Ghezel Owzan-Sefid Rud Watershed

Basin Potentials

- Land Mass: 60000 Km²
- Different climates
- Water Mass: Average Basin Precipitation (390 mm)-23 BCM
- Growing Industries
- Growing Population (4 million – 1996 Census)
- Agricultural Area: 2.2 Million Ha
- Other natural resources
- Stakeholders – 8 Provinces
- Multitude of Projects (176) : (Operating, Under Construction, Study Phase)

添付資料2-1　既存流域管理調査概要資料

Mahab Ghodss Presents

Ghezel Owzan-SefidRud Basin

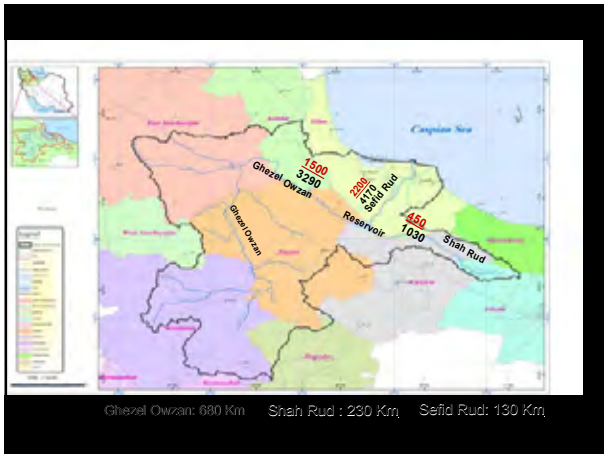
Integrated Water Resource Planning

Mahab Ghodss Consulting Engineering

Primary Goals and Priorities

As Stated in Contract

- Goals:
  1. Review and update of water resource potentials and consumptions
  2. Water resource planning/allocation programme for existing and future demands
  3. Evaluation of projects significance based on resources and consumptions
  4. Project selection proposal
- Water Potentials Evaluation (present / future)
  1. Surface Water
  2. Groundwater
- Demands Evaluation (present / future)
  1. Municipal / Industrial
  2. Agricultural
  3. Minimum Required Environmental Flows
- Horizon 30 year
- Water Use Priorities
  1. Basin water rights users
  2. Basin municipal / industrial
  3. Gilan irrigational demands (irrigational efficiency improvement)
  4. Basin environmental demands
- Water Supply Priorities
  1. Present operating system and existing dam structures
  2. Dams under construction
  3. Dams under investigation



Technical Studies

1. Metrology and Climatology (finalized)
2. Surface water hydrology (currently under investigation)
3. Groundwater hydrogeology (finalized)
4. Municipal and industrial water supply needs (finalized)
5. Environmental studies (finalized)
6. Soil Studies (finalized)
7. Agricultural Studies (finalized)
8. Irrigation-Drainage Investigation (finalized)
9. Water Resource Planning (initialized)
10. GIS database (continues)

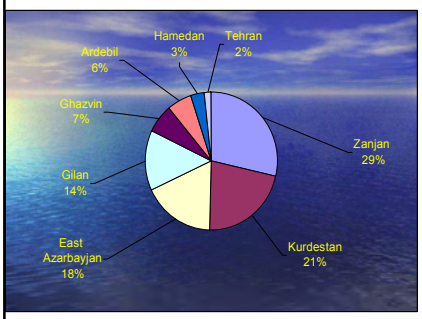
Executive Institutions

Project Number, and Progress State

Number of projects in the Provincial Executive Branches											
		Prov. Water Authorities				W.A Total	Agricultural Jihad				A.J Total	Prov. Total
No.	Province	Oper.	Const.	Design	Study		Oper.	Const.	Design	Study		
1	Zanjan	4	3	1	11	19	18	10	0	15	43	62
2	Gilan	4	1	0	1	6						6
3	Kurdistan	35	3	0	5	45						45
4	E. Azerbaijan	20	6	2	6	34						34
5	Ghazvin	0	0	0	1	1						1
6	Ardebil	12	1	2	10	25						25
7	Hamedan	0	0	0	2	2						2
8	Tehran	1	0	0	0	1						1
Study Area		77	14	5	37	133	18	10	0	15	43	176

Provincial Study Area (Km²)

% share of land mass

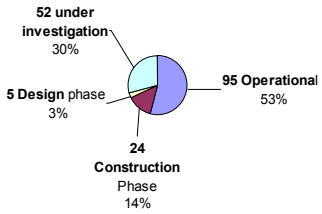


Provincial Area (Ascending)

#	Province	Area	%
1	Zanjan	18330	28.7
2	Kurdestan	13701	21.5
3	East Azerbaijan	11373	17.8
4	Gilan	9161	14.3
5	Ghazvin	4227	6.6
6	Ardebil	3942	6.2
7	Hamedan	1995	3.1
8	Tehran	1130	1.8
Total Area Km²		63858	100.0

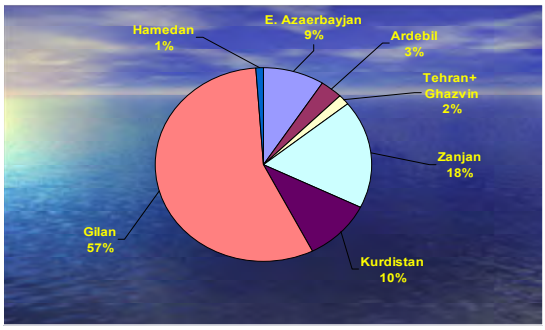
Cities Map

Projects' Phases



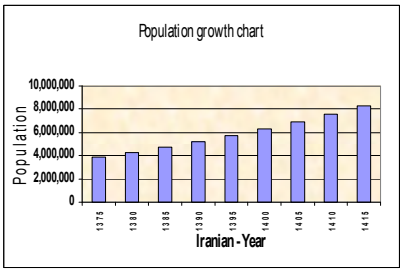
Provincial Population Share

(1996 Census)

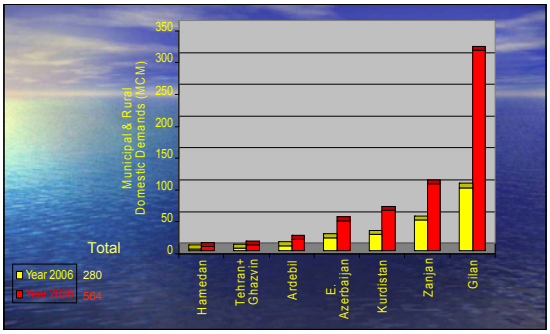


Study Area population Growth

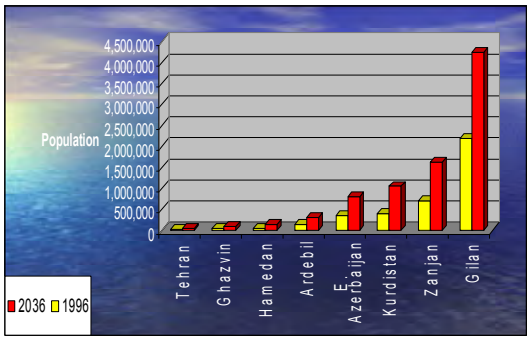
Year	Population
1375	3902800
1380	4296294
1385	4727327
1390	5203853
1395	5723983
1400	6289681
1405	6909481
1410	7576284
1415	8297335



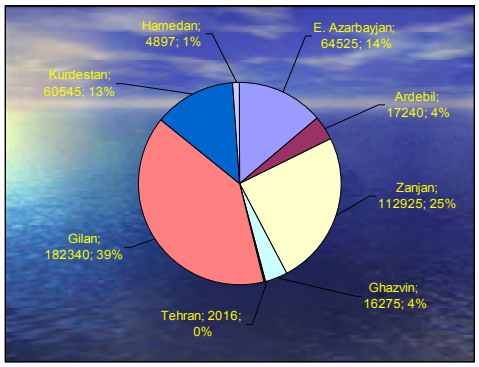
Municipal & Rural Domestic Demands
(MCM/Year)



Population Growth in Study Area
Provincial Estimates (1996 & 2036)

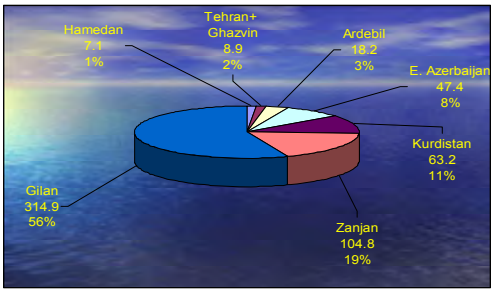


Provincial Irrigated Area
Total (460,000 ha)

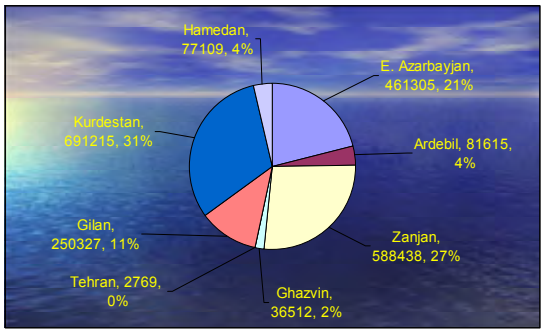


Provincial Domestic & Rural Demands

564 MCM/Year - 2036



Provincial Agricultural Area
Including: Irrigated, Rain-fed, Fallow, Farms, Orchards+ Intensity
Total(2.18 million ha)



Dams Significance

- 176 Small to large dam projects

  (Operational+ Under construction+ Design or Study Phase)
  (Total storage capacity: 5620 MCM) – Data shortage 46 dams

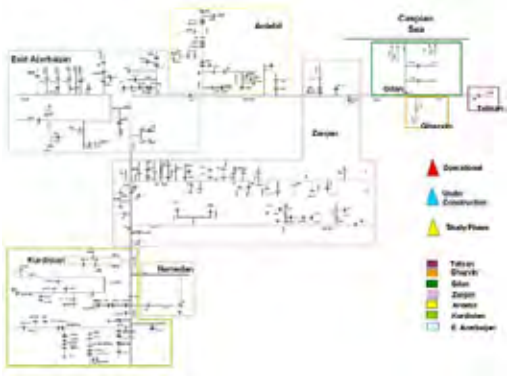
- 38 Dams with storage data ≥ 5 MCM

  (Total Capacity 5500 MCM – Accounts for 98% of total capacity)

