, environmental regulatory frameworks and management

services will be established for the protection of air and water quality, waste management and pollution control, and natural resource policies will be developed and implementation started at all levels of government as well as the community level, by end-2007.

Policy Framework

The Strategic Policy Framework for the Water Sector approved by SCWAM in November 2006, which was in turn developed as a result of an international conference on water sector in Afghanistan,

recommends that the following policies, laws, regulations and procedures should be developed in order to move forward in the development of the water sector

- Revision of the approved Water Law of 1991
- Water Resources management Policy and Regulations
- Institutional framework for water resources management;
- Irrigation Policy and Regulations
- Regulations for Water User Associations
- National Urban and Rural Water Supply and Sanitation Policies and Institutional Development;
- Groundwater Policy;
- Hydropower Development Policy
- Environment Law.

4.3 Water Resources Management Plan

4.31 Integrated Water Resources Management

To implement the Water Sector's Vision Statement, the GOA has adopted the **Integrated Water Resources Management (IWRM)** approach for planning and developing its water resources.

Commonly accepted expectations embodied in the adoption of IWRM are the following:

- Water resources management is to be undertaken in a holistic, integrated and sustainable manner.
- Satisfactory management of upstream through downstream water user interests
- Satisfactory management of both surface and ground water quantities and quality;
- The environment, including preservation of forestry, fisheries, and bio-diversity, is to be incorporated as a water user and stakeholder.
- Equitable allocation of water for social, environmental and economic needs.
- Water is a public good; no individual or private ownership is allowed.
- Water services will be provided by autonomous and accountable public, private and/or cooperative agencies.
- Women are key players in water management.
- There is a discernable enhancement of water governance by
 - a. Mobilizing stakeholder participation
 - b. Inducing social interaction through establishment of effective institutions
 - c. Providing equitable water resource allocation
 - d. Developing mechanisms for conflict resolution
 - e. Identifying trade-offs or compromises

Effective implementation of IWRM requires

1. A positive enabling environment through

- Effective water policy
 - Actualized legislation
 - Conducive financing and incentive structures
 - Ability to provide cost recovery through cost sharing
 - Established water use rights
 - Well defined responsibilities of the central government institutions, river basin organizations, provincial and local governments, water user associations, service providers, and the private sector, et all.
2. Well defined river basin institutional responsibilities; and
 3. Effective workable management instruments through
 - A capable river basin organization
 - Institutionalized stakeholder participation
 - Capable monitoring and evaluation

4.3.2 River Basin Management Institutional Structure

A river basin organization approach has generally proven to be an effective vehicle for establishing IWRM strategies. Often these organizations can serve as incentive-based participatory mechanisms. They can be particularly useful in allocating water between users and in mitigating or resolving conflicts.

The above figure shows a four tiered institutional set-up which has generally been employed for water resources management.. At the uppermost level is SCWAM and its delegated line ministries and responsible agencies. These will constitute the national institutional bodies. Basin and catchment organizations are at mid-level, and at the bottom or lowermost level are the water users and related stakeholders.

The natural boundaries of the major river basins will be used to define the areas for the planning and institutional development of water resources management. Five main river basins have been identified for the future introduction of the river basin management set-ups, Depicted on Exhibit 1, these are the following:

- the Amu Darya River Basin,
- the Northern River Basin,
- the Harirod & Murghab
- the Helmand River Basin and
- the Kabul River Basin.

River Basin and Sub-Basin Councils with representation of Water User Associations and other stakeholders, including women, will allow a high degree of community participation, while the national bodies will provide the necessary support and know-how through the River Basin Agencies. A separate cross-cutting water management council will also be established for the New City of Dehsabz with the responsibility of coordinating all water source management across the river basins that feed the project.

As long as the proposed institutional framework has not been established in the river basins, the guidance of the management of natural and human resources will be continued through the present provincial and district offices of the relevant ministries. Traditional shuras and mirabs as well as

already established water user associations will continue their resource management activities at the end-user level.

Establishing river basin organizations can perhaps serve to coordinate the actions of several overlapping national and provincial organizations. Their creation can promote the role and responsibility of various interest groups existing within each basin. They can also greatly facilitate problem solving and user coordination. Their adoption and implementation should be undertaken in a progressive manner.

4.4 Domestic Water Supply and Sanitation

4.4.1 Current Situation

Despite advances in water supply and sanitation since 2002, the majority of the people of Afghanistan still lack access to a safe drinking water supply and access to adequate sanitation. The poor, situated in rapidly growing urban peripheral / unplanned areas, rural settlements and the margins of small and medium-sized towns and cities are especially vulnerable. The development within these areas is often neglected. People, meeting their drinking water needs from natural sources, have their health at constant risk from waterborne diseases. Furthermore, women and girls in particular have to shoulder the considerable physical and time burden associated with fetching water from natural sources. Wastewater and human excreta from sewers, cesspits and people defecating in the open air further impair the living environment and the water supply of the poor.

Adequate drinking water supply, basic sanitation, proper wastewater disposal and effective waste management are the key prerequisites for promoting healthy life conditions. They prevent many of the diseases which impair quality of life, impose financial burdens on households and limit their income-generation opportunities.

Access to safe drinking water and sanitation, among the rural population is the lowest in the region and among the lowest in the world. For example, access to improved drinking water sources in urban areas reaches approximately 31% of the country's population but access drops dramatically in rural areas. (See Annex III.2 for more details) Estimates suggest that 4 out of 5 Afghans in rural areas may be drinking contaminated water and only 10% of rural population have access to improved sanitation.

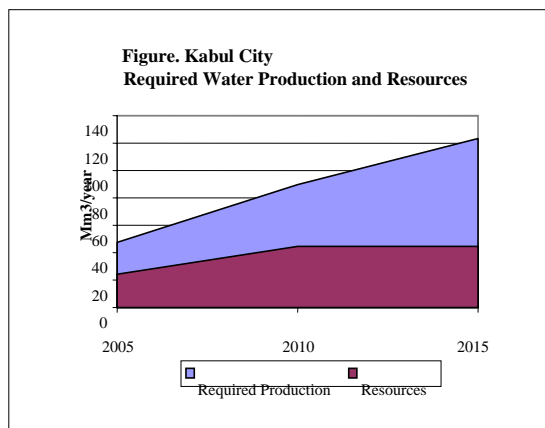
Microbial contamination of water resources by domestic wastewater has increased substantially. There is also contamination from fertilizers and pesticides used in agriculture. Increasing pollution is also accelerating the degradation of ecosystems (e.g. loss of biodiversity). Unless coupled with wastewater management and (on-site) sanitation, the urgently needed expansion of water supply systems can worsen the already problematical hygiene conditions at local level, while freshwater resources and aquatic ecosystems are put at risk from the increase in the volume of waste water. In many cases, the available financial resources are inadequate, and investments in wastewater management and the operation of water treatment plants are not a political priority.

A survey in Kabul City, conducted by BGR and AGS in 2004-2005, showed that approx 50% of the wells were contaminated. The surveyed wells were located at different places in Kabul. A similar situation is expected in other major cities.

Groundwater is still considered the major source for drinking water and both rural communities and urban areas are relying more and more on the extraction of groundwater to serve their purposes. Randomly, uncontrolled drilling of boreholes without proper information on the hydro-geology and quantitative and qualitative situation of the groundwater contributes to depletion of the groundwater table and the use of un-sound technologies harms to the groundwater resource. Lowering of water tables has detrimental effects which are already in evidence. Replenishment of groundwater reserves will be a key element in the water sector strategy.

4.4.2 Urban Water Supply Goals

Considering the MDGs with regard to access to safe water and the NRVA, considerable attention will be given to the provision of safe water. With a depleting groundwater table the focus will shift to surface water as another resource for providing safe water, especially for larger supply systems.



For example, the adjacent figure shows supply and demand projections for groundwater resources for the existing city of Kabul. These projections show a substantial gap between the the demand for water and supply of groundwater. Demand is based on estimated population growth and planned extensions to the distribution network. Supply is based on the present exploitation of groundwater resources and proposed expansions of those well fields. Supply can only cope with an increased demand till 2012, based on a consumption of only 40 l/capita/day. As no reliable alternative groundwater resources have been identified, the focus will shift to surface water as the potential new resource for Kabul Water

Supply. Under an agreement signed in December 2007, JICA is to undertake the study of water supply and discharge for Kabul Metropolitan Area and preliminary design of water supply and discharge systems for the future New City at Dehsabz. This will help making decisions on the alternative surface water resource for Kabul Water Supply to ensure a proper continuous supply of water in the years ahead.

4.4.3 Rural Water Supply Goals

In the rural areas, groundwater is the main resource for safe water. With a depleting groundwater table and the MDGs in mind there is an urgent need to use bore hole drilling techniques to ensure water supplies are sustainable and aqua-flow levels are not reduced (i.e. decline in the water table impacting on groundwater reserves) with a negative impact on long term water accessibility. The operation and maintenance costs for rural water supply needs to be recovered from rural communities in order to ensure these supplies are sustainable. Rural water supply is needed for many of the agro-processing requirements.

There is a very important health related dimension to access to clean non-contaminated water, an important factor with respect to maternal mortality rates, children’s health and child mortality rates. Lack of water affects women disproportionately in a unique way since they are the main managers of household water use. However, this aspect of water policy is often neglected and there needs to be explicit policies, mechanisms and targets to meet the needs of women.

4.4.4 Sanitation

Generally, people in urban areas use unsanitary toilets that became serious health hazards to public health. There is a need to develop suitable technological options and strategies to make them sanitary and environmental friendly. There is a need for a programmatic approach to achieve this. Further, the open drains are not well connected and leave pools of liquid waste causing major problems. Most cities need rehabilitation of existing network of drains and proper disposal systems.

The situation in the rural areas is even worse. Only the improved latrines and flush toilets are considered safe sanitation and less than 10% of the rural households have access to safe sanitation.. Improved access to sanitation and safe drinking water is urgently needed for the well-being of the rural population.

4.5 Industrial Water and Wastewater Disposal

4.5.1 Current Situation

Besides food security, the availability of water is an important basis for all other productive activities. Water is essential for commerce, mining and industry, where it is used as a medium (e.g. as a solvent), coolant or mode of transport in most production processes. Water is also an important resource for energy production, especially via hydropower plants. Hydropower is likely to become increasingly important in the context of the climate change debate, as it is a cheap renewable energy resource, which generally causes far fewer negative environmental impacts than other energy sources in Afghanistan. Most industries have their own water supply or are connected to an urban network. No quantitative and qualitative data on water use and waste water disposal from industry are available at present..

4.5.2 Development Goals

With the planning of 17 new industrial parks a sharp increase in demand can be expected at the locality of each park. Estimates of demands are urgently needed, to anticipate a proper resource for the parks without harming other resources already in use nearby, such as house or community wells. In addition a full assessment of the water demands of the New City (Dehsabz) is required in order to confirm sufficient supply and management capacity.

Irrigation

4.5.3 Benchmark Clarification

Benchmark 1 requires clarification concerning the definition of large works. Classification of large works under the Afghan Compact (AC) is considered to be engineering structures which are able to supply water to more than 5000 Ha. For the monitoring of AC benchmark progress the following indicators have been formulated.

Primary indicator	Secondary Indicators
Total area under irrigation (Ha).	1. Irrigation capacity (nationwide) from large works in existing systems increased. (Ha)
	2. Irrigation capacity (nationwide) from large works acquired through new systems (Ha)

Remarks: The primary indicator does not just refer to the physical infrastructure, but also to the real use of that water.

4.5.4 Current Situation

The term “water for food“denotes water that is used in agriculture in order to feed the growing population. In the broadest sense, it comprises all types of land use which consumes water for food production and income generation, including rain-fed and irrigated agriculture, livestock farming, forestry and aquaculture. Agriculture alone accounts for approximately more than 90 percent of the water consumption. However, the efficiency of water use and its economic importance are low: in many cases, water loss amounts to more than more than 50 percent, and the amount of water withdrawn is grossly disproportionate to the share of economic added value created. As water demand intensifies and climate change increases, the need for action in this area is likely to become more acute.

More than 15% of Afghanistan’s irrigated land derives water from traditional groundwater sources such as karezes, springs, and shallow well systems called Arhads. Karezes are underground systems

which tap groundwater by gravity from an aquifer for purposes of irrigation and domestic water supply. Today, about 60% to 70% of the karezes and 85% of the existing shallow wells are not yielding water adequately, and the populations dependent upon them are in desperate circumstances. Low precipitation accounts for their low yield. However, this situation is being aggravated by the sinking of deep tube wells in proximity to traditional systems. The latter impacts the yield from traditional system aquifers. In most urban areas where this is happening, the poorer segments of the population are being placed at risk from being denied access to traditional sources of water supply.

4.5.5 Development Goals

Despite the significant input in the rehabilitation of existing irrigation schemes by on-going projects, there is still an enormous need for expansion of the irrigation supply through continuous rehabilitation and improvements of existing systems as well as by developing new irrigation schemes, including large works. Not only physical works, but also improvements in on-farm water management, distribution to crops and alternative crops and irrigation technologies should be considered – as small-scale irrigation schemes are rehabilitated there should be community based discussions to determine the options for different agricultural systems/crops to be introduced. Introduction of high value crops to compete with poppy should be demonstrated and promoted. By aiming to reach benchmark 1 (2nd part) the focus should not only be on physical infrastructures; in-field developments to use the water from those infrastructures should go hand-in-hand. There is a need for a “social compact” with farmers that rehabilitated irrigation facilities will only be used for legal crops; incorporation of such compact in the constitution of a water user association should be considered.

At present an estimated 1.8 million Ha of land is under irrigation command; 300 had of land irrigated from engineered systems and large works, the remaining is traditional irrigation.

4.6 Hydropower

4.6.1 Current Situation

In 1993, Afghanistan’s total installed electrical capacity was approximately 454 MW, of which about 281 MW was contributed by various hydroelectric projects. Most hydroelectric generating plants were situated in relatively close proximity to Kabul. Similar to most infrastructures throughout the country, during Afghanistan’s problem years, a majority of the generating plants fell into disrepair. Generating output capacity steadily declined. It was only through the ingenious capability of the operating staff, that plants were able to run at all. Present production capacity of hydro power plants (Mahipar, Naghlu, Sarobi, Kajaki) in Afghanistan is about 250 MW.

At the time of national reconstruction, assessments were initially undertaken to determine the extent of restoration required. Slowly, and primarily through the assistance of international funding agencies, hydro project rehabilitation programs were inaugurated. Concentration was on repairing, replacing and where possible, upgrading associated electro-mechanical components. Right at the beginning of this same period, a detailed master plan was prepared to guide the immediate expansion needs of the electric sector (20-year time frame). This plan filtered out all known multipurpose projects, concentrating solely on the adoption of known power projects so as to avoid inter-ministerial turf battles.

4.6.2 Development Goals

The expansion of the electric sector will begin by implementation of the Baghdara Hydroelectric Power Project. This 280 MW project is situated in the Panjshir River gorge. Optimistic predictions cited November 2011 as the initial commercial operation date for this project. Feasibility studies are underway, and a Definition Report has already been prepared by the Consultant engaged for the study. Baghdara has the potential to serve the power and drinking water needs of the future New City at Dehsabz. Major hydroelectric projects can however take several years to be processed through the necessary design elaboration phases.

In principle, rural areas are often much too remote for connection to the national electrical grid. Micro-hydropower plants in areas with sustainable water resources can therefore function as effective alternatives to provide electrification to rural areas. Power generation facilities constructed within irrigation schemes can also sometimes become viable alternatives. In terms of rural infrastructure development, a combination of rural water supply and the generation of electricity through a sustainable source of water using micro hydro will contribute to the counter narcotics efforts through strengthening the options for alternative livelihoods.

Hydropower development strategy will focus on the following:

- Hydropower should be given greater development emphasis, not only to enhance the energy sector, but to benefit the environmental sector and water sector in general.
- Improve inter-connections to increase the reliability of energy production.
- Improved energy planning and associated investment policies.
- Place greater emphasis on multipurpose projects to augment irrigation requirements.
- Renovate and modernize all existing operating projects.

4.7 Environment

Ecosystems are reliant on adequate water quantity and quality. They play a key role in the hydrological cycle and form important natural reservoirs such as wetlands, forests and lakes. Ecosystems transform water into life and absorb parts of the hydrological cycle, which are then no longer available for human use. The feedback effects of forests and afforestation on erosion, mudslides, flooding and precipitation vary according to climate, geology and geomorphology, water catchment size, etc. In practice, it is clear that the environment often carries little weight in negotiating processes on inter-sectoral resource allocation. As a rule, it is the poor who suffer most from environmental pollution and who are most directly reliant on environmental services. In calculating the hydrological balance in research and politics, too, the water requirements of natural ecosystems are often ignored.

The recent years of conflict and poor water management have seriously degraded many of the wetlands and made it difficult or impossible to make improvements to infrastructure or to integrate uncoordinated local schemes into a coherent national strategy for water. As indicated below, wetlands are a necessary aspect for both the physical rehabilitation of water resources as well as an important feature for social management structures and programs included in the strategy. Issues to be seriously considered are:

- Desiccation of wetlands with accompanying loss of vegetation
- Soil erosion and movement of sand, dust and sediments into irrigated areas, irrigations canals and lakebeds
- Loss of agricultural land
- Change in flora and fauna of the wetlands
- Increasing and uncoordinated water extraction
- Ground water salinity
- Pesticides residues in wetlands

4.8 Natural Disasters

Extreme flood events pose a danger not only to people and infrastructure but also to cultural property and environmental resources. Flooding can claim thousands of lives, cause epidemics, destroy investment in infrastructure, and thus impact severely on economic development. However, countries

whose economic and social development is heavily dependent on agriculture will be partly reliant on fertile floodplains for food production and poverty reduction. The frequency and variability of extreme flood events are changing. This is due, among other things, to large-scale deforestation, sealing of soils and climate change. Population growth and the ensuing settlement of new areas as well as urbanization are increasing the numbers of people at risk from flooding, thus contributing to greater vulnerability and potential damage.

4.9 Human Capacity Development

In general, a lack of sufficient capable staff to plan, design and implement projects is assessed within all the ministries in the water sector, in particular with regard to the new approach of integrated management of water resources and river basin planning, development and management. Most staff trained before and during the Soviet occupation have left the country and did not return, while others who returned have mostly been absorbed by the private sector, by international organizations or NGOs.

The coordinating role of the Supreme Council for Water Affairs Management needs to be strengthened. Although a technical secretariat for the SCWAM has been established and is functioning, there is an urgent need for a pool of sufficiently experienced technical and economical experts to review and prepare documents, monitor the process and inform and advise stakeholders in the public and private sector on relevant issues concerning the policies and regulations in order for the plans to be implemented and observed effectively in the future. Also, its institutional set-up needs urgently to be decided upon.

There is also a lack of social-anthropological understanding, analyses and experience under engineers and other technical staff in the ministries in the water sector. Consideration needs to be given to the recruitment of a Social Gender Advisor or special training of technical experts and other staff in this area. . Efforts will be made to redress the inequitable gender balance in the water sector human resources.

4.10 Information Gathering

Fundamental to river basin planning is having a database of historical information. Having this database also facilitates continual monitoring and evaluation of climatology. The re-construction of the hydrometric network has recently been started. Improvement on meteorological information gathering is also required and construction of additional weather stations is also foreseen in the near future. Any information on water and water related activities/projects, available in the individual member ministries of SCWAM, need to be made available for a central database for water resources planning, development and management. Although the central database and the operating and analyzing experts will be stationed in MEW in the section of surface water and in the section of underground water in ministry of mines, the use of the data will be under the supervision of SCWAM.

V. PRIORITY POLICIES AND OBJECTIVES.

5.1 General

The following are fundamental for proper planning and sustainable development/investment in the water sector:

- Proper **human capacity** at all levels of the water sector within government as well as within private sector;
- Functional **water sector institutions** at national, river basin and sub-basin level; and
- Up-to-date **water sector information**.

In the implementation of the strategy program, these key-areas should be given highest priority. However, within these three areas, additional priority selections will also need to be made. Concurrent with focus on these key areas, physical development of water resources/projects and infrastructure should be continued.

Experience in other countries has demonstrated that the building of infrastructure is itself not an effective approach in isolation. Construction must be augmented by the enhancement of both institutional and financial capacity in a **parallel approach**. Activities conducted in the field are similarly used as (training) tools for capacity building as well as the development of new institutional set-up. The **progressive introduction** of management – slowly building-up new institutional set-ups, mainly as components of on-going or new projects/programs – also increases effectiveness.. The planning, design and implementation of infrastructure are used as tools for the setting-up of the institutional components like river basin and sub-basin councils, or river basin and sub-basin agencies, and the participation of the end-users. The new water law endorses this approach.: *“When the Ministry judges the councils and agencies are capable of taking their legal responsibilities, these responsibilities will be delegated to those new institutions”*. Special attention will be paid to the social water management activities of the on-going river basin programs to assure proper establishment of water user associations. Their experience will be employed in the drafting of additional national and local regulations. In summary, the overall strategy for achieving the expected results will be to adopt a **parallel and progressive approach** for the introduction of IWRM in the country. Simultaneously, responding to the immediate needs of the people by rehabilitating and improving drinking water supply and water resources infrastructure / irrigation schemes.

Information gathering and building capacity to analyze / interpret the information is another priority area. Special attention should be given to the rehabilitation of the hydro-meteorologic network as this data is of crucial importance for future planning and development of water resources. In addition, information on water quality, geology/geomorphology, socio-economics, and environment need to be gathered. This data is required for efficient integrated strategic development and investment plans in each of the river basins. With priorities established, a realistic roadmap can be developed for building capacity in the public water sector and for facilitating private sector participation in water sector development. Priorities set in the strategies of the individual ministries will also be reflected in the specific river basin development/investment plans. Benchmarks, indicators and targets need to be mutually agreed upon in order to streamline activities and relate them to the development objectives of the ANDS.

5.2 Implementation Procedure

Implementing the following steps will be of crucial importance to create the new institutional set-up and gradually transfer responsibilities to the River Basin Councils and Agencies.

- Approval of revised Water Law by cabinet and parliament.
- Coordination with other stakeholders in the public sector (Ministries related to water resource management, NEPA etc.***) and agreement on how to implement the new administrative structure of the natural resources sector based on the River Basin approach (natural river basin boundaries for all aspects of natural resources management and planning instead of the administrative provincial and district boundaries).
- Delineation of Sub-basins within each river basin with Sub-Basin Agencies representing the River Basin Agency.
- Progressive establishment of a River Basin Agency in each river basin with administrative, advisory and executive tasks related to irrigation, water resources and infrastructure management (the present provincial and district irrigation offices as well as the regional PCU offices of EIRP will become part of the River Basin Agencies).
- Election of representatives for Sub-Basin Councils by water user and other stakeholder organizations.
- Nomination of Sub-Basin Council representatives by members to form the River Basin Council to which decision-making powers will be given by the revised Water Law.
- Draft, review and approve proposed regulations for the Water Law.
- Draft policies to reduce vulnerability to climate change risks and to mitigate against droughts & floods

5.3 Desired outcomes

Overall Water Sector Strategic Outcomes

- Improved water sector legal and governance structures and institutions in place
- Sustainable water resource management strategies and plans covering irrigation and drinking water supply developed and implemented.
- Water resources for drinking and irrigation purposes improved as well as poverty reduction and employment creation.
- Infant mortality decreased and life expectancy increased as result of higher access to clean water. For details refer to Annex I (Action Plan).

5.3.1 Short Term Objectives

In the short term the following outcomes are expected:

- Approval of the revised Water Law (spring 2008) and Regulations (mid 2008). Chapter 5 of the Environment Law deals with water sector activities; wherein it is stipulated that all major Works requires an environmental impact assessment (EIA), and where appropriate a Sociological Impact Assessment (SIA) should also be conducted.
- Establishment of new institutions for water resources management and urban water supply management
 1. Kunduz River Sub-Basin – 3 sub-basin councils and sub-basin agencies (spring 2008)

2. b. full Amu Darya River Basin – 3 additional sub-basin councils and sub-basin agencies and one river basin council and river basin agency (spring 2009)
 3. Balkh sub-basin institutions (2009)
 4. Western Basin Institutions (2010)
 5. AUWSSC (spring 2008)
 6. Two SBUs functional (spring 2009) (see short-term plan UWSS)
- Hydrometric network installed and operating (2007-08); data collected, processed and information services effectively provided to users, a basin water allocation/distribution planning procedure established and drought/ (snow melt) flood forecasting system developed (2008 onwards).
 - Environmental regulatory frameworks and management services established for the protection of air and water quality, waste management and pollution control, and natural resource policies (spring 2008)
 - Water User Associations based on traditional Mirab system have been formed by water users and participate in all aspects of planning and management of the water resources in their area through the proposed river basin management institutions (River Basin and Sub-Basin Councils). – (2007 onwards)
 - River Basin Management Plans prepared for basins with functional river basin institutions in place. - (2008 onwards)
 - Construction of 53 600 wells in rural areas (2007-2009)
 - Water use studies for Dehsabz New City and integrated water usage and management concept of operations completed by 2010.