- 92 Dams with storage data < 5 MCM

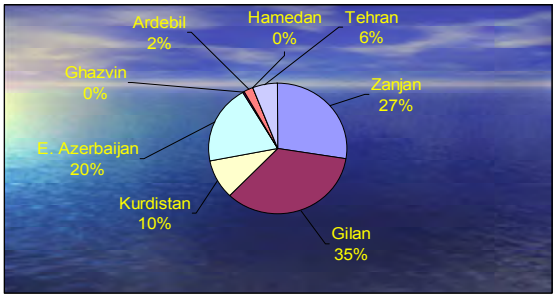
  Total Capacity 120 MCM - Accounts for 2% - Insignificant – Seasonal rivers

System Configuration (176 Dams)

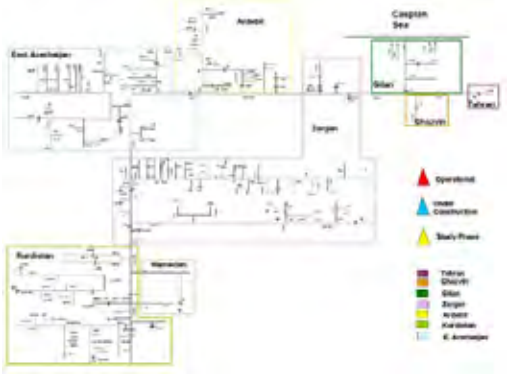


Provinces Storage Capacity Share

% share of total capacity (5500 MCM)
(Operational, Under Construction, Design or Study Phase)



System Configuration for 38 dams ≥ 5 MCM



Location Map

climatologic / meteorological station

System configuration map

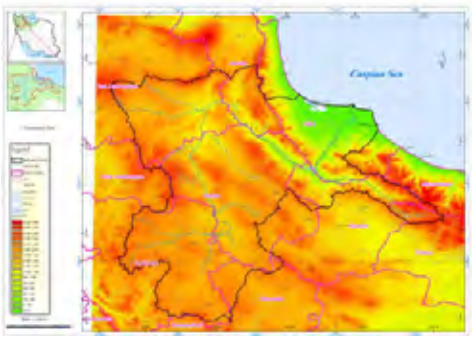
38 Dams, 24 Hydrometric Stations, 56 River Reaches

Plains / Mountains

Mountains　Plains

Hypsometric Map

Used in Meteorology, Climatology, Hydrology



Gilan Irrigation Network

Irrigated Area 182,000 ha　Rain-fed 62,000 ha　Agricultural 250,000 ha

Land Use Map

Dry farming　Irrigated farming / Orchards　Range

Basin River Network

Surface Water Network Map

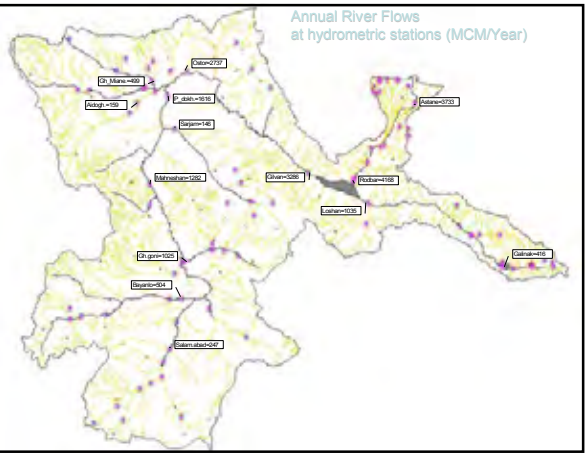
Selected River Reaches

Location Map
Hydrometric Stations

Groundwater Map

Wells Springs Qanat

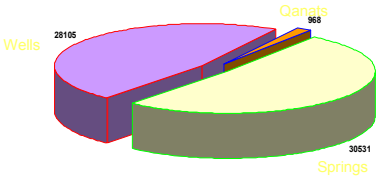
Annual River Flows
at hydrometric stations (MCM/Year)



Groundwater Study Areas Sub-basins
(total Area = 66300 Km²)

No.	Sub-basins	Sub-basin Code	Area surface area (Km²)
1	Astane, Koochesfahan	1301	2835
2	Tarom, Khalkhal	1302	8604
3	Miane	1303	9226
4	Zanjan	1304	4626
5	Man neshan, Angooran	1305	6772
6	Sajas	1306	2497
7	Gol Tapeh, Zarinabad	1307	5124
8	Ghorveh, Dehgalan	1308	6978
9	Divandareh, Bijar	1309	5385
10	Taleghan, Alamoot	1310	4864
11	Manjil	1311	2260
12	Foomanat (Talesh watershed, Anzali wetland)	1202	3593
13	Lahijan, Chaboksar (Watershed between Haraz and Sefidrood)	1401	3536

Number of Groundwater Sources



Total Resource Points: 59,600

Thank for your attention

Mahab Ghodss Consulting Engineering

添付資料 3-1　水資源配分法

Water allocation law

To: Provincial Regional Water Companies, Khuzestan Water and Electricity Organization, Zanjan water authorities.

Subject: Water allocation law

Hereby the water allocation law is notified to be enforced in line with the implementation of the Fair Water Distribution Act and the policies of the Energy Ministry in order to organize the planning of water allocation, improve water resources, create a rational balance between water supply and demand, define a proper framework to respond to new demands by prioritizing the type of consumption, using potentials of water resources, and transferring water from basins with consideration of social and environmental factors and quality and quantity of water resources.

We hope with the full implementation of this plan a proper mechanism for the establishment of a national water accountancy system will be created.

All the directors of the regional water companies and Khuzestan Water and Electricity Organization are required to make efforts to fully implement this water allocation law.

A copy to:

- Deputy Director for water affairs.
- Deputy Director for planning and supervisory affairs.
- Deputy Director for water and wastewater affairs.
- Deputy Director for legal and parliamentary affairs.
- Investigation office.

Water Allocation Law:

Chapter I: Definitions and concepts

Article 1: Legal documentation

This water allocation law has been issued based on Articles 21 and 29 of the Fair Water Distribution Act and Article 1 of Energy Ministry establishment law in line with the implementation of the Fourth National Development Plan.

Article 2: Objectives

Organizing the process of water allocation in order to implement the Fair Water Distribution Act, create a balance between water supply and demands, achieve an integrated water resources management plan by adopting proper approaches, improving decision-making process, and establishing a national water accountancy system.

Article 3: Implementation area

All watershed basins of the country and also all rivers flowing to the country.

Article 4: Definitions

Words and statements used in this document are as follows:

4-1- **Company:**
Regional water companies or similar units to be established later.

4-2- **Water allocation:**
The amount of water determined by the Ministry of Energy to be allocated to different consumptions. The Ministry of Energy determines the amount of water allocation in each study area, watershed basins, and rivers flowing to the country with the consideration of water resources potential and the users' water rights.

The Ministry of Energy also authorizes the companies to issue usage permits for users to use the allocated water.

4-3- **Allocator:**
Ministry of Energy which will take measures through the Water Resources Management Organization (hereafter referred to as the Organization)

4-4- **Company's information bank:**
An information bank to be established for keeping records, documents, and usage permits issued by each company.

4-5- **Organization's information bank:**
An information bank to be established in the Organization only for the whole county's water allocation plans to keep records, documents, and usage permits of the country's water allocation in a computer network.

4-6- **Commission:**
A water allocation commission in the Organization.

4-7- **Company's water resources management committee:**
A committee to be established in the company to coordinate policies and plans of this water allocation law.

4-8- **Usage permit commissions:**
These commissions have been established in the companies based on the Fair Water Distribution Act to deal with usage permit affairs.

4-9- **Water allocation permission:**
A permission which is given to the company with the approval of the commission in order to issue usage permits for different consumptions.

4-10- **Usage permit for water usage:**
A document issued by the company based on the regulations of water allocation permission for a specific period of time.

Article 5: Water allocation will be for the following consumptions:

- Drinking and sanitary usage
- Industry
- Agriculture
- Environment protection
- Farming
- Fishery
- Hydropower
- Services
- Other

Article 6: Water allocation resources include all general water resources mentioned in the Fair Water Distribution Act.

Chapter II: Water allocation structure and responsibilities

Article 7: The following measures will be taken in order to institutionalize the process of investigation of water resources potential and facilities:

- Establishment of a water allocation commission in the organization.
- Establishment of water resources management committees in the companies.

Article 8: Responsibilities and members of the commission:

8-1- **Responsibilities:**

- Formulation of natural water allocation policies.

- Determination of the amount of water that should be allocated from surface and groundwater resources for different consumptions in watersheds and study areas throughout the country, considering priorities and quality and transfer limitations.

- Making decisions about regulated water resources at dams and water resources development projects and determining the amount of water that should be allocated to different consumptions.

- Making decisions about the transfer of water between basins.

- Addressing the companies' requests.
- Making decisions on how to collect data and statistics and establish information banks in the Organization and the companies.

- Reviewing previous allocations in order to confirm or reform them based on evaluation reports.

- Making decisions on revising allocations in droughts and water rationing seasons based on Article 29 of the Fair Water Distribution Act.

- Making decisions on the management of civil and industrial wastewater and agricultural returned water.

8-2- **Members of the commission which will be chaired by the director of the Organization:**

- Deputy Director for Planning
- Deputy Director for Usage and Protection Affairs
- Deputy Director for Research and Basic Studies on Water Resources
- One water resources expert that will be chosen by the Chairman of the commission
- Director of the Design and Planning Office

Notice: The directors of the related companies or their representatives will be invited to attend the commission meetings whenever necessity arises.

8-3- **Commission Secretariat:**

The commission secretariat is located in the Organization's design and planning office and the commission's secretary will also serve as the secretariat's managing director.

8-4- **Responsibilities of the commission secretariat:**

- Formulating the schedule of the commission's activities, doing coordination and connection between the commission and the company committees and pursuing the decisions by the commission.
- Preparing approved water allocation permissions to be notified to the companies.
- Preparing needed documents and reports.
- Designing and establishing information bank for water allocation, resources, and consumption.
- Receiving the proposals of the company committees about the amount of the allocated water from surface and groundwater resources in watersheds and study areas throughout the country (especially the demands included in the Article 12 of the chapter second of Fair Water Allocation Act) considering the priorities and quality limitations.

Notice: For the implementation of the above responsibilities the existing facilities of the committees will be used and if necessary, new facilities will be created inside or outside the Organization.

Article 9: Responsibilities and members of the company committees:

9-1- **Responsibilities:**

- Implementation of the commission's policies.
- Giving proposals to the Organization about the amount of allocated water from surface and groundwater resources in watersheds and study areas under the authority of the related company.
- Examining and making decisions about the requests that the company has received based on allocation limitations.
- Supervising the collection of data and statistics and establishing the company's information bank.
- Investigating and confirming water resources and consumption reports in the areas under the authority of the company.
- Supervising the usage of allocated water and preparing reports to send to the commission.

9-2- **Members of company's water resources management committee:**

- Director of the company (committee chairman)
- Deputy Director for basic water resources studies.
- Deputy Director for usage.
- Deputy Director or director of planning and management improvement bureau.
- One water resources management expert in the region chosen by committee chairman.

9-3- The Company committee's secretariat will be located in the planning and management improvement bureau and the director of the company's planning and management improvement bureau will also serve as the secretariat's director.

9-4- The responsibilities of the Company committee's secretariat:

- Creating coordination between the Organization's commission and the usage permit commissions.
- Preparing and filing the minutes of meetings and the decisions made in the company committee.
- Preparing the schedule of the activities and meetings in the company committee.
- Pursuing the committee's decisions and preparing the needed documents and reports.

Article 10:
The members of the commission and the members of the company committees will be elected by the director of the Water Resources Management Organization.

Article 11: Information Banks

Water Allocation Information Banks will be established in the Organization and the companies in order to prepare the ground for long-term planning and keeping the records and characteristics of the allocated water.

11-1- The information banks are established in the Organization and the companies and they will be connected to each other through a computer network.

11-2- The commission secretariat is responsible to establish and run the water allocation information bank in the Organization as the central information bank and the committee secretariat is responsible to establish such banks in the companies.

11-3- All companies are required to prepare, store, and process the needed information and send them to the Organization based on the regulations of the information banks.

Chapter III: Structure and operation of water allocation

Article 12: The commission will take the following measures based on the committees' proposals and the existing documents, considering the water resources development policies and strategies.

A) The commission should determine (and notify the companies) the amount of groundwater that should be allocated to each study area under the authority of each regional water company for a specific period of time, considering the free and forbidden areas and different consumptions (Especially the demands included in the Article 12 of the Fair Water Allocation Act). Any change in the amount of allocated water will be done after proper examination of groundwater resources.

Notice: In the areas that are jointly under the authority of two or more companies, the commission will determine the share of each company.

B) In the watershed areas that are located under the authority of more than one company, the commission will determine each company's share of the surplus surface water for specific period of time by taking the following factors into consideration:

- Regulated water resources at water resources development projects which have been explained in Article 19.

- Water resources from inter-basin transfer

C) The companies will be informed of their water allocation share in the joint rivers and water resources on the borders based on the protocols and agreements signed by Iranian government and neighboring countries, considering Part B (above).

D) After receiving proposals from the company committees and determining the amount of allocated water, the commission will carry out the allocation of surface water in the rivers whose watershed is totally under the authority of one company.

Notice: The companies' request to change the allocation from one consumption to another will be examined concurrently with the determination of the amount of allocated water.

Article 13: The companies are required to examine the request based on their legal authorities and current regulations in order to issue usage permits, considering the following items:

-Implementation regulations for improving water consumption in agricultural sector.
- Drinking, industrial, and other demands in the long run based on approved standards.
- Future water demands and development in different regions.
- Regulations for water subscription (usage).
- Regulations of Iran's Protection and Usage of Aquatic Resources Law.
- Article 63 of the regulating the government's financial laws (Granting new water rights).
- Making sure that the returned water has not polluted the water resources.
- observing environmental considerations to protect water ecosystems.

Article 14: From the date when this water allocation law is notified, the requesters' files will not be sent to the Organization for investigation any more, therefore, the order for the implementation of Article 12 of the chapter two of the Fair Water Allocation Act numbered 2235/204/505 (May 13, 1985) and Article 4 to 51 of the order to implement water subscription (usage) plan numbered 75370/3652/10 (September 1, 1996) will be nullified.

Article 15: While supervising the performance of the companies, the Planning Bureau of the Organization will prepare a report on the companies' activities in regards with the observation of water allocation limitations and terms of this document (water allocation law) every six months and will submit it to the commission.

The commission will decide whether it should promote or reform the authorities of the companies based on their performance.

Article 16: The companies are required to store all the information about usage permits in defined formats in their own information banks and also send them to the Organization's information bank.

Article 17: the companies are required to match the usage permits with the level of allocated water and supervise their implementation in order to control water allocation.

Article 18: The companies can issue usage permits only within the specified water allocation level, considering the following factors:

A) The issuance of usage permits for real and legal entities is dependent on the existence of sufficient water allocation.
B) After issuing a usage permit, the annul usage volume should be matched with the type of consumption specified in the usage permit. Any change in the type of consumption, violation of the usage permit terms, or not using the allocated water are subject to legal investigation.
C) The company committee will investigate and decide about (1) the water which has not been used by the holder of the usage permit, (2) surplus water, and (3) the water whose usage permit has been legally revoked.

Article 19: In regard with the fact that the implementation of water development projects may cause a change in he amount of water in downstream, the companies are required to:

A) Prepare a familiarity report of the projects in their initial stages and send it to the commission to get the preliminary approval to start implementation.
B) Take into consideration the possible influences of the projects on water rights and downstream structures.
C) Send a report on the water resources planning of the projects to the Organization to get approval after they are approved by the company committee. (The report should be sent to the Organization after phase one of the studies, which would show the present situation of water allocation and propose water allocation plans for future consumption, is completed).
D) Match the present situation of the operational projects with the objectives of the project and send a report to inform the commission.
E) Inform the commission of the final objectives and allocated resources of the under construction projects which have not got the approval of the commission yet.

Notice: The investigation of regulated water resources of the projects included in the above article and decision-making on allocation for different consumptions will be done with the presence of the Deputy Director for Design and Development in the Organization.

Article 20: The responsibility of implementing this water allocation law is on the shoulders of the Organization at national level ant the companies at provincial level.

Article 21: This water allocation law has been issued in 3 chapters, 21 Articles, and 5 Notices and should be implemented immediately from the date of issue.

Habibollah Bitaraf
Energy Minister

添付資料 3-2　水資源投資促進法

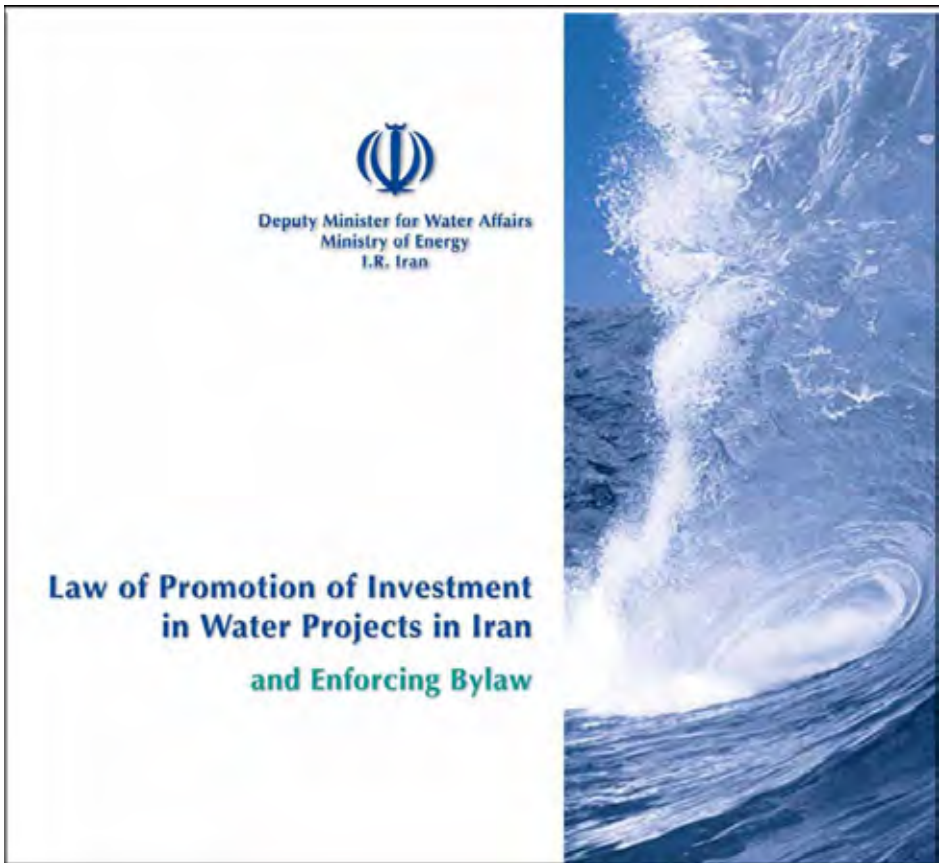


Table of Contents

In the Name of God

Foreword

The development of social and economic capacities for considerable and integrated private and cooperative sectors' participation aiming to enhance national water resources management capabilities is a fundamental strategy that must be emphasized and included in plans and measures.

To encourage investment in water projects increasing surface water resources efficiency and to finance projects in various methods depending on people's participation are included in the actions that can pave the way in this regard.

The plans foreseen for farmers to invest in irrigation and drainage networks within the framework of the 76 of the Second Development Plan Law and the Article 106 of the Third Development Plan, and to motivate people to invest in water supply, irrigation and drainage networks and water and soil projects were regarded as necessary and complementary measures. Therefore, the plan for promoting investment in water projects was examined in 2001 in cooperation with the Parliament Research Center, Ministry of Energy, Ministry of Agricultural Jihad, Management and Planning Organization and

Ministry of Finance and Economic Affairs in Agricultural, Water and Natural Resources Technical Commission of the Parliament. After formalities and exchanging views with esteemed Guardian Council, this plan was approved in August 2002, and the approved single article was notified to the Ministries of Energy and Agricultural Jihad in September 2002.

The bylaw for inforcing the single article drafted by Ministry of Energy, using the expertise capacity of this Ministry, Ministry of Agricultural Jihad, Management and Planning Organization and Ministry of Finance and Economic Affairs, was prepared whithin 6 months and submitted to the Cabinet in March 2003 and was finally approved by the Government Economic Commission on Oct. 10, 2003.

At present, a committee enforcing the bylaw undertaken by the Deputy Energy Minister for Water Affairs has been established with the membership of the plenipotentiary representatives of Ministry of Agricultural Jihad, Management and Planning Organization and Consumers and Producers Support Organization on the basis of the article 2 of the bylaw to enforce the related law according to the 8 tasks included in the bylaw.