5.3.2 Intermediate Term Objectives

As mid-term outcomes (2013) are expected:

- Capacity building in different Ministries in the water sector and new management institutions in full swing – starting in 2007 and in 2010 70% of staff properly trained, including an improved gender balance at all levels of staffing.
- New resource for Kabul Water Supply fully operational in 2013
- A total area of 2,534,000 Ha under irrigation, including the control of water distribution, e.g. headwork's for water control provided in schemes representing totally 80% of the total water use.
 1. water provided by small and medium works -- 1771 000 Ha
 2. water provided by large works -- 763 000 Ha (= 30% from large works)
- Improvement / extensions of urban water supply networks to provide access to piped water to 50% of households in Kabul, and 30% of households in other main urban centres
- Revitalize the existing IWRM structure of the Helmand Arghandab Valley Association (HAVA).
- Expanded new management institutions in water resources management and urban water supply:
 2. Northern River Basin institutions (2013)
 3. UWSS Regulator appointed (2013)
 4. UWSS 4 additional SBUs functional (2013)

- Access to safe drinking water is extended to 90% of villages and sanitation to 50%.
- 47% Of villages benefit from small-scale irrigation.
- Construction of an additional 54791 well points and rehabilitation of non-functioning water points.
- Monitoring & Evaluation Units established in the Ministry and River Basin Agencies providing information to management and donor agencies.
- National Water Resources Development plan prepared, indicating options for potential dams, storage reservoirs for multi-purpose use, resources available for drinking water supply, irrigation expansion and improvement in efficiency and effectiveness of water use. Feasibility studies, presently undertaken, should become part of this plan.
- Integrated Dehsabz water management infrastructure in place by 2015

5.3.3 Long Term Objectives

Long-term desired outcomes (year 2023).

Results as well as experiences and lessons learnt from the short and mid-term desired outcomes will contribute to these long-term desired outcomes.

- River Basin Management institutions are established and functioning in all five river basins, with **proper** gender balance in River Basin Agencies and River Basin Councils.
- Continuous investment in water resources infrastructures from private and government sector, based on the plans and designs prepared according to the National Water Resources Development plan.
- The improvement of water resources management and introduction of alternative crops, new irrigation technologies and different agricultural systems increased the food security, improved the environmental conditions and reduced the cultivation of poppies significantly.
- Staff of Ministries and River Basin Agencies is fully capable of leading the developments and management of the water resources in the country and informing and advising the public and private sector accordingly.
- Information systems operational for proper prediction of droughts and forecasting of floods.
- Flood management systems in all river basins are functional.
- SCWAM and its Technical Secretariat are functioning as an APEX body, with a pool of part-time contracted experts as advisors
- Proper curriculum in all aspects of the water sector is developed at local Universities and Technical Colleges.
- Gradual increase to 25% of private water supply companies in large irrigation schemes.
- O&M of large (irrigation) infrastructure fully carried out by service providers from private sector;
- Full cost recovery of water services from users;
- Financial Autonomy of RBAs and other public utility organizations.
- Water service providers in urban areas are functioning as independent, autonomous enterprises.
- Supply networks for drinking water are covering 90% of the urban areas.

- Construction of gravity and motorized pipe schemes to provide safe drinking water at the gate of each house hold in rural areas.
- Access to safe water has increased to 98% of the population.
- Hydropower: Potential HPP sites, spread over the country for approx. 3000 MW power production, are developed and operational.

VI. INPUTS AND OUTPUTS

6.1 Major Programs

The on-going and planned projects of the ministries have been clustered and structured into a number of national programs, recognizing the requirements outlined in the priority policies:

1. Institutional Set-up and Capacity Building Program
2. National Water Resources Development Program
3. National River Basin Management Program
4. Irrigation Rehabilitation Program (including agriculture programs covering full on farm water management packages, leveling, efficient irrigation methods, drought resistant crops/varieties development etc.)
5. Mid-term Urban Water Supply & Sanitation Program
6. Rural water and Sanitation Program (RuWatSan)
7. Riverbank Protection program
8. Agriculture “Food Security for All” program
9. The Provincial Consultations’ priorities
10. Prioritized and costed programs and projects

The programs 1 and 2 are dealing with the capacity building, institutional set-up, legislation and information gathering and processing. These programs should get priority, but development of the water resources in the field should also continue. Program 3 responds to the dual tasks of remodeling and modernizing institutions and, at the same time, rehabilitating and improving infrastructure. It considers short run emergency water infrastructure rehabilitation and income generation needs as well as the long run goal of sustainable development of institutions and creation of new multifunctional infrastructure in the Water Sector. As most projects and studies comprise components of capacity building and institutional development, the project activities will be used as training tool for the new river basin management staff as well as the water users and the staff of their organizations and others to be created as part of the river basin institutional setup.

Projects in programs 4-8 are presently grouped, based on the main activities of their sub-sector. Once development and investment plans for the river basins have been drafted, the programs 4-8 will be absorbed in the basin plans. Prioritized and Costed Programs and Projects, taking into account the priorities emerging from the provincial consultations under program 9, are the outcome of Program 10. The main criteria for the programs and projects prioritization are multipurpose and long term characteristics. The specific projects to be undertaken during the timeframe of this strategy are still being designed and prioritized by the GOA and other stakeholders. The projects will be in line with the on-going and planned projects of the ministries, and have been clustered and structured into a number of national programs, recognizing the requirements outlined in the priority policies: At present, the cost estimates and specific projects are being reviewed and revised to meet the goals of this strategy are not available at this time.

6.2 Institutional Set-up and Capacity Building

Activities in this program are components of different on-going and planned projects and are focusing on the institutional set-up and capacity building for water resources management, water resources infrastructure development and urban water supply development at national as well as at river basin and sub-basin level. These activities have been combined in the program to enhance cooperation between the projects and to avoid duplication of efforts. Following activities as parts or suggested parts of projects should get proper attention for a sustainable development in the water sector:

- Re-organizations of Ministries, corporatization or privatization of viable SOEs, and closing remaining SOE's.
- fostering Ministry cadres and water users' capacity build up in on-farm and off-farm water management, including development of forecasting procedures, annual mid term and drought, flood and climate change preparedness
- supporting the academic capacity and research process,
- All legislative aspects for reforming the Water Sector like regulations to the Water Law, guidelines, standards, setting-up of institutions for water resources management, as well as training of staff in implementing the new legislation and regulations.
- Capacity Building Development for Irrigation and Water Resource and Water Supply Management through continuous TA in several areas like general management, planning including economics, design, site surveys, agronomy and farm-management, community organizing and gender, O&M, etc.
- Capacity Building and Institutional Development of River Basin Agencies and Sub-basin Agencies
- Capacity Building and Institutional Development of AUWSSC and its SBUs

Capacity development is not only limited to human capability, but extends to having overall capability in three areas: financial, technical, and managerial. Having financial capacity implies that the sector has the capability to acquire and manage sufficient financial resources to permit compliance with regulations and policies as well as facilitate necessary expansion. Essential elements of financial capacity consist in having the proper analytical tools, deriving sufficient revenue to achieve self-sufficiency, and having ability to attract credit worthiness.. Likewise, technical capacity implies also having the physical infrastructure to permit implementation of programs and projects.

6.3 National Water Resources Development

6.3.1 Planning Study Components

According to the Water Law the Ministry of Energy and Water is responsible for the preparation of a **National Water Resources Development plan**. Such a plan should cover aspects of development of the national water resources for the social, environmental and economic needs of the country as well as

- Better and accurate studies, identification and confirmation of surface water resources (MEW) and ground water resources (MoM) (preparation of water master plan for surface and ground water)
- aspects of elaborating river basin development and management plans,
- opening the ground for private sector investments in the water sector,
- proper planning and implementation of infrastructure for surface water control , and rain and flood water harvesting, supplementary irrigation, groundwater recharge, soil stabilization, etc.
- enabling environment for private sector investment

The rehabilitation of the hydro-meteorological network is a first requirement. The present hydro-meteorological data base is from the late seventies. Additional information on water quality, geotechnical aspects, socio-economics and environment needs to be collected.

An IWRM allocation of limited water resources between agricultural, rural, municipal and environmental uses requires the full integration of supply, demand, water quality and ecological considerations. Environmental quality, planning under climate variability and uncertainty, and the need to develop and implement sustainable water use strategies, further necessitates having a

comprehensive water sector master plan. To facilitate effective transitioning to IWRM, the water sector's master planning must encompass a baseline analysis of all of Afghanistan's complex river basin systems. It must integrate water balances and water policies with both natural and engineered components of the water sector infrastructure.

Master planning should progress through the discrete steps of 1) identification of parameters and processes; 2) calibration of fundamental components; 3) simulating alternative scenarios; and 4) evaluation of water sufficiency, meeting water use objectives, and impacts on tolerances to variability in major parameters. The latter constraint involves investigation and sensitivity analysis of the following:

- Variations to population growth and economic development patterns.
- Variations to water storage reservoir operating rules.
- Variations to groundwater exploitation.
- Variations to water conservation.
- Variations to ecosystem requirements.
- Variations to conjunctive use to store excess surface water in underground aquifers.
- Variations in potential water recycling programs.
- Variations to irrigation techniques and efficiencies.
- Variations to agricultural cropping patterns.
- Variations to climate change.
- Variations in watershed pollution and consequent impacts on downstream water quality?
- Variations in land use changes and associated runoff characteristics.

The basic objective in formulating a water sector master plan is to place demand-side issues such as water use patterns, equipment efficiencies, re-use strategies, costs, and water allocation schemes on an equal footing with supply-side topics such as surfacewater stream flow, groundwater resources, reservoirs, and water transfers. Only through appropriate master plan simulation studies can water users and stakeholders obtain a comprehensive view of the broad range of factors that must be considered in managing water resources for present and future use. The result is achieving an effective tool for examining alternative water development and management options.

As first step for such national development plan a Master Plan for the Kabul River Basin has been prepared. In addition, the Ministry has prepared a list of water resources development projects in the five river basins, which need consultation with other ministries for their inputs towards an integrated development plan of the respective water resources. In the coming period such projects should be combined into development packages covering a sub-basin or total river basin. Suggested packages could be the **Upper Kabul Catchment** as an integration of irrigation infrastructure with hydro-power generation and resources for Kabul urban water supply. Alternatively, the **Bamyan Valley Cultural Heritage developments** as an integration of rural water supply and sanitation with irrigation, cultural heritage protection and urban development could be implemented.

Considering the limited capacity in MEW, the drafting of WRD plans per river basin is more realistic than focusing on a national plan. The Amu Darya River Basin and Kabul River Basin have been chosen as pilots for this development planning. A special WRPU in MEW has been established with support of WB and will be trained for the drafting of the river basin development plans.

6.3.2 Infrastructure Components

During the period that the water sector is in transition to IWRM – RBA programming, the needs of the population and the growth in the economy of Afghanistan will require continued and accelerated

implementation of projects. A significant number of major infrastructure projects have already been identified by the water sector and have been selected for implementation to serve these fundamental socio-economic needs. Following is a listing of major infrastructure projects which have been identified for implementation.

TABLE LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Lower Kokcha irrigation and power project,	Amu	Ir, P, En, Re	1385	1397	12	200	1300	166,000	130
Alishing storage dam project	Kabul	Ir, Re, FC, En	1387	1393	6	70	100		
Almar storage dam project	North	Ir, WS, En, FC	1386	1391	5	42	42	3,000	
Andkhou water supply project	Amu	WS, En	1386	1389	3	10.5	12.5		
Bakhsh abad storage dam, diversion and main canals project	Hilmand	Ir, FC, P, En, WS, GWR, In, Re	1386	1396	10	150	450	60,000	20
Cheshmashafa storage dam project	North	Ir, P, Re, En, FC	1387	1394	7	70	150	200,000	
Dahala dam 2nd phase study, design	Hilmand	Ir, FC, Re,	1388	1403	15				
Dahala dam rehabilitation and improvement	Hilmand	Ir, FC, Re, WS	1387	1395	8	100	183		
Gambiri irrigation and power project	Kabul	Ir, P, En, Re	1386	1392	6	200	250	8,000	10
Gulbahar storage dam project	Kabul	WS, Ir, FC, P, In, Re, En	1387	1397	10	250	1200	60,000 also providing drinking	120

TABLE LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
								water to the New City at Dehsabz	
Hilmand valey development project including Nahr-e Saraj	Hilmand	Ir, En	1387	1395	8	100	200	48,000	
Kafgan storage dam project	Harirod - Morghab	Ir, FC, P	1387	1395	8	50	150		
Kajaki (gate installation) irrigation and power project	Hilmand	P, Ir	1387	1390	3	250	250	75,000	110
Kalagoosh storage dam project	Kabul	Ir, Re	1387	1393	6	120	150		
Kama irrigation and power project	Kabul	Ir, P,	1387	1394	7	200	400	12,000	45
Kamal khan flood protection diversion project	Hilmand	FC, Ir, En, Re	1387	1391	4	400	400	119,000	9
Kilagai storage dam project	Amu	Ir. P, Re, En, In, FP	1386	1393	7	100	350	90,000	50
Machalghoo Storage Dam	Hilmand	Ir, P, En, FC	1387	1393	6				