Considering all the actions taken in this regard as well as the programs and complementary measures carried out, we hope to make great strides and to pave the way for investment from the viewpoint of quantity and quality and water management.

Reza Ardakanian, Ph.D
Deputy Minister for Water Affairs
(March 2004)

In the Name of God

Your Excellency Seyyed Mohammad Khatami
The President of the Islamic Republic of Iran

In compliance with art 123 of the Constitution of the Islamic Republic of Iran the legal draft of investment Promotion in Water Projects in Iran which was enacted with some modification in open session of sunday 28th July 2002 of the Islamic Consultative Assembly and was confirmed by the Guardian Council is here with enclosed.

Mehdi Karoobi
Parliament Speaker

Law of Promotion of Investment in Water Projects in Iran

Single Article: In order to promote cooperative and private sectors (real and legal entities) to invest in the projects for water supply and construction of drainage and irrigation networks and water and soil, hereby, the Ministries of Energy and the Agricultural Jihad are authorized, in the framework of their legal authorities, to entrust according to following conditions to investors the implementation of the mentioned projects at most 30% of which have been completed as well as the projects whose second phases' studies have been approved:

1- The Ministry of Energy and or the Mininstry of Agricultural Jihad shall approve the project sites and have engineering supervision in all phases.

7

2- All exploitable water, with the exception of the existent water rights, is allocated to the investor, and a water operation document shall be issued. Water rights existing prior to the construction of new installations shall be determined by and shall remain at the disposal of Ministry of Energy to be transferred to their owners according to the Equitable Water Distribution Law approved on March 6, 1983 and other related laws.

3- National and uncultivated lands, which according to project researches, are considered as the lands irrigated by the installations, shall be transferred to investors at the start of operation by Ministry of Agricultural Jihad proportional to the allocated water and economic and social conditions of the region at regional prices prior to the construction of installations fixed by Ministry of Finance and Economic Affairs. The water that is surplus to the transferred lands shall be sold at an agreed price to customers or Ministry of Energy.

4- The rights established through such investments to the extent of the issued water operation document shall belong to the investors,

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and they can sell or use them by selecting an economic pattern agreed by Ministry of Energy in accordance with a contract. All installations constructed and rights established through such investments shall be at the investors' disposal during the operation period to be used according to the regulations.

5- Ministries of Agricultural Jihad and Energy, based on the contract signed with the investor for costs and other terms, are as the case maybe, obliged to take possession of the lands allocated to construction of instalations & implementation of the projects on the basis of land possession law and put them at the investors' disposal.

6- In case of foreign investment the right to utilizing the installations and the allocated lands shall be entrusted to the investor during capital depreciation period, and thereafter the government shall take possession of them.

The investor has priority over others to continue the operation of the constructed installations after the expiration of the mentioned period.

7- Ministries of Agricultural Jihad and Energy are obliged to consider the investor's comments on correcting projects within the framework of technical and safety criteria & standards.
The bylaw of this law shall be prepared by Ministry of Energy in cooperation with Ministries of Agricultural Jihad, Finance and Economic Affairs, and Management and Planning Organization, within three months after the approval of the law, and shall be approved by the Cabinet.
The above law was enacted on the open session of the Islamic Parliament on sunday July 28, 2002; and confirmed by Guardian Council on August 7, 2002.

Mehdi Karoobi
Parliament Speaker

Enforcing Bylaw of the Single Article, Paragraph 7 of the Law of Promotion of Investment in Water Projects of Iran

Council of ministers in the session dated Nov. 9, 2003 and based on the proposal no. 861/31/100 dated Apr. 5, 2003 submitted by Ministry of Energy and by virtue of paragraph 7 of the single article of the Law of promotion of Investment in the water projects of Iran - approved in 2002, the Cabinet approved the bylaw of the said paragraph as follows:

Chapter 1

Definitions

Article 1: The terms used in this bylaw have the following meanings:

a) Existing Water Right: Definition stated in note (1) of Article (18) of the Equitable Water Distribution Law approved in 1982 as well as the waters have already been consumed by persons and the environment, the volumes of which have been approved by Ministry of Energy.

b) Investor: A real or legal person of private and cooperative

sectors (local and foreign) that, in accordance with the regulations set and announced by Ministries of Energy and Agricultural Jihad as the case may be, is ready and able to invest in the water supply, irrigation and drainage networks and water and soil projects.

c) Operation License of Installations: A permit given to an investor to utilize according to the regulations the installations constructed by the related ministry and or the investor through investment.

d) Operation Period: The length of operation period for each project is equal to capital depreciation period that is decided, according to the current regulations, taking into consideration the investment made, and the investor's expected profit, by the related ministry and specified in the contract.

e) Water operation Document: An operation license of water issued by Ministry of Energy on the basis of the patterns determined for any kind of water consumption and percentage of exploitable water and period of operation.

f) Law: The law of promotion of investment in the water projects of Iran approved in 2002.

Chapter 2

Selection and Introduction of Projects

Article 2: To follow up the various phases of the law enforcement

at most one month after the notification of this bylaw, a committee supervised by Deputy Minister for Water Affairs of Ministry of Energy, consisting of plenipotentiary representatives of the Ministry of Agricultural Jihad and Management and Planning Organization as well as Consumers and Producers Support Organization, shall be established with the title of "Executive Committee" with the following terms of reference:

a) To select the approved projects to be entrusted to investors and or assessing and approving the projects proposed by investors in accordance with the provisions of articles 3, 4, 6 and 15 of this bylaw.

b) To fix the required deadline to provide and submit the necessary information and specifications of each project selected by the Ministries of Energy and Agricultural Jihad.

c) To approve investor's excess water share.

d) To determine the general conditions and principles that are to be included in the contracts referred to this bylaw and to supervise the execution of the concluded contracts.

e) To coordinate and cooperate with Organization for Investment Economic and Technical Assistance of Iran to study foreign investors' applications for investing in the projects referred in the Law of Promoting Investment in the Water Projects of Iran.

f) To coordinate the executive instructions required for facilitating the process of entrusting the projects to investors.

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g) To approve the changes proposed by the investor in accordance with the provisions of Article 14 and to detemine the priority and necessity of the projects proposed by the investor according to Article 15 of this bylow.

h) To supervise the regulation of the instructions of fixing the agreed prices to sell excess water by the investor to water users.

Note: The Executive Committee's Secretariat shall be located in the Ministry of Energy. The Committee can establish regional committees, if necessary & entrust a part of its tasks to them.

Article 3: The Ministries of Energy and Agricultural Jihad are obliged to inform the Executive Committee of the titles, goals, main specifications and the estimated costs of all their projects qualified the conditions and specifications mentioned in the law and this bylaw at most within 3 month after the notification of this bylaw and in the next years up to the end of the first three months of every year.

Article 4: Considering the aims of the law, the Executive Committee shall determine the prioity of the announced projects within two months, and at first select several projects (slected projects).

Article 5: After the list of the selected projects is prepared by the Executive Committee:

a) Ministry of Agricultural Jihad is obliged, within the period fixed by the Executive Committee, to specify for each selected

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project the area, region and boundaries of transferable national and uncultivated lands that according to studies are considered as the irrigated lands within the scope of the related project and to provide the map of the related region and the strategies establishing the probable rights of those utilizing the lands legally in accordance with the related laws.

b) Ministry of Energy is obliged, within the period fixed by the Executive Committee for each of the selected projects, to specify the existing water rights related to the project as for the percentage and period of consumption, and to issue water operation documents for the owners of the water rights.

Article 6: Within one month after receiving the report on the measures taken according to the provisions of Article 5 of this bylaw and with regard to their results, the Executive Committee shall prioritize the selected projects again and select and approve a number of them as approved projects to be entrusted to the investors.

Note: The related Ministries are obliged to submit to the Executive Committee the reports on the financial feasibility studies of investment in the selected projects.

Article 7: If the related Ministry decides to entrust to an investor only part of a project, such investor's share from the total water and the total national and uncultivated lands within the scope of this project proportionately must be approved by the Excutive Committee.

Article 8: The main specifications of each approved project,

including the site and conditions of its implementation, goals of the projects, dimentions and volumes of various activities, expected physical progress schedule, cost assessment, the boundaries and area and price of the transferable lands, exploitable water and the excess water according to the issued water operation documents, and the instructions of investigating applications, and any other important features and indicators, shall be notified to the public through mass media by the executive.

Chapter 3

Investigation of Applications and enter into Contracts

Article 9: An applicant investor shall first submit to the related Ministry his or her application as to his or her willingness for investment in any approved project. Such Ministry, after investigating the applications and comparing the applicants' conditions with the instructions approved by the Executive Committee, shall, if it confirms the comparison, declare its approval to the applicants if confirmed.

Note: Utilizing agricultural cooperatives, in equal conditions, have priority as investor over implementing investment projects referred to in this bylaw.

Article 10: After obtaining the approval and the required project documents, the investor must, within the period fixed by the related Ministry, prepare and submit his or her investment schedule proportional to the expected physical progress program of the project

and a valid guarantee for the amount of 1 to 5% of the project implementation costs assessed by the related Ministry based on the provisions of the instructions approved by the Executive Committee.

Note: After the investor has spent an amount equal to the guaranteed amount, on physical operation, the guarantee shall be released and returned.

Article 11: Following the investment schedule and valid guarantee are received, the related Ministry signs and exchanges the contract with the investor at most within 20 days.

Article 12: Ministry of Agricultural Jihad is obliged to take necessary to entrust the irrigable national and uncultivated lands measures of the project on a selling basis within the framework of the related legal provisions in such a way that the lands will be entrusted to the investor on a conditional basis at the start of the project implementation and then at the start of the project operation, the lands shall be definitely entrusted to the investor. Meanwhile, measures shall be taken to establish the probable rights of the legal utilizers of the national and uncultivated lands in regard to the signed contract for the costs.

Chapter 4

Construction

Article 13: The selection of contractor and consultant for the project and the supervision of construction and signing contracts with them are undertaken by investors. However, the contractors

and consultants should be selected from companies designated as qualified by the Management and Planning Organization of Iran, and the related Ministries shall have high supervision over the method of the implementation of different phases.

Article 14: If, for increasing project's efficiency, an investor proposes complementary studies, correction of project goals, change of executive methods, change of dimensions and volume of activities and enforcing value engineering, and modifying & completion of operation system, the proposals shall be applicable, after being considered & approved by the related Ministry, and the rights resulting from the extra activities during the operation period shall be vested to the investor.

Article 15: If an investor proposes a project for investment which is not among the selected and approved projects, the Executive Committee, if considers necessary, shall notify studies there of the cost of which is paid by the investor, to the related Ministry in order

to approve it and issue a general permit for investment in the name of the same investor, after being assured of its priority and technical, economic and financial feasibility, of that project.

Article 16: To manage the project during complementary studies and implementation phases, the investor is obliged to employ, in accordance with the organizational chart enclosed the contract, qualified experts confirmed by the related Ministry and or to take advantage of the services of qualified departments in this regard confirmed by Management and Planning Organization.

Article 17: In all the phases of studying and implementing a project, the investor is obliged to send the copies of the consulting engineers' monthly reports to Management and Planning Organization and the related Ministry.

Article 18: The related Ministry undertakes to decide on the area of the lands required to construct the project and to take their possession and to make them unclaimed. The required lands shall be delivered to the investor proportional to the project's physical progress schedule as follows:

a) Rivers beds are leased to the investor for project operation period according to regional prices.

b) National and uncultivated lands are leased to the investor for project operation period on the basis of regional prices.

c) Lands belong to persons are leased or purchased from their

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owners according to the Law for the manner of Purchase and Possession of Lands to Execute State, Public, Development and Military Plans approved in 1979 and are exactly entrusted to the investor according to the contract signed for costs.

Note 1: Costs for moving and or replacing facilities and buildings such as roads, police stations, etc., situated in the limits of the project site are calculated at the current price and moving and replacing of the same shall take effect, with regard to the contract signed for costs.

Note 2: The method of compensation for the damage resulting from unauthorized delay by the related Ministry to make the lands unclaimed and putting them at the investors' disposal shall be included in the contract.

Article 19: If the project's physical or financial (Rial) progress, determined by the related Ministry, delays for 30% without authorization, the related Ministry, if necessary, after giving two warnings and at least one month grace period after each warning, can examine the delay reasons and cancel the contract, collect the fine anticipated in the instructions from the investor, and conclude a new contract with another investor according to the instructions approved by the Executive Committee unless a considerable change is made in the process of supplying the capital & progress of the project. In such a case, after the deduction of 15% of investment on the basis of the prices fixed by the official experts of Administration of Justice, the amount of investor's share as specified in paragraph (4) of the single Article shall be given to the first investor.

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Note 1: If, for any reason, the investor waives to continue the project, his / her waiver request and permission for withdrawal from the project are examined and decided by the related Ministry according to the instructions prepared by the Executive Committee.

Note 2: Upon the cancellation of a contract by investor, the executive is obliged to advertise continuation of the project's investment in highly circulated dailies three times at 10- day intervals, and if there is not other investor to invest in the project, the executive takes action to continue the project in coordination with Management and Planning Organization.

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Chapter 5

Operation

Article 20: The related Ministry informs the investor of all instructions about operation, maintenance, safety, technical affairs etc., prior to the start of the investment and supervises their good performance. The investor is obliged to carry out all the issued instructions. The issued instructions can not cancel the rights to which an investor is legally entitled.

Note: The investor is obliged to obtain the approval of his / her intended organizational structure for the operation and maintenance of the project from the related Ministry prior to the beginning of operation phase.

Article 21: After the completion of the implementation of the project according to the provisions of the contract and the investor's request for the issuance of operation license, the related Ministry at most within one month, shall dispatch its representatives to the project site. In the absence of the technical problems preventing the operation of the project and after making sure of using manpower in according with the approved operation organizational chart, minutes are prepared and signed by the related Ministry's representative and the investor or his / her representative, and the operation license shall be issued.

Note: In case of any fault, the problem and the deadline for solving it shall be included in the minutes and a temporary operation license shall be issued. Operation license shall be issued after solving the problem for the investor.

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Article 22: If the project costs exceed the primary assessed amount, the investor can, during the execution period and at most up to the end of the deadline for removing the faults, submit his / her positive documents to the related Ministry and ask for extending operation period. The related Ministry shall study the documents and, if approved, it may agree to. Extend the operation period in proportion to the extra costs.

Article 23: The related Ministries are civil partners of the investor in the projects subject of this bylaw in proportion to the investment share. Method of pricing the whole amount of the investment is determined by the Administration of justice's official expert's assessment.

Note: An investor can, if the related Ministry agrees, terminate the civil partnership at any time, by paying the current value of the related Ministry's share of partnership. In such a case, the related Ministry shall deposit the received amount to the treasury account.

Article 24: After the issuance of the operation license, Ministry of Energy is obliged to issue the water operation document for the investor in accordance with the provisions of the law and this bylaw. The issued water operation document is valid for the operation period and thereafter becomes invalid. The issued water operation documents are transferable.

Note: The first investor takes priority to receive the water operation document after the expiration of operation period.

Article 25: If the water exploited by investor is needed for drinking

in a state of emergency, the investor is obliged to deliver water for drinking and receive its price in accordance with the provisions of this article; and after the emergency situation is, at the Ministry of Energy Distinction settled the investor can continue using his / her share of water. Probable losses due to enforcement of this article shall be compensated according to Article 44 of the Equitable Distribution of Water Law approved in 1982, and upon the assessment of the official expert of Administration of Justice and paid from general credit account.

Chapter 6

General Regulations

Article 26: The investor is not allowed to construct installations in addition to the approved project. If the investor requests to construct additional structures, the related Ministry, taking into account all factors affecting the operation of the project specially the environment and water quality preservation issues, shall take the necessary action.

Article 27: In case of any divergence in the application and / or interpretation of concluded contract with an investor, between two parties, the case shall be settled observing the principle 139 of the Islamic Republic of Iran constitution. In case of disagreement, a competent court of justice shall settle the disputes.

Article 28: The installations constructed by investment referred to in this bylaw can be mortgaged and deposited.

Article 29: Facilities provided for in Article (106) of the Third Economic, Social and Cultural Development Plan Law of the IR of Iran approved in 2000, or similar facilities in other laws in field of financing the implementation of the projects of supplying water, main and secondary irrigation and drainage networks, small water projects, revival of qanats and springs shall apply to the investor referred to in this bylaw.

Mohammad Reza Aref
First Deputy of I.R. Iran President

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添付資料 3-3　WRMC設置法

Iran water Resources Management Specialized Mother Company's Articles of Association

By virtue of the Article no 4 of the IR of Iran's Third Economic, Social and Cultural Development Plan Law ratified in 2000, the Cabinet approved the Articles of Association of Iran Water Resources Management Specialized Mother Company in a meeting on February 26, 2003 on the basis of the proposal no. 69442/20/100 dated February 26, 2003 submitted by the Ministry of Energy as follows:

" The Articles of Association of Iran Water Resources Management Specialized Mother Company"

Chapter 1-Generalities and Capital

Article 1-The company's name is "Iran Water Resources Management Company" herein is referred to as the company.

Article 2-The objective of establishing the company is to arrange the activities under the charge of the Water Affairs of the Ministry of Energy, including the organization, direction and technical, engineering, legal, financial and administrative supports of the subsidiary companies to recognize, study, develop, conserve and operate water resources and installations efficiently, and exploit hydropower energy and operate the related systems.

Articles 3-The company's headquarters is in Tehran, and the company is authorized to establish branches and representatives approved by General Assembly observing the rules and regulations to perform the duties included in the Articles of Association.

Article 4-The company is a legal and independent entity and is managed as a joint stock (private) company.

The company and all its subsidiaries are financially independent, and they are managed in accordance with their own articles of associations and commercial principles, employment, financial and transaction by-laws.

Article 5-The company's activities duration is unlimited.

Article 6-The company's capital amounts to ten million Rials (IRR 10,000,000) divided into 100 name stocks each stock amounts to 100,000 Rials. All the stocks belong to the government.

Note – Changes in the capital will be proposed by an extraordinary general assembly observing the related rules and regulations.

Chapter 2-Operation and Duties

Article 7-The subject of the company's operation includes the management of the company's stocks and capitals in subsidiaries and taking action regarding the detection, studies, development, conservation and efficient operation of water resources, water installation and structures (except for the areas related to water distribution and urban and rural sewage disposal systems and wastewater treatment) and hydropower potentials as well as supervision management and investment within the framework of the related obligations and regulations, and the policies of the Ministry of Energy performed by subsidiaries and or as occasion arises done by the company confirmed by the general assembly.
They come as follows:
1- To act as an agency of the Ministry of Energy to enforce the Law of Fair Distribution of Water and other rules and regulations related to water, including the management and control of water resources operation and basic researches and water resources quantity and quality conservation.
2- To examine and compile required proposals in respect of strategies policies, long and medium term plans of water sector to be submitted to the Ministry of Energy.
3- To enforce the plans and approvals of the Ministry of Energy.
4- To collect, prepare, provide and analyze basic information required to detect and study water resources quality and quantity.
5- To direct and supervise the recognition, study and implementation of the projects of water supply and transfer, irrigation and drainage networks, dam stability and safety, river and bank engineering, flood control, artificial recharge and hydropower energy generation as well as to direct and supervise the operation of the related installations and structures.
Note: Hydropower energy generation is undertaken by the subsidiaries observing operation instructions and supervised by National Dispatching Protection Center of National Power Grid.
6- To provide and compile the instructions and techniques of the efficient consumption of water resources to be submitted to the Ministry of Energy for approval.
7- To take required measures for the supervision of water resources consumption techniques in various sectors consuming water as the representative of the Ministry of Energy and to promulgate consumption management culture for optimized consumption and reduction of unnecessary consumption.
8- To provide technical and specialized instructions, codes, criteria and standards required for the construction, maintenance and operation of water installations and structures and to submit them to the Ministry

of Energy for approval.
9- To take measures for the development of researches, technology, and know- how and information transfer in respect of water and hydropower energy and finance and support these measures.
10- To take measures for training human resources and other actions promoting the management and productivity of operating water installations and structures and hydropower systems.
11- To support the development of training and researches on water sector and training courses to promote the experts required by water sector.
12- To establish membership in domestic and international scientific and technical associations and institutes within the framework of the related laws and regulations.
13- Cooperation with domestic and foreign organizations and scientific information exchanges to perform the company's duties.
14- To compile and suggest water tariffs for the customers of the subsidiaries to the Ministry of Energy and coordination with the related organizations to confirm and supervise the enforcement of tariffs in the subsidiaries.
15- To conclude the related contracts for wholesale transactions of water and hydropower energy via the subsidiaries.
16- The management, development and providing of financial resources to invest in the installations supplying and transferring water and hydropower energy in accordance with the approved plans and efficient consumption of these resources through facilities and financial resources circulation among the company and subsidiaries.
17- To establish financial and executive management strategies and required techniques for being assured of implementing the projects and other activities duly and correctly.
18- To arrange and receive loans and financial facilities from domestic and foreign resources, issue bonds, establish domestic partnership and prepaid subscriptions and other methods of financing as well as to guarantee the subsidiaries to receive loan and facilities observing the regulations and instructions approved by the general assembly.
19- To plan and take measure for providing financial resources, encouraging public participation and private sector and absorbing capitals on the basis of the related rules and regulations to develop the capacities for the implementation of water projects and the operation of the related installations.
20- To take action and support private sector participation in the researches, construction, operation and maintenance of water and hydropower projects and the related installations on the basis of the

related standards and regulations.
21- To coordinate and regulate technical financial and administrative relations among the subsidiaries as well as the company as well as the subsidiaries and the subsidiaries.
22- The appraisal of the subsidiaries' annual operation regarding technical, financial and administrative management and human resources.
23- The establishment of new relevant companies and partnership with other related companies observing the related regulations.
24- To perform any operation related to the company's objectives.