TABLE LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Pashdan storage dam project	Harirod-Morghab	Ir, FC, In, Re, En, GWR	1386	1391	5	82	82	5,000	
Pump schemes project	Amu, Panj	Ir	1387	1392	5	30	30	10,000	
Salma Storage dam project implementation	Harirod-Morghab	Ir, FC, Re, In	1384	1389	5	80	80	73,000	42
Shah wa aroos storage dam project	Kabul	WS, Ir, P, Re, En, In, FC, GWR	1386	1390	4	44	44	3,000	1.5
Shahtoot storage dam and water supply Project	Kabul	WS, Ir, P, Re, En, In, FC	1387	1394	7	100	100	12,000 Also, provides drinking water to the first phase of the New City at Dehsabz	
Storage dam on bamyán River	Amu	Ir, FC, P	1387	1394	7	50	150		
90 small and medium size storage dams	all		1386	1401	15	200	1000	100,000	

TABLE LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Upper Amu darya diversion project	Amu	Ir, P, WS, En	1387	1400	13	100	2700	500,000	1000
Worsaj storage dam, irrigation and power project	Amu	Ir, P, En, Re, FC	1387	1397	10	80	250	30,000	50
Investigation for ground water of Charikar City	Kabul	WS	1387	1388	5	1.4	1.4		
Investigation for ground water of Kunduz City	Amu	WS	1389	1390	5	1.11	1.11		
Investigation for ground water of Mazar Sharif City	North	WS	1391	1392	5	1.08	1.08		
Inventory survey of ground water in Mazar-e Sharif city	North	WS	1387	1392	5	0.1	0.1		

*Purposes: WS-Water Supply, Ir-Irrigation, P-Power, FC-Flood Control, In-Industry, Re-Recreation, GWR-Ground Water Recharge, En-Environment

6.4 National River Basin Management

The new water policies and corresponding legislation have four major components:

- Integrated Water Resources Management – planning, development and management of water resources for use in different sectors (drinking water, agriculture, mining, industry, etc.) will be integrated,
- River basin approach – the natural river boundaries will be used as demarcation for the management of the water resources and the related institutional set-up,
- Splitting functions – water resources management recognizes three levels of functions: legal & policy functions by Ministry, organizational functions by river basin management and operational functions by operators (e.g. outsourcing of O&M) and service providers; and
- Stakeholder participation in water resources management at river basin level.

These changes can best be introduced in combination with rehabilitation of damaged and/or improvement of infrastructures for irrigation and improvement of livelihood. The river basin programs supported by EC and ADB, are clear examples of different activities in one program – water management institutional set-up, rehabilitation of irrigation infrastructures, upper-catchments protection, social water management, etc. –with the integration of the different activities as one of their objectives. These programs form an excellent step towards the introduction of river basin management and provide opportunities to develop procedures for the establishment of the future institutions, for the organization of water users and training of local representatives in water management aspects. Experience from the programs shall be used to draft additional regulations and guidelines.

The ongoing projects of the National River Basin Management Program have taken important steps towards spreading the understanding at the Ministry level and by technical personnel on the ground of the importance of the river basin approach for increasing productivity, cost efficiency and effectiveness in the Water Sector as well as sustainability of water use. The response of water users and other stakeholders in the River Basins concerned has been positive as they see decentralization and participation as a way of making government personnel more accountable to users, making infractions against formal and traditional laws and rights transparent to communal and government authorities and reduce conflicts and the use of power and bribes to pursue individual goals and interests.

The on-going process of increased engagement and participation of women and sensitizing stakeholders, to gender issues at all levels on the new aspects of water management, while creating the infrastructural and institutional basis for the proposed River Basin Management approach, needs to be emphasized, and ample time and financial resources need to be allocated in the projects/programs for institutional reform and capacity building.

6.5 Irrigation Rehabilitation

Over the last two decades many of the more important infrastructures associated with the agriculture sector in Afghanistan were badly damaged or destroyed. The infrastructures which are being prioritized for rehabilitation are in the fields of irrigation, storage, processing, markets, energy, communication, road and transportation. The program focuses on creating an enabling environment for private sector investment and commercialization. Particular priority is being given to investment in processing industries which result in local value addition and thus create job opportunities and increase farmers' incomes. Sustainable, community-based management of irrigation systems, physical rehabilitation of infrastructures, the development of appropriate regulatory frameworks and capacity development are some of the crucial areas requiring immediate attention to improve the irrigation sector

In 2002 several projects to meet the immediate needs for irrigation infrastructure were developed, which are still going on. Although these projects mainly focus on the infrastructure, they still provide a significant input to the development of the water resources and related issues like the rehabilitation of the hydrometric network for data collection on river flows and weather.

Components of the irrigation rehabilitation program for the period 2008 - 2013 are:

- Rehabilitation of Nationwide Small, Medium and Large Traditional Irrigation Schemes
- National Emergency Irrigation Schemes Rehabilitation of Helmand Valley Project
- Emergency Flood Control (Protection /Water Conservation "Gabion Work")
- Emergency Infrastructure Reconstruction Project, Consultancy for Water Supply and Sanitation

6.6 Urban Water Supply and Sanitation (Mid-term Program)

Upgrading of water supply in Kabul and other urban areas has already resulted in improved health and living conditions. Nevertheless, water demand is still higher than present provisions, and cost-recovery through user-charges remains an important issue. Donor support to water and sanitation policy formulation has yielded an Urban Water Policy and Institutional Development Plan. To improve water and sewerage services, the Central Authority for Water Supply and Sewerage (CAWSS) will be restructured into a corporation, AUWSSC.

Feasibility Study Reports for Water Supply for several cities have been developed with the active support of several donors. Based on these reports; investments are planned spreading over a reasonable period. Capacity building and development of standards will also go as sub components in this approach. Several donors have committed funding to Kabul Water Supply and some key provincial cities. More support is needed to provide this basic necessity – a life saving service. This requires planning and working in phases. Water is a key entry point for donors and local institutions to win their hearts. Operational improvement is another major thrust area which is possible only with a range of capacity building programs and cross subsidies. The ministry is keen to aim at 50% water supply coverage for Kabul and 30% for other cities by 2010 (ANDS Benchmarks). However, donor support is the key. As a rough estimate, more than 30 cities don't have piped water supply systems, yet.

Sanitation is another high priority area. The ANDS Benchmark calls for a 50% improvement in Kabul and 30% in provincial cities by 2010. To achieve MDGs and other indicators, sanitation has to be coordinated with Water Supply improvements. So far little work has been done. Some support on solid waste management support has been made available to Kabul. There is a need to equip other cities with tools, vehicles, men and technology to improve their environments. As such, investment in sanitation is an urgent need.

6.7 RUWATSAN

The **Rural Water Supply and Sanitation Programme (RuWatSan)** aims to enhance health by reducing death and disease through waterborne diseases allowing individuals to fully participate and strengthen their livelihood strategies, through the provision of sustainable access to potable water sources and sanitation facilities and improve public hygiene and environmental sanitation in rural communities. In addition, the RuWatSan programme seeks to strengthen the capacity of rural communities for service delivery, operation and maintenance and the sustainable use of water supply and sanitation facilities.

This is carried out through the construction of water or sanitation facilities packaged with community mobilization, health and hygiene education as well as the repair and maintenance training to maximize health benefits and ensure sustainability. Direct implementation is carried out by Facilitating partners (NGOs and the private sector) with regulatory guidance and oversight from MRRD. All these

activities are aiming to extend access to drinking water to 90% of the villages and sanitation to 50% with special attention to the quality standard of toilet construction.

The programme has also established mechanisms to ensure that decision-making regarding sub-project selection is consultative and activities do not overlap with those undertaken by other development activities in their respective sectors.

6.8 Riverbank Protection

Virtually every year the major rivers in Afghanistan are flooding; inundating large areas, damaging crops and destroying property. Erosion of riverbanks resulted in many thousands of hectares of productive arable land being washed away. Even during periods of lower flows, the soft alluvial banks are continually undermined by the current, resulting in land slipping into the river. Given the current economic situation in Afghanistan it is impracticable to try and control the entire length of the large rivers. The riverbank protection program is providing emergency interventions as short term measures, and identifying those reaches at greater risk of bank erosion and devising appropriate and economically viable measures to minimise the risk and safe guard valuable property and assets.

6.9 “Food Security for All” (Agriculture Program)

The most essential role for an agricultural economy is to assure access to an adequate supply of diverse foods for the nation’s people to live a healthy and active life. Food security can be achieved by improving the food supply - through domestic production and productivity gains, commercial imports and donor aid – and by increasing households’ ability to purchase food –through improved physical access to food and increased income.

Several agricultural programs are currently supporting improvements in staple supply by:

- testing and introducing improved varieties for wheat, potatoes, and other staple crops
- training farmers on improved farming methods
- improving access to quality seed through development of private seed enterprises
- improved access to fertilizer
- improving storage facilities at household, community and provincial levels

The success of stable production interventions is linked to close collaboration between management and protection of the natural resource base and the improvement of rural infrastructure and irrigation.

6.10 Provincial Consultations’ Priorities

This Sector Strategy incorporates feedback and comments from the Sub National Consultations (SNCs) and as such is a response to the people of Afghanistan’s vocalized needs and development goals, both nationally and with provincial emphasis. The Sub National Consultations ensured public participation in the country’s development process. Provincial representatives were invited to ask for their perception of the state of development in the eight ANDS pillars in their province. The water resources strategy was presented by MEW. Based on these consultations the Provinces shared their priorities for inclusion in the water sector strategy. These priorities will be included in the different sector programs and implementation plan. With representatives from all levels of Afghan society, including 47% participation by women, the Sub National Consultations and the resulting Provincial Development Plans have contributed public support to the development of the Strategies.

6.11 Prioritized and Costed Projects and Programs

Prioritized and costed projects and programs are discussed separately under the water sector strategy implementation program.

Of special note is the requirement to integrate the water infrastructure projects for Dehsabz into the overall water sector prioritized program.

VII CROSS CUTTING

7.1 Cross Cutting Issues

Major cross cutting issues are to be both directly and indirectly addressed through implementation of the on-going and planned programs. These include the following:

7.2 Environment

The environmental protection section under cross-cutting issues applies primarily to biodiversity. However, the water strategy, through its resulting programs and institutional structures, is an important vehicle for environmental mainstreaming of related policies, regulations and laws. The Environment Law establishes a framework for the conservation and productive use of natural resources and grants enforcement and permitting rights to the government, primarily NEPA.

7.3 Counter Narcotics

Implementing a strong Water Strategy program with extensive user participation should encourage dissemination of fundamental anti-narcotics sentiments. By enhancing water use efficiencies, and by education programs deployed through water user associations, an effective negative impact should be affected to dissuade both production and use of narcotics. Promotion, demonstration and introduction of alternative irrigation systems, alternative crops, especially higher value crops to compete with poppy, and different agricultural systems is foreseen to contribute to food security, population stability in the rural areas, improved environmental conditions and increased diversification of the agriculture base.

7.4 Gender

Gender issues are also addressed in a much more direct and positive manner. Particular improvements include

- Employment opportunities ranging from unskilled labor to highly skilled-professionals.
- Multifaceted improvements to the standard of living, resulting in increased productivity.
- Improved health standards

7.5 Anti Corruption:

Adoption of a River Basin administrative structure should decentralize traditional mechanisms which have been prone to foster potential corruption. A prime ingredient to the growth of corruption is of course marginal subsistence with low resource remuneration. By benefiting from the many enhancements to be found in an effective water strategy policy, properly implemented, growth in the moral fiber of society should prevail, and corruption should subside.

7.6 Capacity Building:

Capacity building is essentially composed (or targeted at) of three basic components: Institutional strengthening, Organizational strengthening, and Individual strengthening. The proposed capacity building programs for the water sector will address all three of these. And, each component will be further sub-divided amongst the various sub sectors that are involved. These are principally in water resources management, rural and urban water supply, and irrigation.