Chapter 3 – The Pillars of the Company

Article 8 – The pillars of the company come as follows:
1-General Assembly
2-Board of Directors and Managing Director.
3-Inspector and Auditor.

A- General Assembly

Article 9: General Assembly is composed of the following members:
1-Minister of Energy – Chairman
2-Minister of Finance and Economic Affairs
3-Head of Management and Planning Organization
4-Minister of Agricultural Jihad
5-Minister of Industries and Mines.

Article 10- The Company's General Assemblies Include:
1-Ordinary General Assembly
2-Extraordinary General Assembly

Article 11-Ordinary general assembly is held at least twice a year to examine and make decision on financial statements, combined financial statements, study and approve the company's budget and deal with other issues included in the agenda.

Article 12-Ordinary general assembly is officially held when a majority of members are present. Extraordinary general assembly is held officially when at least 4 members are present.
Resolutions are valid by three votes (pros) in the ordinary general assembly and by four votes (pros) in extraordinary general assembly. The chairman of ordinary or extraordinary general assembly calls for a session informing its date, place and agenda. Enclosed an invitation to the session the agenda and the records related to the issues of the agenda are submitted ten days before the session to the members.

Article 13- Ordinary general assembly duties are as follows:
1- To examine and approve the company's policy and operation programs.
2- Election of the company's chairman and board of directors members

for two years proposed by Minister of Energy.
3- Election of the company's inspector and auditor.
4- To consider and decide on the company's annual operation reports, financial statements, combined financial statements and budget.
5- To decide on savings and dividends observing the related rules and regulations.1
6- To fix the board of directors' salary and fringe benefits and the inspector's and auditor's fees and to select a newspaper with a wide circulation.
7- Approval of receiving loans and credits from domestic and foreign sources observing the related regulations.
8- To consider and approve the company's master organization chart, and decide on the required posts and manpower employment programs of the company.
9- Suggestions on the company's financial, transaction and employment bylaws to the cabinet for approval.2
10- To decide on the establishment of new companies or enter into partnership with other companies in accordance with the related rules and regulations.
11- To decide on the board of director's proposal for the settlement of disputes referred to arbitration observing the 139th principle of the Islamic Republic of Iran constitution.
12- Approval and notification of principles for the board of directors' appointment and manpower organization charts of the subsidiaries.
13- To approve and notify the principles of investment for the subsidiaries.
14- To consider and decide on transferring the company's transferable stocks to the subsidiaries.
15- To approve the principles fixing the fees for agency affairs.
16- Decision on other issues observing the regulations of the articles of association included in the ordinary general assembly's agenda.

Article 14-Extraordinary general assembly's duties are as follows:
(1) and (2) - on the strength of the Cabinet's approval No 30002 D/12716 dated 19, June, 2004 the text has been amended.
1- Decision on increasing or decreasing capital, within the framework of law, suggested to the Cabinet for approval.
2- To consider and decide on the amendment and reform of the articles of the company's articles of association, within the framework of regulations, suggested to the Cabinet for approval.
3- To consider and decide on the company's liquidation, within the framework of regulations, suggested to the Cabinet for approval.

B- Board of Directors and Managing Director

Article 15-The company's board of directors are composed of three or five members appointed from qualified persons relevant to the activities of the company for two years approved by ordinary general assembly.
The board of directors after the expiration period are reinstated in their positions up to the time of the appointment of a new board of directors. The board of directors are authorized to be appointed for the next periods. They appoint one of the members among themselves as a vice chairman.
Note 1-The board of directors' chairman is considered as the Deputy Minister of Energy.
Note 2-Every member of the board of directors is employed as fulltime staff member of the company or subsidiaries. The board of directors entrust this member with the task of directing part of the company's or several subsidiaries' operations.

Article 16-Ordinary general assembly is authorized to select two substitute members to act as the members of the board of directors when one or two members may die or resign or can not continue their jobs. Therefore, the substitute members are replaced if confirmed by the chairman of general assembly.

Article 17-The board of directors' sessions are considered official when the majority of the members participate, and decisions are made on the basis of the majority of votes.

Article 18-The board of directors' sessions are held regularly at least once a month and the chairman sends the agenda to the members one week before the session to be held.
Note 1-The chairman chairs the sessions. In his absence, his deputy supersedes.
Note 2-In case of necessities, extraordinary sessions are held with a written request made by two members of the board of directors.

Article 19- The board of directors have a book in which minutes and opponents' comments will be registered and signed by the members participated in the session. The chairman is responsible for the notification and follow – up action of the board of directors' approvals.

Article 20-The members of the board of directors of the company and subsidiaries are not authorized to hold positions (obligatory or nonobligatory) in other specialized mother companies and their subsidiaries. They receive their salaries and fringe benefits from one of the companies in which they perform the board of directors' duties.

Article 21-The board of directors has full authority to take any action and transactions related to the subject of the company's operation that are not clearly within the competence of general assemblies.
The board of directors has the following authorities:
1- To propose the policy and confirm the company's management

operation programs and submit them to ordinary general assembly for approval.
2- To consider and confirm the company's budget, annual operation report and financial statements and combined financial statements submitted to general assembly for approval.
3- Confirmation of financial, transaction and employment bylaws to be submitted to ordinary general assembly.[3]
4- To examine and suggest changes or amendment to the articles of association or the company or the subsidiaries liquidation within the framework of regulations to the general assembly of the Specialized Mother Company.
5- Proposal for making changes in the company's capital to the general assembly.
6- Internal bylaws consideration and confirmation to manage the company.
7- To consider and suggest the establishment of specialized working groups relevant to the duties.
8- To suggest the acquisition of bank loans or credits from banks and credit institutions to the general assembly.
9- Proposal for a compromise on disputes and referring to arbitration and arbitrator assignment and reclamation to the general assembly observing the related regulations.
10- Considering and making decisions on the issues brought up in the board of directors by chairman and managing director, unless they are included in the duties of other competent authorities.
11- To appoint subsidiaries' board of directors members.
12- To appoint inspectors and auditors for subsidiaries in accordance with the related rules and regulations.
13- To control and make decision on the subsidiaries' financial statements and annual budget.
14- To appoint representatives with full powers participating in the subsidiaries' general assemblies.

[3] –On the strength of the cabinet's approval no 30002 D/12716 dated June 19,2004, the text has been amended

Note - The company's board of directors act simultaneously on behalf of the Specialized Mother Company for the stocks of the company in the subsidiaries' general assemblies.
15- To audit the operations, transactions and activities of the company and subsidiaries. This audit must never result in creating any problem in the operation of the company and subsidiaries.
16- To consider and make decision on all types of partnership and investment by the subsidiaries within the framework of the general assembly's approvals.
17- To compile investment principles for the subsidiaries and suggest

them to the general assembly.
18- The compilation of programs for human resources promotion to train and promote managers in the subsidiaries while observing the related rules and regulations.
19- To arrange transferable companies for sale while observing the related rules and regulations.
20- To approve the subsidiaries' policies and strategies within the framework of general assemblies' approvals and the Ministry of Energy policies.
21- To consider and approve the master organization chart and manpower employment programs of the subsidiaries within the framework of the general assembly approvals.
22- To approve the company's detailed organization within the framework of the company's master organization chart and general assembly's approvals.

Article 22- The board of directors are obliged to submit one copy of the company's and subsidiaries' financial statements, combined financial statements and the board of directors' report to be considered and made comment by the company's inspector and auditor within the fixed period.
Note: The indispensable principles and standards of accounting are the bases to prepare and present the company's financial statements.

Article 23-The board of directors, assuming full responsibility for the consequences, are authorized to vest part of their authorities in the managing director.

Article 24- The managing director has the highest executive position of the company and is selected for two years among the members of the board of directors or out of them by the board of directors and is appointed by the Energy Minister's order. The managing director is responsible to manage the company within the framework of rules and regulations and the articles of association. The managing director, assuming full responsibility for the consequences, is authorized to vest part of his duties and authorities in one of the company's personnel.

Article 25- In case of the expiry of the managing director's management his measures are effective and valid until a new managing director is assigned.

Article 26- The managing director's duties come as follows:
1- To enforce the general assemblies' and board of directors' approvals.
2- To provide and arrange the company's and subsidiaries' annual budget, financial and combined financial statements and submit them to the board of directors.
3- To provide and arrange the company's operation program and submit it to the board of directors.

4- To manage the company's technical, financial, administrative and employment affairs.
5- To propose the company's financial, transaction and employment bylaws to the board of directors.
6- To propose the company's detailed organization chart to the board of directors within the framework of the general assembly approvals.
7- To arrange the contracts related to the clauses (1) and (3) of the Article (7) of the articles of association and submit them to the board of directors for approval.
8- The supervision of good performance of the company's articles of association and bylaws and the measures taken to manage the company properly within the framework of the related rules and regulations.
9- To act as an agency on behalf of the company to deal with domestic or foreign judicial authorities and real and legal entities and to have the right of appointing an attorney who is authorized to give power of attorney to third person as an attorney.
10- To perform all the employment affairs within the scope of the organization chart, budget and the general assembly's approvals.
11- To make decision and take measure in respect of the company's affairs and operations except for the general assembly's and board of directors' duties.