VIII IMPLEMENTATION FRAMEWORK

A Risk Assessment

1. Political will and supportive cooperation to introduce new WRM concepts.
2. Commitment of the Government
3. Respect for new rules and regulations
4. Availability of professional staff
5. Security improves
6. Funding of large works and institutional development is made available
7. Extreme natural hazards
8. Commitment government and communities
9. Financial resources
10. Non-compliance rules & regulations
11. Security and political instability

B Monitoring and Evaluation Process

An effective monitoring and evaluation (M&E) process supports both project management and engages stakeholders in understanding specific project(s) and program(s).progress, learning from achievements and problems, and agreeing on how to improve both strategy and operations. Primary functions of M&E are to ensure improvement, orientate critical reflective thinking, maximize impact of development, and demonstrating accountability of development. The following guidelines have been established to set-up an effective M&E process:

- a. Setting up or designing the M&E processes
 - Identify and select the most effective methods.
 - Methods should guide project strategy and must ensure effective operations.
 - At each stage of the project cycle, consideration should be given to a set of key M&E tasks.
 - A detailed M&E plan should be drawn up during the project start-up and mobilization phases and clearly documented.
 - The M&E method will need to be monitored and updated throughout the life of the project.
- b. Gathering and managing information
 - Identify relevance, effectiveness, efficiency, impact and sustainability of actions.
- c. Using experience and information more effectively to improve action
 - Collecting and subsequently checking, sampling, recording, collating and analyzing data. .
 - Method used must be technically and financially feasible.
 - Participatory approach to data collection and processing to effectively utilize primary stakeholders is preferable.
- d. Communicating and reporting results

- Identify what needs to be communicated as part of the M&E process, how and to whom.
- Primary audience should be project managers, M&E officers, responsible ministries and impacted stakeholders. For details see attached Annex II (Monitoring Matrix)

DRINKING WATER

Access to safe water

In MRRD-NRVA 2005, **safe water** is considered to be water from a protected source. Several options were mentioned in the survey:

Safe Water (protected)	Unsafe Water
Hand pump - In public	Shallow open well - public
Hand pump - in compound	Shallow open well - in compound
Bored well - hand pump	Spring - unprotected
Bored well motorized	Arhad
Spring - protected	Karez
Pipe scheme - gravity	River Lake Canal
Pipe scheme motorized	Kanda
Pipe scheme - municipal	Nawar Dand Dam
Bowser/water tanker	Pool Howz
	Drainage
	Other

Nationwide, 31% of the households have access to safe drinking water. Kuchi households have lowest access to safe drinking water (16%), while rural households have 26% and urban households 64%. As minimum requirements 20 l/day/capita for rural populations and 50 l/day/capita for urban populations are considered.

Payment for drinking water

Nationwide, 5% of the households pay for the main source of drinking water. Two percent of Kuchi and rural households report paying for drinking water. In contrast, 16% of urban households pay for their main source of drinking water.

Amount paid for drinking water. (Survey June-August 2005)

Nationwide, the monthly payment for drinking water from the main source averages 181 Afs during the months of survey. **Kuchi** households show the highest monthly payment (772 Afs), purchasing from water tankers. **Rural** households average 188 Afs, which is higher than for **urban** households (162 Afs)

Time to collect water

Nationwide, 82% of the households obtain water from their communities (almost no time); 14% obtain it near their communities, within one hour or less; 2% take between 1 to 3 hours; and 1% require 3 to 6 hours. See also the following table.

Categories	No time - in community	Near community- 1 hour or less	1-3 hrs	3-6 hrs	6-12 hrs	1 day
Kuchi	56	34	6	3	1	0
Rural	81	15	3	1	0	0

Urban	94	6	0	0	0	0
National	82	14	2	1	0	0

Sanitation – toilet facilities

Nationwide, the traditional covered latrine is reported as the most commonly used toilet facility (57%), followed by *dearan/sahrah*, which is a place within or an outside compound for waste products, animal manure, fire end products and used as toilet as well (13%), open fields or bushes (12%), and open pits (10%). Improved latrines were reported in only 5% of households, and flush toilets were reported in only 2% of households. Thus, if the improved latrines and flushing toilet facilities are defined as “safe”, then only 7% of households nationwide have access to safe toilet facilities.

Categories	None/open field/bush	Dearan / (area in compound -but not pit)	Open pit	Traditional covered latrine	Improved latrine	Flush toilet
Kuchi	43	17	26	14	0	0
Rural	13	15	10	58	3	1
Urban	0	1	3	67	20	9
National	12	13	10	57	5	2

Irrigation

Agriculture is the most important source of income in Afghanistan. Almost one half (47%) of the households are engaged in one or more forms of livestock, followed by non-farm labour (33%), trade (27%) and livestock (23%). Opium activities constitute only 4%, but they are widespread. Due to the sensitivity of capturing precise information on opium it may be under reported. The most important crops (%) on irrigated land are shown in the following table.

Frequency *	First most important crop	Second most important crop	Third most important crop
+++	Wheat (89)	Maize (44)	Alfalfa (20)
++	Opium (3)	Barley (19)	Melon/watermelon (8)
+	Vegetables (1)	Rice (7)	Potato (7)

* The top three frequencies within the first, second and third most important crops. NRVA 2005

INDUSTRIAL USE

Presently the existence of industries in Afghanistan is in a state of change – from State-Owned Enterprises (SOE) to private entities – both factories and mines. The government is assisting in the process through ministries and a specialized agency.

There are a range of older factories dating from Soviet days – textiles, cement, furniture, shoes, cottonseed oil and others. There are also a range of new factories just beginning – bottling, cheese, yogurt and other products. Many factories in Afghanistan are located in industrial parks. This is supported by government and includes provision of land and water. Wells are dug and water is supplied to public industry with no charge and a fee is charged to private user. There are 21 industrial parks planned in 17 provinces. 7 were established in the 1960s and 1970s, but are without necessary infrastructure and proper management. Many small industries like carpentry, car mechanics, steelworks fabrication and black smiths are located in crowded areas of towns and villages.

XII BIBLIOGRAPHY:

TITLE	SOURCE	DATE
A Guide to Water and Sanitation Sector Impact Evaluations	World Bank	Dec 2006
Afghanistan – An Overview of Groundwater Resources and Challenges	Vincent W. Uhl, assisted by M Qasem Tahiri	2003
Afghanistan Poverty, Vulnerability and Social Protection: An Initial Assessment	Human Development Unit, Department of the World Bank	Mar 2005
Afghanistan Statistical Yearbook -2003	Central Statistic Office	Sept 2003
Afghanistan Statistical Yearbook -2004	Central Statistic Office	Sept 2004
Asian Development Water Outlook, Achieving Water Security	Asian Development Bank	2007
Asian Water Development Outlook 2007	Asian Development Bank	2007
Balkh River Basin Integrated Water Resources Management	Asian Development Bank	Nov 2004
Blind Spot: The continued failure of the WB and IMF to fully assess the impact of their advise on poor people	Joint NGO Briefing NOte	Sep 2007
Chartered Water User Association of Afghanistan-Self Managing, Self-Financing, Self-Governing	Priest, Sultani, Assifi	2003
Handbook for Capacity Development	Environmental Protection Agency, USA	1999
IMF-World Bank-WTO Coherence: the Implications for Water Privatization	Marianne Williams	Nov 2002
Integrated Water Resources Management and River Basin Governance	Bruce P. Hooper	Nov 2003
Kunduz River Basin Programme – Draft Summary Kundez River Basin Project	Landell Mills	Dec 2006
Kunduz River Basin Programme – Inception Report	Landell Mills Limited	Feb 2005
Livelihoods in the Asqlan and Sufi-Qarayateem Canal System in the Kunduz River Basin	Usman Shah	Nov 2006
Mapping for better accountability in service delivery	Overseas Development Institute	Nov 2004
Millennium Development Goals Report – Vision 2020	Islamic Republic of Afghanistan, Country Report 2005, UNDP	2005
National Disaster Management Plan	Department for Disaster	Dec 2003

	Preparedness	
National Risk and Vulnerability Assessment 2005	Ministry of Rural Rehabilitation and Development & Central Statistics Office	June 2007
Recommendations and Guidelines on Sustainable River Basin Management	RBA TU Delft, Sponsored by Ministry of Housing	Dec 1999
Regional Cooperation Strategy for Afghanistan National Development Strategy (Draft)	Afghanistan National Development Strategy	Oct 2007
Strategy for Institutional Strengthening in Disaster Risk Management in Afghanistan	Department for Disaster Preparedness	Mar 2004
Strategy for Integrated Water Resources Management	World Bank	1998
The Afghanistan Compact	The London Conference on Afghanistan	Feb 2006
The World Bank Participation Source Book	World Bank	1998
Understanding Poverty in Afghanistan, Analysis & recommendations using National Risk & Vulnerability 2005 (Draft)	World Bank's Non-Lending Technical Assistance for Poverty Team	Oct 2007
UNDP Practice Note: Capacity Development	UNDP	2007
Water Evaluation and Planning System (WEAP) – Tutorial	Stockholm Environment Institute	Nov 2007
Water for Life and Livelihoods, Framework for River Basin Planning	Environmental Agency (England)	Feb 2006
Water Resources Growth and Development	World Bank	Apr 2005
Water Sector Development Strategy in Tajikistan	UNDP Office in Tajikistan and Ministries	2006
Water Sector Strategy – Strategic Directions for World Bank Engagement	World Bank	2004

ANNEX I: WATER SECTOR STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE				
SECTOR : WATER RESOURCES				
Expected Outcomes	Policy Action	Category	Time frame	Responsible Agencies
Improved water sector legal and governance structures and institutions in place	Assess, identify, draft, review, debate, resolve, finalize water law and supplementary regulations	Legislation	2008-2009	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Conduct appropriate studies, identify specific pilot programs, experimentation, and customize river basin institutional structures.	Institution Building	by 2010	MEW, MAIL.,MRRD, MoM, MoUD, NEPA
	Establishment of institutions for hydrometric network in the country	Institution Building	by 2010	MEW
	National urban and rural water supply institutions in place	Institution Building	by 2011	MoUD, MRRD
	Training of staff from various sector ministries on integrated water resources management	Institution Building	Continue	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Establishment of organization and capacity building of River Basin Agencies and Sub-agencies (RBA/ SBA) and River Basin and Sub-basin Councils (RBC/SBC)	Institution Building	2008-2009	MEW
	Training of SCWAM Technical Secretariat staff	Institution Building	Continue	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Gathering of data socio-economics, geology/groundwater, environment, hydrological, meteorological and others for project development	Institution Building	by end 2010	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Development of curriculum in water resources management at local universities/technical colleges	Institution Building	by end 2009	MEW, MAIL, MoHE, MRRD, MoM
	Assessment studies for project	Institution Building	Continue	MEW,MAIL, MRRD, MoUD, NEPA, MoPH
	Institute training in HEC RAS and other appropriate modeling techniques	Institution Building	2010	MEW, MAIL., MoM, MoUD, MRRD
	Assignment of staff/personnel to consultancy contracts for training	Institution Building	end 2009	MEW, MAIL, MRRD,MoUD, MoM
	Gender discrepancies in various laws systematically uncovered	Legislation/ Gender Cross Cutting Issues	2008-2009	National Assembly, MoUD, MoJ
Regional water issues dialogues initiated	Legislation/ RC Cross Cutting Issues	TBD	MoFA, MEW, MAIL, SCWAM	
Sustainable water resources management strategies and	Initiate appropriate inventory studies, water resources planning studies and basin master plans	Development	end 2010	MEW, MAIL., MoM, MoUD, MRRD, NEPA

PILLAR : INFRASTRUCTURE				
SECTOR : WATER RESOURCES				
Expected Outcomes	Policy Action	Category	Time frame	Responsible Agencies
plans covering irrigation and drinking water supply developed and implemented.	Complete master plan investigations	Development	2010	MEW, MAIL, MRRD, MoUD, MoM, SCWAM, NEPA
	Identify, study, design, procure and implement projects	Development	Continue	MEW, MAIL, MRRD, MoUD, MoM, NEPA
	Identify, prioritize, and implement rehabilitation program	Development	Continue	MEW, MAIL, MRRD, MoUD, MoM, NEPA
Water resources for irrigation and Drinking purposes improved.	Enhance achievement tracking procedures and augment NSP resources	Development	by 2010	MRRD
	WUA implementation programming	Development	Continue	MEW, MAIL, MRRD, MoUD
	Strengthen required resources and monitor programs	Development	Continue	MEW, MAIL, MoUD, MRRD, NEPA
	Improve existing drinking water supply systems and build new systems in villages and cities, including Kabul	Development	by 2010	MoUD, MRRD, MoM, MEW
	Rehabilitation of National Hydro-meteorological network	Development	by 2010	MEW
	Development of technical plans, management plans, and implementation strategies for Amu Darya River Basin, Northern River Basin, Harirud-Morghab River Basin, Helmand River basin, and Kabul River Basins,	Development	by 2011	MEW
	Rehabilitation of all small, medium, and large traditional irrigation schemes and strengthen water users association	Development	Continue	MEW, MAIL, MRRD
	Provision of access to water and sanitation facilities to rural people	Development	Continue	MRRD
	Undertake riverbank protection and erosion control works and implement long-term flood control program	Development	Continue	MEW
	Community based natural resource management established	Development/ Env. Cross Cutting Issues	Continue	MEW, NEPA, MRRD, MAIL
Water resources for irrigation utilized for non-poppy farming	Development/ CN Cross Cutting Issues	by 2010	MEW, MCN, MAIL, MRRD	

ANNEX II: WATER SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE			
SECTOR: WATER RESOURCES			
Expected Outcomes	Indicator	Baseline	Targets
Improved water sector legal and governance structures and institutions in place	Index on the progress of putting in place improved water sector legal and governance structures and institutions in place.	Partially good (improving)	Improved water sector governance by 2013
Sustainable water resources management strategies and plans covering irrigation and drinking water supply developed and implemented.	Index on the progress of developing and implementing sustainable water resources management strategies and plans covering irrigation and drinking water.	Strategies completed 70% Feasibilities studies for large projects are continue	Sustainable water resource management strategies and plans covering irrigation and drinking water supply will be developed by end-2008, and irrigation investments will result in at least 30% of water coming from large waterworks by March, 2011.
	% of water coming from large waterworks.	10%	TBD
Water resources for irrigation and Drinking purposes improved	Index on the improvement of water resources for irrigation and drinking water purposes.	25-30%	Improved water resources for drinking and irrigation purpose by 2013
	# of Hydrometric stations, snow gauges and metostation installed and equipped	7 out of 234	2011
	% of lands irrigated through rehabilitated and new water works	1.8 Million Ha	Additional 450,000 ha (2013)
	% of sites where 90% of tail-enders receive enough water on time	TBD	TBD
	# of sites reserved as suitable drinking water resource	Based on recent surveys 20 % of the sites have been reserved	By 2013 sites reserved as suitable drinking water resource
	% of beneficiaries, by gender, whose technical knowledge and skills for managing irrigation assets have increased considerably	TBD	TBD
	% of households in other urban areas except Kabul have access to piped water	15-18%	30% by end of 2011
	% of households in Kabul have access to piped water	18-21%	50% (2010)
# of water points available for rural households	10119 since establishing WatSaN	TBD	

PILLAR: INFRASTRUCTURE			
SECTOR: WATER RESOURCES			
Expected Outcomes	Indicator	Baseline	Targets
		department	

ANNEX III: LIST OF PROGRAMS AND PROJECTS (WATER SECTOR)

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392 +							
1	AFG/0336101	Rehabilitation of 174 National Hydrological Stations throughout the Country	1383		5.000	0.70						5.700	5.000	0.700	WB	Core	MEW
2	AFG/0336401	Rehabilitation of the Amu Darya River Basin Irrigation Schemes.	1383		4.500	3.80						8.300	4.500	3.800	ADB	Core	MEW
3	AFG/0336701	Western Basin Integrated Water Resource Management	1382		5.470	0.62						6.090	5.470	0.620	ADB	Core	MEW
4	AFG/0337301	Feasibility of Lower Kokcha Irrigation Project and M&E of EIRP	1383		0.660							0.660	0.660	0.000	WB	Core	MEW
5	AFG/0337701	Design of Kama Irrigation and Power Project	1383	1391	50.000	50.00	75.00	100.00	125.00			400.000	0.900	399.100	AFG	Core	MEW
6	AFG/0354601	National Emergency Irrigation Schemes Rehabilitation program Throughout the Country	1382	1391	5.000	40.00	45.00	50.00	65.00			205.000	5.000	200.000	ADB	Core	MEW
7	AFG/0457901	Rehabilitation of Nationwide Small, Medium and Large Traditional Irrigation Schemes	1383		15.680							15.680	15.680	0.000	AFG, WB	Core	MEW

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392 +						
8	AFG/0594301	Feasibility Study of Small and Medium Dams	1384		3.240	2.06					5.302	3.240	2.062	AFG	Core	MEW
9	AFG/0602101	Feasibility Study for Upper Amu Daria Irrigation Project	1384		1.000						1.000	1.000	0.000	AFG	Core	MEW
10	AFG/0602104	Feasibility Study for Andkhoy Drinking Water Project	1384		2.000	3.00					5.000	2.000	3.000	AFG	Core	MEW
11	AFG/0602105	Feasibility Study for Kelagai Dam and Kalagai Dam Project	1384	1393	1.170	25.00	50.00	50.00	75.00		201.170	1.170	200.000	AFG	Core	MEW
12	AFG/0602106	Feasibility Study for Bakhshabad (Farah) Dam Project	1384	1393	1.000	35.00	55.00	70.00	95.00		256.000	1.000	255.000	AFG	Core	MEW
13	AFG/0663801	Feasibility Study for Gulbahar Storage Dam and Panjshir River Storage Dam	1385	1399	0.730	25.00	75.00	100.00	125.00		325.730	0.730	325.000	AFG	Core	MEW
14	AFG/0710701	Feasibility study of Shahtoot irrigation Dam	1385	1391	0.720	25.00	25.00	25.00	25.00		100.720	0.720	100.000	AFG	Core	MEW
15	AFG/0807001	Construction of Power and Irrigation Dam of Shah wa Aros in Shakardara District	1387	1389	3.000	17.00	10.00				30.000	0.000	30.000		Core	MEW
16	AFG/0807101	Supervision and Construction of Almar Irrigation Storage Dam in Faryab Province	1387	1389	3.000	17.90	15.00				35.900	0.000	35.900		Core	MEW
17	AFG/	Supervision and	1387	1389	5.000	37.30	39.50				81.800	0.000	81.800		Core	MEW

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392 +						
	0807201	Construction of Paashdan Power and Irrigation Dam in Herat Province														
18	AFG/0807301	Design of Gambiri Desert Irrigation Project (Nangarhar)	1387	1392	1.200	20.00	40.00	50.00	65.00		176.200	0.000	176.200		Core	MEW
19	AFG/0807401	Feasibility Study of Medium and Large Dams (Warsage in Takhar, Kafgaan in Herat, Chashma Shifa in Balkh, Alishang and Kalagosh in Laghman)	1387		3.000	2.00					5.000	0.000	5.000		Core	MEW
20	AFG/0807601	Creation of Green Zone along the Lashkari Dike	1387		0.240	1.04	0.83				2.105	0.000	2.105		Core	MEW
21	AFG/0807701	Rehabilitation of 5 Storage Dam in 3 provinces (Ghazni, Logar and Paktiya)	1387		0.800	0.40					1.200	0.000	1.200		Core	MEW
22	AFG/0807801	Feasibility Study of Amu River Protection Walls	1387		1.000						1.000	0.000	1.000		Core	MEW
23	AFG/0664201	Feasibility study and hydropower plant on Kunar river	1385	1393	0.590	25.00	75.00	125.00	125.00		350.590	0.590	350.000	AFG	Core	MEW
24	AFG/0718801	Participatory Management of Irrigation Systems (PMIS) in the Kunduz River Basin	1386		0.23	0.00	0.00				0.227	0.227	0.000	EC	External	MEW

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392 +						
25	AFG/0719201	Catchment Development Programme	1386		0.81	0.00	0.00				0.808	0.808	0.000	EC	External	MEW
26	AFG/0720701	Shahrawan Irrigation Canal project in Takhar Province – under KRBP, Afghanistan	1386		0.46	0.00	0.00				0.460	0.460	0.000	EC	External	MEW
27	AFG/0720901	Provision of Technical Assistance in Support of the Amu Darya River Basin Management Program - Kokcha and Panj Watersheds, Badakhshan, Afghanistan	1386		1.47	0.00	0.00				1.470	1.470	0.000	EC	External	MEW
28	AFG/0724601	Khanabad Irrigation Scheme Rehabilitation	1386		1.83	2.99	0.00				4.824	4.524	0.300	EC	External	MEW
29	AFG/0820601	Parwam Irrigation Project Rehabilitation Work (Phase II & III)	1386		14.80	0.00	0.00				14.800	14.800	0.000	CHN	External	MEW
30	AFG/0337201	The Salma Dam Project Feasibility Heart Province	1386		28.84						28.840	28.840	0.000		External	MEW
31	AFG/0746901	The Study on Groundwater Resources Potential in Kabul Basin	1386		0.02	0.02	0.00				0.038	0.038	0.000	JPN	External	MoM
32	AFG/	Provincial Towns	1383		21.700						21.700	19.800	1.900	ARTF	Core	MoUD

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392 +						
	0583901	WSS (Water Supply System) - 14 towns														
33	AFG/0800001	FC - Kabul II Water Supply	1386		9.25	0.00	0.00				9.250	9.250	0.000	GER	External	MoUD
34	AFG/0828101	Safe Drinking Water	1387		13.50	0.00	0.00				13.500	13.500	0.000	USAID	External	MoUD
35	AFG/0830901	Maimana town water project	1387		1.70	0.00	0.00				1.700	1.700	0.000	NOR	External	MoUD
36	AFG/0360101	National Rural water supply, Hygiene education and Sanitation Programme.	1381		62.85	48.50					111.350	16.920	94.430	ARTF, JPN, Swiss, UK-DFID, UNICEF	Core	MRRD
37	AFG/0553201	The Rural Recovery through community based irrigation rehabilitation project	1383		1.97						1.970	1.970	0.000	ADB	Core	MRRD
38	AFG/0819901	IMPROVING WATER SUPPLY IN FARYAB PROVINCE	1387		3.70	1.20					4.900	4.900	0.000	NOR	External	MRRD
39		Kamal Khan Irrigation Project (Nimroz)	1387	1393		25.00	50.00	75.00	75.00		225.00	0.00	225.00			MEW
40		Upper Amu Da(Khush Tepa) Water Project	1387	1399		25.00	75.00	150.00	175.00		425.00	0.00	425.00			MEW
41		Nahre (Helmand) Siraj Dam Project	1387	1392		10.00	25.00	40.00	50.00		125.00	0.00	125.00			MEW
42		Cheshma-e-Shifa Water Project	1387	1391		15.00	25.00	50.00	60.00		150.00	0.00	150.00			MEW

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392 +							
		(Balkh)															
43		Bank Protection Amu and Punj Rivers (North)	1387	1391		15.00	25.00	50.00	50.00		140.00	0.00	140.00				MEW
44		Dahla Dam (Kandahar)	387	1391		25.00	50.00	75.00	35.00		185.00	0.00	185.00				MEW
45		Machalghu (Paktia) and Park (Paktika) Irrigation Scheme	1387	1389	3.00	20.00	52.00				75.00	0.00	75.00				MEW
	Total:				280.13	518.53	807.33	1,010.00	1,145.00		3,760.98	166.87	3,594.12				

ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (WATER SECTOR)