Article 27- The company's all cheques, financial documents, contracts and undertaken documents must be signed by the managing director and/or her or his representative and one of the members of the board of directors or the board of directors' elected representative.
Office correspondences are signed by the managing director of her or his representative. All the cheques must be signed by the controller or her or his representative in addition to the above mentioned persons' signatures.

C- Legal Inspector and Independent Auditor

Article 28- The company has a legal inspector and independent auditor that are elected for one year confirmed by the general assembly in accordance with the related rules and regulations.
Note (1) The measures taken by the inspector and auditor as their duties must not prevent the company's routine operations.
Note: (2)When the general assembly have selected an inspector or auditor on the basis of the law of using specialized and professional services given by certified public accountants approved in 1993, they can select an alternate inspector or auditor on the basis of the same law. Therefore, if the original inspector or auditor can not perform his or her duties confirmed by the chairman of the general assembly, this alternate

inspector or auditor will fulfill his or her duties[4]

Chapter 4-Financial Statements

Article 29-The company's fiscal year begins on the 1st day of 1st month (March 20) of every solar year and ends at the end of the last month (March 19) of the same solar year.

Article 30-The company's financial statements must be submitted to the inspector at a legal specified time.

Chapter 5-Other Regulations.

Article 31-The company and the subsidiaries, from the viewpoint of policies, plans and development measures and operation, are subject to the Ministry of Energy rules and regulations.

Article 32-The company is obliged to provide the bylaws included in the articles of association within a period of six months and to enforce them after being approved by the Cabinet[5]. Previous regulations are effective and valid until the bylaws to be approved.

Article 33- Subsidiary is a company whose stocks belong to the company (Iran Water Resource Management Company).
If more than 50% of stocks belongs to the company then it is entitled a subsidiary. The titles of the subsidiaries are enclosed. By virtue of Guardian Council's letters No.82/30/2768 dated 12, April 2003 and No. 82/30/2739 dated 7, April, 2003, this council confirmed the articles of association. [3]
Mohammad Reza Aref, First Vice President

(4) and (5)- on the strength of the Cabinet's approval no.30002 D/12716 dated June 19, 2004, the text has been amended

Iran Water Resources Management Company's Perspective.

(Obtained form the general policies of the Islamic Republic of Iran on "Water Resources" approved on January 13, 2001 by the Supreme Leaders Office.)

The establishment of water resources management integrated system considering supply and demand management in water cycle with in the framework of land use planning for the country's basins taking in to account water economic، security، political، social and environmental value in its desirable exploitation، supply، conservation and consumption to attain the country's sustainable development.

添付資料 3-4　Environment Protection Law of Iran

آئین‌نامه اجرائی قانون حفاظت وبهسازی محیط زیست

هیئت وزیران در جلسه مورخ ۱۳۵٤/۱۲/۳ بنا به‌پیشنهاد شماره ۲۰۹۲ - ۹٤ مورخ ۱۳۵٤/۱۰/۳ سازمان حفاظت محیط زیست به‌استناد ماده ۲۱ قانون حفاظت و بهسازی محیط زیست آئین‌نامه اجرائی قانون حفاظت و بهسازی محیط زیست را به‌شرح زیر تصویب نمودند :

فصل اول— تعاریف

ماده ۱ ـ سازمان حفاظت محیط زیست و شورایعالی حفاظت محیط زیست در این آئین‌نامه بترتیب سازمان و شورایعالی نامیده میشوند .

ماده ۲ ـ پارک ملی به‌محدوده‌ای از منابع طبیعی کشور اعم از جنگل و مرتع و بیشه‌های طبیعی و اراضی جنگلی و دشت وآب و کوهستان اطلاق میشود که نمایانگر نمونه‌های برجسته‌ای ازمظاهرطبیعی ایران باشد وبمنظورحفظ همیشگی وضع زندگی وطبیعی آن و همچنین ایجاد محیط مناسب برای تکثیروپرورش جانوران وحشی و رشد رستنیها در شرایط کاملا طبیعی تحت حفاظت قرار میگیرد .

ماده ۳ ـ آثارطبیعی ملی‌عبارت از پدیده‌های نمونه و نادرگیاهی یاحیوانی یا اشکال یا مناظر کم نظیر و کیفیات ویژه طبیعی زمین یا درختان کهنسال یادگار تاریخی میباشد که با منظور داشتن محدوده متناسبی تحت حفاظت قرار میگیرد .

ماده ٤ ـ پناهگاه‌حیات‌وحش به‌محدوده‌ای‌ازمنابع‌طبیعی کشور اعم‌ازجنگل و مرتع و دشت وآب و کوهستان اطلاق میشود که دارای‌زیستگاههای طبیعی

نمونه و شرایط اقلیمی خاص برای جانوران وحشی بوده و بمنظور حفظ ویا احیاء این زیستگاهها تحت حفاظت قرار میگیرد .

ماده ۵ ـ منطقه حفاظت شده به‌محدوده‌ای از منابع طبیعی، کشور اعم از جنگل و مرتع و دشت و آب و کوهستان اطلاق میشود که از لحاظ ضرورت حفظ و تکثیر نسل جانوران وحشی یا حفظ و یا احیاء رستنیها و وضع طبیعی آن دارای اهمیت خاصی بوده و تحت حفاظت قرار میگیرد .

فصل دوم — مقررات مربوط به پارکهای ملی— آثارطبیعی‌ملی- پناهگاه حیات وحش ومناطق حفاظت‌شده

ماده ۶ ـ هرگونه پیشنهاد برای تعیین مناطق مذکور در بند الف ماده ۳ قانون حفاظت و بهسازی محیط زیست به‌پیشنهاد سازمان و با رعایت شرایط‌ذیل صورت میگیرد :

الف ـ مشخص نمودن حدود دقیق منطقه مورد نظر و ارائه نقشه آن در مقیاس مناسب .

ب ـ توجیه پیشنهاد و تطبیق وضع طبیعی منطقه پیشنهادی با تعاریف مربوط بهر منطقه .

ماده ۷ ـ تیراندازی و شکار در پارکهای ملی ممنوع است . در موارد استثنائی که مقتضیات حفظ نسل جانوران وحشی ایجاب نماید سازمان میتواند توسط مأمورین خود برحسب مورد اقدامات لازم معمول دارد .

ماده ۸ ـ تعلیف‌احشام و قطع اشجار و بوته کنی و بطورکلی هرعملی که موجب از بین رفتن رستنیها باشد در پارکهای ملی وآثارطبیعی ملی ممنوع است. در موارد ضروری بمنظور حفظ حیات جنگل و بهسازی پارکهای ملی و آثارطبیعی ملی یا مطالعات علمی و زمین‌شناسی مجاز برحسب مورد با رعایت مقررات قانون حفاظت و بهره‌برداری از جنگلها و مراتع توسط سازمان جنگلها و مراتع کشور و یا سازمان حفاظت محیط زیست و یا مؤسسه و یا شخص ذیربط اقدام خواهد شد .

تبصره ـ احشام واردشده درپارکهای ملی وآثارطبیعی ملی توسط‌مأمورین سازمان از این مناطق اخراج و مسئول مربوط طبق مقررات تحت تعقیب قرار خواهد گرفت .

ماده ۹ ـ تجدید یا تمدید پروانه‌های اکتشاف و بهره‌برداری صادره برای معادن واقع در پارکهای ملی و آثارطبیعی ملی ممنوع میباشد .

ماده ۱۰ ـ ورود بمناطق مذکور در بند الف ماده ۳ قانون حفاظت و بهسازی محیط زیست و عبور از آنها باستثنای جاده‌های عمومی تابع دستورالعمل سازمان خواهد بود .

ماده ۱۱ - قطع اشجار و بوته کنی و خارزنی و ذغال گیری و بطور کلی هر عملی که موجب از بین رفتن رستنیها شود در پناهگاههای حیات وحش و مناطق حفاظت شده که اراضی آن متعلق به‌دولت باشدبدون اجازه ممنوع است.

تبصره ۱ - اجرای طرحهای مجاز صنعتی و معدنی در پناهگاههای حیات وحش ومناطق‌حفاظت شده بارعایت مقررات مربوط ازشمول‌این ماده‌مستثنی است.

تبصره ۲ - تعلیف احشام از لحاظ کمیت و کیفیت در پناهگاههای حیات وحش و مناطق حفاظت شده تابع ضوابطی است که با توافق سازمان جنگلها و مراتع کشور و سازمان تهیه خواهد شد.

تبصره ۳ - ورود و تعلیف احشام بدون پروانه یا زاید بر پروانه در پناهگاههای حیات وحش و مناطق حفاظت شده برخلاف مقررات موضوع این ماده ممنوع میباشد اینگونه احشام توسط مأمورین سازمان از منطقه اخراج و با مسئول مربوط طبق مقررات عمل خواهد شد.

ماده ۱۲ - وزارتخانه‌ها و مؤسسات و شرکتهای دولتی با موافقت‌سازمان مجازند مطالعات و بررسیها و عملیات مورد نیاز را در حدود وظائف قانونی‌خاص خود در مناطق مذکور در بند الف ماده ۳ قانون حفاظت و بهسازی محیط زیست انجام دهند.

فصل سوم — مقررات مربوط باجرای مواد ۱۹ و ۲۰ قانون حفاظت و بهسازی محیط زیست

ماده ۱۳ - حدود مناطق مذکور در مواد ۱۹ و ۲۰ قانون حفاظت و بهسازی محیط زیست توسط شورایعالی تعیین و از طرف‌سازمان آگهی‌خواهدشد.

ماده ۱۴ - تعیین مناطق موضوع ماده ۱۹ قانون حفاظت و بهسازی محیط زیست منوط بحصول حداقل یکی از شرایط و ضوابط ذیل میباشد:

الف - وجود یک یا چند منبع مولد آلودگی در منطقه که محیط را آلوده و یا در معرض آلودگی قرار میدهد.

ب - بسبب فعالیتهای مختلف انسانی ازقبیل‌صنعتی و کشاورزی وتجاری اثرات نامطلوب یا ددیگرگونی درمحیط‌زیست ویا وضع طبیعی منطقه حاصل شده یا در معرض اینگونه خطرات قرار گرفته باشد.

ج - وجود مراکزجمعیتی در منطقه وضرورت‌پیشگیری ازایجادآلودگیهای مضر به‌بهداشت و سلامت مردم.