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
1	Excavation of shallow wells (20).	Balkh	MoM/MEW	1387				
2	Establishment of canal system in centre and Zary district.	Balkh	MEW/MAIL	1387				
3	Reconstruction of previous water supply system for provision of drinking water.	Balkh	MoUD/IDLG/MEW	1387				
4	Construction and reinforcement of the Amo river protection walls (2km, 200,000 beneficiaries).	Balkh	MEW	1387				
5	Provision of drinking water	Bghlan	MoUD/IDLG/MEW	1387				
6	Construction of protection wall at the edges of the river in 3230 meter, along the Dasht-i-Rubat, Munawar Jan, Deh Naw, Efsichi, Shashan and Fering. Will be beneficial to 30000 families.	Bghlan	MEW	1387				
7	Construction of water tank for kochies 100000 will be beneficiary in Azim Shor, Dasht e Gabr Balai Hesar.	Bghlan	MRRD/MoUD/MEW	1387				
8	Construction of dam, 30 metres, Fering district (30000 families as beneficiaries).	Bghlan	MEW	1387				
9	Construction of dam in Andarab Dehsalah.	Bghlan	MEW	1387				
10	Construction of dam in Tangee Nahrin (200m).	Bghlan	MEW	1387				
11	Rehabilitation of Nahr-i-Khushk in Larkhwabi of Dahana-i-Ghori.	Bghlan	MEW	1387				
12	Digging of deep wells in first district of Pul e Khomri.(100m)	Bghlan	MoM/MEW	1387				
13	Digging of deep wells in Zarkum.	Bghlan	MoM/MEW	1387				
14	Reservoir for 6 villages of Shibar, (100000 beneficiaries)	Bamyan	MEW/MRRD	1387				
15	Construction of protection wall in Kahmard district (4 km,10000 families as beneficiaries).	Bamyan	MEW	1387				
16	Construction of water supply network, in the centre of Bamyan province (15000 beneficiaries).	Bamyan	MoUD/IDLG/MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
17	Construction of water supply network in the centre of Bamyan province (30000 families as beneficiaries).	Bamyan	MoUD/IDLG/MEW	1387				
18	Construction of the canal of Piazi at Urgo, on 10000 Jirib of land.5000 families as beneficiaries.	Badakhshan	MEW/MAIL	1387				
19	Establishment of drinking water for the Namaz Gah (Mosque) at the Namaz Gah Kasham. (6 km for 800 families)	Badakhshan	MRRD/	1387				
20	System of drinking water at village of Gandom Qool (Kalan Kasham) (10 km for 2000 families).	Badakhshan	MRRD	1387				
21	Establishment of 10 km drinking water supply system in Dara Ghaib, Kasham district(1800 families as beneficiaries).	Badakhshan	MRRD	1387				
22	Reconstruction and strengthening of Saltarga Stairmy Gizab district canal. (10 km).	Daikundi	MEW/MAIL	1387				
23	Digging of 3 deep wells in Shiring Tagab district.	Faryab	MoM/MEW	1387				
24	Construction of protection walls in Shirin Tagab.	Faryab	MEW	1388				
25	Establishment of canal system in Maimana city.(15km)	Faryab	MEW/MAIL	1387				
26	Digging of deep wells in Khawjan Qool (3 wells)	Faryab	MoM/MEW	1387				
27	Construction of Dadkhowa head work in Khowja Sawozpoosh district Yangiqal village. (One head work)	Faryab	MEW	1387				
28	Construction of protection wall in Bilchiragh , Charmgari, Atawlah, Doghla , Koleyay and Nishar. 12/5 km.	Faryab	MEW	1387				
29	Construction of Bento head work in Pashtonkot district Bento village (100m	Faryab	MEW	1387				
30	Excavation of deep well in Qaisar district (3 wells).	Faryab	MoM/MEW	1387				
31	Provision of irrigation channels for agriculture from the River Amo	Jawozjan	MAIL/MEW	1387				
32	Provision of drinking water for centre & 10 districts with 10 wells and 4 deep wells (200000 beneficiaries)	Jawozjan	MoM/MoUD/MRRD	1387				
33	Construction of diversion dam in Khawaja Ash Kara for reservoir (Darzab & Qush Tepa).	Jawozjan	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
34	Excavation of water canal from Morghab river to Jawzjan & Sar-i-Pul provinces (600000 beneficiaries - population of two provinces).	Jawozjan	MEW	1387				
35	Water pipeline from Amu River to Aqcha district and Neighbor districts (400000 beneficiaries population of five districts).	Jawozjan	MoUD/MRRD/MEW	1387				
36	Pipeline for drinking water (25km Khawaja Dokoh district, Qazal Ayeqry Salteq Kalan Aregh villages (16000 beneficiaries).	Jawozjan	MRRD	1387				
37	Connection of Morghab River to Sheberghan River (2km Sancharak district 30000 beneficiaries).	Jawozjan	MEW	1387				
38	Diversion dam in Qarqen district (35km60000 beneficiaries).	Jawozjan	MEW	1387				
39	Construction of protection wall (500m in Qush Tapa Darzab Faiz Abad district (6000 beneficiaries).	Jawozjan	MRRD	1387				
40	Digging of 4 deep wells in Shiberghan city.	Jawozjan	MRRD/MoM	1387				
41	Pipeline for drinking water (25km Khawaja Dokoh district, Qazal Ayeqry Salteq Kalan Aregh villages (16000 beneficiaries).	Jawozjan	MRRD	1387				
42	Connection of Morghab River to Sheberghan River (2km Sancharak district 30000 beneficiaries).	Jawozjan	MEW	1387				
43	Diversion dam in Qarqen district (35km 60000 beneficiaries).	Jawozjan	MEW	1387				
44	Rehabilitation of dam for the Panjshir, Ghorband and Dashtel river (150000 families as beneficiaries).	Parwan	MEW	1387				
45	Construction of protection wall for water supply canal from Totum Dara till centre of the province (65000 families as beneficiaries)	Parwan	MEW	1387				
46	Construction of Zabir canal in Qala-i-Khwja Bagram (5000 families as beneficiaries)	Parwan	MEW	1387				
47	Development of local head works in Surkh Parsa, Sia Gird, Jabul Seraj and Shaikh Ali districts.	Parwan	MEW	1387				
48	A 22 km extension of the water network.	Parwan	MoUD/MRRD/MEW	1387				
49	Digging of 100 of Shallow wells in the province level.	Parwan	MRRD/MoM	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
50	Rehabilitation of Ghorband river from Bagh Afghan to Darazgeerd. 30km	Parwan	MEW	1387				
51	Implementation of 10 water supply projects in 10 villages of Bagram.	Parwan	MRRD	1387				
52	Construction of protection wall in Bazarak, Mala and other villages. (Approx. 2 km.)	Pajshir	MEW/MRRD	1387				
53	Constructiton of dam in Tawakh, Anaba, Abdara, Frakh and Zamanko.(45000 beneficiaries)	Pajshir	MEW	1387				
54	Construction of village dams in Rokha , Darai Hisarak, Yawosht Karbashi (8 dam 49km)	Pajshir	MEW/MRRD	1387				
55	Design and survey for canal from Khaniz up to Zamankor. (Approx 15 Km)	Pajshir	MEW	1387				
56	Construction of protection wall in Centre of province Bazarak and Paranda Approx 12 Km.	Pajshir	MEW	1387				
57	Construction of irrigation canal from Warskwal up to Shalkacha. (20 km)	Pajshir	MAIL/MEW	1387				
58	Establishment of water reservoir for dry season water supply (3000 families as beneficiaries, Gailan district).	Ghazni	MEW	1387				
59	Construction of Tege dam (Nava district, 300m, and 3000 families as beneficiaries).	Ghazni	MEW	1387				
60	Reconstruction & cleaning of Sar Deh Dam (57 km, beneficiaries 80000 in Andar and Gero districts)	Ghazni	MEW	1387				
61	Protection wall 30km Andar Shapit Macool Nawa MoPHamad khil Khwaja Umery Do Doab Qala Amiry (20000 families as beneficiaries).	Ghazni	MEW	1387				
62	Digging of 155 wells for drinking water in Zanjad Waghaz Nuwa Muqur Gailan Qura 4650 beneficiaries	Ghazni	MRRD/MoM/MEW	1387				
63	Construction of water saver dam (Khaki Dam)	Ghazni	MEW	1387				
64	Construction of protection wall in the area of Mullah Noh Baba, in 400 meter,	Ghazni	MEW	1387				
65	Construction of two small dams in Kushk Rabatsangee District (Khoshab Sya) and Pashtoon Zarghon district (Kambraq).	Hirat	MEW/MRRD	1387				
66	Digging of shallow wells in districts and cities (125 wells).	Hirat	MRRD/MoM/MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
67	Construction of Ainak dam in Kushk and Rubat Sangi districts.	Hirat	MEW	1387				
68	Construction of Pashtan dam in Injil district.	Hirat	MEW/MRRD	1387				
69	Construction of Gabion protection walls in 15 districts (10 km).	Hirat	MRRD/MEW	1387				
70	Digging of deep wells in Adraskan and Ghoryan district (2 wells).	Hirat	MoM/MEW	1387				
71	Construction of Pashtun dam in Injeel district (180000) beneficiaries.	Hirat	MEW	1387				
73	Construction of reservoir in Eshkamish district (20000 beneficiaries)	Takhar	MEW/MRRD	1387				
74	Digging of shallow wells (20 pcs)	Takhar	MRRD/MoM	1387				
75	Digging of drinking water wells.	Takhar	MRRD/MoM	1387				
76	Digging of shallow wells (30 pcs).	Takhar	MRRD/MoM	1387				
77	Construction of drinking water network in Warsaj district.	Takhar	MRRD	1387				
78	Digging of deep well (25 pcs).	Takhar	MRRD/MoM	1387				
79	Digging of 20 pcs of shallow well.	Takhar	MRRD/MoM	1387				
80	Digging of medium depth wells in all districts of Takhar province (70 wells).	Takhar	MRRD	1387				
81	Extension of water supply pipe in Rustaq district (2000 beneficiaries).	Takhar	MRRD	1387				
82	Construction riverside protection wall (5km, 6000 families as beneficiaries).	Takhar	MEW	1387				
83	Construction and piping of drinking water in Ghaira district (3000 beneficiaries).	Takhar	MRRD	1387				
84	Construction of water dam in Eshkamish district (10,000 beneficiaries).	Takhar	MEW	1387				
85	Sustainability of agricultural head-works in Tagab-i-Bedcha Aab village (10,000 beneficiaries).	Takhar	MEW/MAIL/MRRD	1387				
86	Sustainability of flood protection in Yangi Qala district.	Takhar	MEW/MRRD	1387				
87	Provision of drinking water projects in Hazar Samoij district.	Takhar	MRRD	1387				
88	construction of Dam About 300x500M in Sanglakh JalrizDistrict Beneficiaries 280000	Wardak	MEW	1387				
89	Construction of Dam in Baghak about 250x300M	Wardak	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
90	Construction of Dam in Centre of Beh Sood 1 Beneficiaries 150000	Wardak	MEW	1387				
91	Construction of Headwork's in Pacheragam District About20 Headwork's Beneficiaries 65000	Nangarhar	MEW	1387				
92	Cleaning of Karez system in Ghani Khil 36 Kariz (12000beneficiaries).	Nangarhar	MRRD	1387				
93	Construction of Small Dams and Canals in Nazyan District About 10 Canal & Small Dams 60000Beneficiaries	Nangarhar	MEW/MRRD	1387				
94	Clining of Kariz system in Rodat District 20 kariz Beneficiaries 50000	Nangarhar	MRRD	1387				
97	Construction of the perimeter wall of Nangarhar university.	Nangarhar	MEW	1387				
98	General Head work of Khiwa (Sar Band) in Khiwa district. Beneficiaries 120000	Nangarhar	MEW	1387				
99	Wazir Tangi head-work and Water Reservoir in district Khogiani.Beneficiaries 170000	Nangarhar	MEW	1387				
100	Construction of Head Works in Peache Tangi Achen District Beneficiaries 70000	Nangarhar	MEW	1387				
101	Construction of the Bandi Park Head works Yousaf Khil district (water storage system OR canalization) 125m (95000 beneficiaries).	Paktika	MEW	1387				
102	Construction of the Bandi Wazmi Head works Tarvi Urgan district (water storage system OR canalization) 50m (90000 beneficiaries).	Paktika	MEW	1387				
103	Construction of Asia Dadullah headworks (Reservoir and canalization system) in Srah Waza (80m, 50000 beneficiaries)	Paktika	MEW	1387				
104	Construction of Dost MoPHammad headworks Reservoir and canalization system) in Waza (140m 50000 beneficiaries).	Paktika	MEW	1387				
105	Construction of Patana headworks (reservoir and Canalization system) in central Paltawe (120m, 40000 beneficiaries)	Paktika	MEW	1387				
106	Survey and construction of head-work of a water dyke in Estalef valley, Estalef district.	Kabul	MEW	1387				
107	Construction of a dam in Lalandar district.	Kabul	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
108	Survey and digging of Parwan Canal from Panjshir river.	Kabul	MEW	1387				
109	Construction of dam (2000 beneficiaries). In Paghman.	Kabul	MEW	1387				
110	Rehabilitation and cleaning of karizez in villages of Mir Bacha Kot district, (150 karizez, 450 km 75,000 beneficiaries).	Kabul	MRRD	1387				
111	Construction of protection wall along the Kabul and Logar river, (18 km total, 2500 beneficiaries).	Kabul	MEW	1387				
112	Construction of protection wall, culvert and dam, Estalef district (2500 beneficiaries).	Kabul	MEW	1387				
113	Reconstruction of water supply network in Bagrami district (3000 families as beneficiaries).	Kabul	KM/MoUD	1387				
114	Survey and digging of Parwan Canal from Panjshir river.	Kabul	MEW	1387				
115	Construction fo 7 dam along to Naqikhan canal in Khan Abad district.	kundoz	MEW	1387				
116	Construction fo 7 dam along to Naqikhan canal in Khan Abad district.	kundoz	MEW	1387				
117	Construction of culverts in Archi district (Ongoing/MAIL)	kundoz	MAIL	1387				
118	Reconstruction of "Pr Chaba Naqi" canal with all canal networks in centre of Kunduz (7km, 200,000	kundoz	MEW	1387				
119	Reconstruction of canal (Zabir) in Emam Saheb district (150 km 150,000 beneficiaries).	kundoz	MEW	1387				
120	Construction of riverside protection in Char Dara (5km 50,000 beneficiaries).	kundoz	MEW	1387				
121	Reconstruction of Archi canal from head-work to end, (70 km 700,000 beneficiaries).	kundoz	MEW	1387				
122	Reconstruction of water supply project of Khan Aabad and reconstruction of hydro-power.	kundoz	MEW/MRRD	1387				
123	Construction of water supply network and its distribution system in Sar Bagh, centre of Aibak & remote areas of Aibak (20000 families directly,180000 families indirectly as beneficiaries)	Samangan	MRRD	1387				
124	Digging of deep well in Roy Do Aab district (30000 families as beneficiaries)	Samangan	MoM/MRRD	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
125	Construction of dam (24000 families as beneficiaries). In Dara e Sof Bala.	Samangan	MEW	1387				
126	Construction of water supply network and its saving, centre the province.	Samangan	MoUD/IDLG	1387				
127	Construction of diversion dam (water for drinking and irrigation) in Khuram and Sarbagh district	Samangan	MoAIL/MEW/MRRD	1387				
128	Construction of diversion dam in Roi Do Aab district.	Samangan	MoAIL/MRRD/MEW	1387				
129	Digging of a deep well in Toqsun village in Dara-i-Suf Payen (5,000 households will benefit).	Samangan	MRRD/MoM	1387				
130	Construction of a flood protection wall in the centre of Khuram and Sarbagh district (3,000 household beneficiaries).	Samangan	MEW	1387				
131	Construction of a diversion dam in Dara-i-Suf Payen district (25,000 beneficiaries).	Samangan	MEW/MRRD/MAIL	1387				
132	Construction of storage dam in Dara-i-Suf Bala (30,000 beneficiaries).	Samangan	MEW	1387				
133	Digging of deep wells and establishment of veterinary clinic at province level.	Kapisa	MRRD/MoM	1387				
134	Excavation of shallow wells and construction of canals in 6 districts and centre of province (55 wells for each district).	Kapisa	MRRD/IDLG	1387				
135	Construction of water network, reservoir and maintenance of Water Resources in all districts (72000 beneficiaries).	Kapisa	MEW/MRRD	1387				
137	Construction of Mahmood Raqi Water Resource network in Mahmood Raqi area(1400m)	Kapisa	MEW	1387				
138	Strengthening and more excavation of Panjshir river in the centre of Kapisa area.	Kapisa	MEW	1387				
140	Construction of a dam on the Panjshir river in Gulbahar (about 30000 m3).	Kapisa	MEW	1387				
141	Rehabilitation of Baghdara hydro dam in Jangal Bagh Nijrab	Kapisa	MEW	1387				
142	Construction of protection walls in province and district level (31 walls)	Kapisa	MEW	1387				
143	Diversion of Nijrab river.	Kapisa	MEW	1387				
145	Construction of hydro dam in Khan Girdak area of Murghab district.	Badghis	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
146	Construction of water supply dam in Qarqito (length=120m and width =20m).	Badghis	MEW	1387				
147	Construction of water supply dam for Kochiz(nomads) in 6 districts.	Badghis	MRRD	1387				
148	Extension of water supply network in Qalai Naw district (200m).	Badghis	MRRD	1387				
149	Construction of protection wall in Jawand district (500 meter).	Badghis	MEW/MRRD	1387				
150	Construction of dam for irrigation in Bala Murghab (120,000 beneficiaries).	Badghis	MEW/MAIL	1387				
151	Construction of protection wall in Bala Murghab, 500 meter	Badghis	MEW	1387				
152	Construction of hydro dam in Khan Girdak area of Murghab district.	Badghis	MEW	1387				
153	Digging of 62 drinkable water wells (120000 families as beneficiaries.	Sari pul	MRRD/MoM	1387				
154	Construction of water diversion dams in Syad and Kohestanat districts (20000 families as beneficiaries)	Sari pul	MEW/MAIL	1387				
156	Rehabilitation the two waste water storage of the city (At district 4 of the city) about 6 Km. For the 850000 people.	Kandahar	MoUD/IDLG	1387				
157	Making the water control gate in irrigation canals, at Dand, Daman, and Arghandab districts. For 200000 persons, need 70 gates	Kandahar	MEW/MAIL	1387				
158	Making the water control gate in irrigation canals, at Shawali kot and Arghandab districts. For 250000 persons, need 20 gates.	Kandahar	MEW/MAIL	1387				
159	Repairing the system of drinking water for 17 districts as well as that for Kuchis (2,100 metre wells). About 2100 depth (500,000 people)	Kandahar	MRRD	1387				
160	Construction of Canals and Karez system (about 9,000 km through 15 districts).(500,000 beneficiaries).	Kandahar	MRRD	1388				
161	Water supply project in the centre of the province (20000 beneficiaries).	Logar	MoUD/IDLG	1387				
162	Construction of water diversion dams in the centre of the province, Baraki Barak and MoPHammad Agha (benefitting three districts).	Logar	MEW/MAIL	1387				
163	Repair of Kharwar dam and its network in Kharwar district (benefits Charkh and Kharwar).	Logar	MEW	1387				
164	Construction of dam in Kala Gosh Alingar District	Laghman	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
165	Extension of City Drinking water Network in centre About 25 km Beneficiaries 1500 Families	Laghman	MoUD/IDLG	1387				
166	Construction of protection walls, Qarghaee districtMulakhkil Kachara /Kachona and Related areas (2) km 1500 beneficiaries).	Laghman	MEW	1387				
167	Construction of Mehterlambaba garden canal (7km, 2000 beneficiaries).	Laghman	MEW	1387				
168	Construction of protection walls, in Tergaro in Baba Sahib Side Related areas (2) km 2200 Beneficiaries).	Laghman	MEW	1387				
169	Excavation of 25 drinking water wells for kuchies (500 families as beneficiaries).	Laghman	MRRD	1387				
170	Construction of protection wall (600m in Qarghai district 500m in the centre of Laghman, Gabela, Mulakhil, Shamtai Bela, Mir Hasan villages).	Laghman	MEW	1387				
171	Construction of water reservoir, Alingar district	Laghman	MEW/MAIL	1387				
172	Construction of water cultivation sub headworks (small) Abad village, Charbagh district, (1000 families as beneficiaries).	Laghman	MEW/MAIL/MRRD	1387				
173	Construction of the Tangi Sapidar reservoir in Shinki district.	Zabul	MEW	1387				
174	Construction of the Chogai Reservoir and dam.in Share Safa District	Zabul	MEW	1387				
175	Construction of water diversion dams. in Arghandab District Beneficiaries 45000	Zabul	MEW/MAIL	1387				
176	Cleaning and Clearing of Canals and Kariz about 150 Kariz in 118 villages of Nawbahar District	Zabul	MRRD	1387				
177	provision of Drinking Water in Shah Joi District Beneficiaries 90000	Zabul	MRRD	1387				
178	provision of Drinking Water in share Safa District Beneficiaries 80000	Zabul	MRRD	1387				
179	provision of Drinking Water in Mizana District Beneficiaries 36000	Zabul	MRRD	1387				
180	Excavating of deep wills in Shamalzai District About 100 Beneficiaries 50000	Zabul	MoM/MEW/MRRD	1387				
181	construction of Protection Wall in Arghandab Khwazagai Mali Khil Walgai and Refuge Area About 410 M Beneficiaries 2500	Zabul	MEW	1387				
182	Establishment of drinking water system in Chora district (10km 20000	Urozgan	MRRD	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
	beneficiaries).							
183	Excavation of 600 drinking water wells in Gizab district (30000 beneficiaries)	Urozgan	MRRD	1388				
184	Construction of Rural Roads and Culvert About 130 Km in Khas Urozgan District Beneficiaries 40000	Urozgan	MEW/MRRD	1387				
185	construction of Dam in Agha Jan Area About 100M Beneficiaries 200000	Urozgan	MEW	1387				
186	construction of Dam in Sar Tangi Khas Urozgan Meghar Chora District About 100 M beneficiaries 150000	Urozgan	MEW	1387				
190	Provision of Drinking Water for Tarin Kot Beneficiaries 50000	Urozgan	MoUD/IDLG	1387				
191	Excavation of 30 wells for kuchis in Soly Kalai, Tarin Kot	Urozgan	MRRD	1387				
192	Dam construction (for irrigation) in centre of Ghor province and all districts (Gharmab dam).	Ghor	MEW/MAIL	1387				
194	Construction of canal head-works (Shaikh Mahmood Canal).	Farah	MEW	1387				
195	Cleaning and clearing of 600km canals & 420 km kariz. beneficiaries750000.	Farah	MRRD	1387				
196	Construction of Sheikh Mahmood canal headworks (380m Sheab Koh district, 15,000 beneficiaries).	Farah	MEW	1387				
197	Construction of head-works	Nimroz	MEW	1387				
198	Cleaning of canals and instalment of protection doors in Chakhansor district. 25 km Canals 200 Doors	Nimroz	MRRD/MEW	1387				
199	Cleaning of Nahr e Shahi canal in Zaranj.20 km Beneficiaries 10000	Nimroz	MRRD/MEW	1387				
200	Construction of canalization network from Halili source in Chaghansor district (180 km).	Nimroz	MoUD/IDLG	1388				
201	Excavation of shallow wells and construction of canalization network in centre of province. (4 wells and 120 km of canals).	Nimroz	MoUD/IDLG	1387				
202	Extension of hydro dam to Kang and Chaganso districts (150 km).	Nimroz	MEW	1387				
203	Construction and cleaning of Sikhsang and Ebrahim Khail dam and canal (30 km canal and 300m dam).	Nimroz	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
204	Construction of Nahre Sraj Canal Head Work Beneficiaries 200000 Farmers	Hilmand	MEW	1387				
205	Excavation of well for drinking water (350 total in all districts, beneficiaries animal husbandry & Kuchis).	Hilmand	MRRD	1387				
206	Reconstruction & cleaning of canals Kajaki district	Hilmand	MEW	1387				
207	Excavation of new canal from Kajiki to Musa Qala	Hilmand	MEW	1387				
208	Constructing of Protection Wall Bust Village About 200M/ Beneficiaries Bust Village.	Hilmand	MRRD/MEW	1387				
209	Protection wall (8km in Nadershahkot district 20000 beneficiaries).	Khost	MRRD/MEW	1387				
210	Establishment of drinking water system (50 km 200000 beneficiaries).	Khost	MRRD	1387				
211	Construction of Shamal protection wall (5km 20000 beneficiaries).	Khost	MEW/MRRD	1387				
212	Provision of drinking water in Khost city (41,000 beneficiaries)	Khost	MoUD/IDLG	1387				
213	Cleaning of canals and drains at provincial level (70 canals and 350 drains)	Khost	MEW/MRRD	1387				
214	Construction of protection walls in Shomol , Lakan , Spera, Mandozai, Alishir (12 km).	Khost	MEW/MRRD	1387				
215	activation of Managai Micro heydel system and constructing of canals	Kunar	MEW	1387				
216	Water reservoir for Manwari rain- fed land.	Kunar	MEW	1387				
217	Construction of water canal from Noorgal River about(15km)	Kunar	MEW	1387				
218	Head works for canals in Chaoki district.	Kunar	MEW	1387				
219	Construction of Head Works in Karhala Noorgal Salar Bagh Narang and Chawkai About 5 Centres.	Kunar	MEW	1387				
220	Construction of Drinking Water Network About 2 KM in Nari District Jaba village	Kunar	MRRD	1387				
221	Creation of a Water Reservoir /irrigation system for agricultural purposes in Gharak District, AhmdAbad	Paktia	MEW/MAIL	1387				
222	Construction of Dam (Water Storage) in Dund Patan (50 m).(Dund Patan district).	Paktia	MEW	1387				

No.	Project Name	Project Location	Responsible agency	Project Duration (year)		Funding (US\$ Millions)		
				Start	End	Total Req	Funded	Gap
223	Construction of headworks for water storage & construction of the protection walls in Patan district (10 km, 100,000 beneficiaries).	Paktia	MEW	1387				
224	Rehabilitation of water supply project of Khair Khana region.	Kabul Urbon	MoUD/KM	1387				
225	Rehabilitation of drinking water network in district # 13.	Kabul Urbon	MoUD/KM	1387				
226	Provision of drinking water through water pumps in district 21 and 40000 families will be benefited.	Kabul Urbon	MoUD/Km	1387				
227	Construction of water storage dam in Karta-i-Sakhi hill and 200000 families will be benefited	Kabul Urbon	KM/MoUD	1387				
228	Construction of water supply network in Sayed Noor Mohammad Shah mena. 3 Km and 4500 persons will be benefited form the project.	Kabul Urbon	KM/MoUD	1387				
229	Construction of water diversion dam, in Gul Bakh district and 7000 persons will be benefited.	Kabul Urbon	KM/MoUD	1387				
230	Extendtion of Water network from Lala Bagh Salang up to Charikar city	Parwan	MEW	1387				
231	Construction of water reservoir dam (40m height 55m width (25000 families as beneficiaries) Alishing District	Laghman	MEW	1387				
232	Construction of water reservoir dam (60m)(2000 families as beneficiaries) Alingar District	Laghman	MEW	1387				
233	Construction of Nahre Shahi canal from Alingar district to centre (20 km 30000 families as beneficiaries).	Laghman	MEW	1387				
234	Construction of Dam in Tangi Dawlat Shah About 20m Beneficiaries 1500families	Laghman	MEW	1387				
235	Establishing of irrigation water supply network in all districts and centre, 750000 beneficiaries.	Farah	MEW	1387				



Islamic Republic of Afghanistan
Afghanistan National Development Strategy Secretariat
Gul Khana Palace, (Sedarat)
Kabul, Afghanistan
www.ands.gov.af