د - قرار داشتن یک یا چند پارک ملی یا آثار طبیعی ملی‌یا پناهگاه حیات وحش و یا منطقه حفاظت شده در جوار یاداخل منطقه بمنظور پیشگیری از دیگرگونی و تخریب وضع خاص طبیعی مناطق چهارگانه مذکور.

ماده ۱۵ - احراز هریک از شرایط وضوابط موضوع ماده۱۴ این‌آئین‌نامه با سازمان میباشد.

ماده ۱۶ - پس از لازم الاجراء شدن مقررات مواد ۱۱ و ۱۲ قانون حفاظت و بهسازی محیط زیست درصورتیکه صاحب یا مسئول کارخانه و یا کارگاهی که موجبات آلودگی محیط زیست را فراهم مینماید با دلائل ومدارک قابل قبول سازمان اثبات نماید که ظرف مهلت مقرر در اخطار سازمان رفع آلودگی عملی نمیباشد سازمان مجاز است فقط برای یکبار مهلت اضافی برای اینگونه کارخانجات و کارگاهها قائل شود.

ماده ۱۷ - محول نمودن اجرای مقررات مواد ۱۱ و ۱۲ و ۱۳ قانون حفاظت و بهسازی محیط زیست بشهرداریها یا هر سازمان دولتی ذیربط درصورتی امکان‌پذیر است که قبلا مناطق مورد نظر طبق ماده ۱۱ قانون مذکور تعیین و اعلام شده باشد.

ماده ۱۸ - درصورتیکه باستناد ماده ۲ قانون حفاظت و بهسازی محیط زیست اجرای قسمتی از وظایف واختیارات سازمان نسبت باجرای مواد ۱۱ و ۱۲ و ۱۳ قانون مذکور بشهرداریها و یا هر سازمان دولتی ذیربط محول گردد، سازمان مراتب را برحسب مورد کتباً بمراجع مربوط اعلام خواهد داشت.

ماده ۱۹ - وظائف و اختیاراتی که طبق ماده ۱۸ این آئین‌نامه به شهرداریها یا سازمانهای ذیربط دولتی محول میگردد باید بطور تفکیک تعیین و مشخص شده باشد.

فصل چهارم شورایعالی حفاظت محیط زیست

ماده ۲۰ - دعوت برای تشکیل جلسات شورایعالی پس از موافقت رئیس شورا توسط دبیر شورا بعمل میآید. رسمیت جلسات شورایعالی موکول بحضور لااقل ده نفر از اعضاء میباشد. تصمیمات شورایعالی با رأی موافق حداقل هشت نفر از اعضای حاضر درجلسه قطعی است.

ماده ۲۱ - کلیه امور اداری شورایعالی توسط دبیرخانه شورا که زیرنظر رئیس سازمان اداره میگردد انجام خواهد شد. کارمندان دبیرخانه شورایعالی از میان کارکنان سازمان توسط رئیس سازمان انتخاب میشوند.

شرح وظائف دبیرخانه شورایعالی به پیشنهاد رئیس سازمان به تصویب شورایعالی خواهد رسید.

فصل پنجم مقررات اجرای برنامه های آموزش حفاظت و بهسازی محیط زیست

ماده ۲۲ - سازمان بمنظور تنویر و هدایت افکار عمومی درزمینه حفظ و بهسازی محیط زیست برنامه های آموزشی خاصی تنظیم و بمرحله اجراء خواهد گذاشت.

ماده ۲۳ - سازمان ترتیبی اتخاذ خواهد نمود که با همکاری مراجع ذیربط در برنامه های درسی دوره‌های ابتدائی - راهنمائی - متوسطه وعالی مسائل مربوط بلزوم و نحوه حفظ و بهسازی محیط زیست گنجانیده شود.

ماده ۲۴ ـ سازمان میتواند با تصویب شورایعالی و کسب اجازه ازمراجع قانونی مربوط جهت آموزش مؤسسات و آموزشگاههای خاصی درزمینه حفاظت و بهسازی محیط زیست دایر نماید .

ماده ۲۵ ـ سازمان میتواند درصورت درخواست سازمانها و مؤسسات کشور اعم از دولتی و خصوصی در زمینه آموزش کارکنان آنها نسبت به تهیه و تنظیم و اجرای برنامه های آموزشی مربوط به مسائل حفاظت وبهسازی محیط زیست اقدام نماید .

ماده ۲۶ ـ بمنظور جلب نیروی انسانی متخصص سازمان میتواند به دانشجویان برجسته ایرانی که در دانشگاهها و مؤسسات عالی آموزشی داخل یا خارج از کشور در رشته های مورد نیاز سازمان بتحصیل اشتغال دارند با توجه بقانون تأمین وسائل و امکانات تحصیل اطفال وجوانان ایرانی مصوب مرداد ماه ۱۳۴۳ و آئین نامه اجرائی آن سالانه تعدادی بورس تحصیلی اختصاص دهد .

فصل ششم ـ گارد محیط زیست

ماده ۲۷ ـ گارد محیط زیست متشکل است از محیطبان و شکاربان که هریک دارای درجات و علائم مشخصی میباشند .

ماده ۲۸ ـ گاردمحیط زیست دارای لباس متحدالشکل وتجهیزات لازم میباشد.

ماده ۲۹ ـ نوع لباس و تجهیزات و علائم و نشانهای تشویقی گارد محیط زیست توسط سازمان تعیین خواهد شد .

ماده ۳۰ ـ کلیه امور استخدامی گارد محیط زیست از قبیل تعیین درجات، شرایط ارتقاء ومقررات انضباطی در آئین نامه استخدامی سازمان تعیین خواهدشد.

ماده ۳۱ ـ دستورالعمل خدمتی گارد محیط زیست توسط سازمان تهیه و بموقع اجراء گذارده خواهد شد .

ماده ۳۲ ـ افراد گارد محیط زیست به سلاح مناسبی که نوع آن باموافقت وزارت جنگ تعیین میشود مجهز میگردند .

ماده ۳۳ ـ سازمان مکلف است دوره های آموزشی لازم برای مأمورینی که باید در گارد محیط زیست انجام وظیفه نمایند دائر کند .

ماده ۳۴ ـ درصورتیکه اجرای قسمتهائی از مقررات این فصل مستلزم کسب موافقت ستادبزرگ ارتشتاران باشد سازمان دراین زمینه اقدام خواهد کرد.

فصل هفتم ـ مقررات مربوط بباغهای وحش و موزه ملی تاریخ طبیعی

ماده ۳۵ ـ ایجاد باغ وحش در هریک از نقاط کشور مستلزم تحصیل پروانه از سازمان میباشد. ضوابط ومقررات مربوط به باغ های وحش، توسط سازمان تعیین خواهد شد . صاحبان یا مسئولان باغهای وحش موجود مکلف به دریافت پروانه و رعایت ضوابط و مقررات مربوط میباشند .

ماده ۳۶ ـ سازمان میتواند برای ایجاد باغ وحش با شهرداری‌ها مشارکت و همکاری نماید .

ماده ۳۷ ـ سازمان نسبت به ایجاد موزه ملی تاریخ طبیعی ایران درتهران اقدام و درصورت لزوم شعبی نیز درنقاط مناسب کشور تأسیس خواهد نمود .

ماده ۳۸ ـ بمنظور تکمیل موزه ملی تاریخ طبیعی ایران ضوابط زیر در مورد جمع‌آوری و حفظ نسیلها و بقایای جانوران و گیاهان دوره‌های پیشین مقرر میگردد :

الف ـ هرشخصی که از وجود نسیلها وبقایای جانوران‌وگیاهان دوره‌های پیشین در هرنقطه از کشور مطلع یا آثاری‌از آنها کشف یا بدست آورد در قبال تحویل و ارائه آن به سازمان چنانچه از نظر علمی حائز اهمیت باشد جایزه متناسبی دریافت خواهد داشت .

ب ـ صدور نسیلها و بقایای جانوران و گیاهان دوره‌های پیشین از ایران تابع ضوابطی است که سازمان و وزارت فرهنگ و هنر وسازمان زمین‌شناسی کشور تعیین مینمایند .

ج ـ سازمان با رعایت مقررات مربوط به‌حفاظت آثار تاریخی و باستانی و حفظ حقوق اشخاص مجاز است‌بمنظور کشف و گردآوری نسیلها وبقایای‌جانوران و گیاهان دوران پیشین هریک از مناطق کشور را بررسی و حفاری و درصورت لزوم ضمن تعیین حدود و اعلام مراتب حفظ و نگاهداری نماید .

ماده ۳۹ ـ وزارتخانه‌ها و مؤسسات و شرکتهای دولتی و وابسته بدولت درصورتیکه در اجرای وظائف وطرحهای خود بمناطقی که دارای آثاری ازنسیلها و بقایای جانوران و گیاهان دوران پیشین باشند برخورد نمایند مراتب را به سازمان اعلام و درمورد حفظ و جمع‌آوری اینگونه آثار که دارای ارزش علمی باشند با سازمان همکاری و تشریک مساعی خواهند نمود .

ماده ۴۰ ـ سازمان مجاز است بمنظور تکمیل موزه ملی تاریخ طبیعی ایران با مؤسسات مشابه خارجی و بین‌المللی در زمینه همکاریهای علمی وفنی ومبادله نسیل و بقایای جانوران و گیاهان با تصویب شورایعالی قراردادهای لازم منعقد نماید .

ماده ۴۱ ـ وزارتخانه‌ها و مؤسسات دولتی و وابسته به‌دولت،دانشگاهها و مؤسسات آموزشی وموزه‌ها درمورد اجرای ضوابط مربوط‌به این‌فصل با سازمان همکاری و تشریک مساعی خواهند نمود .

ماده ۴۲ ـ سازمان، نسیلها وبقایای جانوران و گیاهان دوره‌های پیشین راکه دانشگاهها و مؤسسات آموزشی و علمی کشور جهت تحقیقات وبررسیهای علمی نیاز دارند درصورت امکان تأمین خواهد نمود .

فصل هشتم – بودجه و امور مالی سازمان

ماده ۴۳ ـ اعتبارات سازمان که بعنوان کمک در بودجه کل کشور منظور و تخصیص داده میشود، براساس بودجه تفصیلی که بتصویب شورایعالی میرسد بمصرف خواهد رسید.

ماده ۴۴ ـ تا زمانیکه بودجه تفصیلی سازمان از لحاظ فصول و مواد به تصویب شورایعالی نرسیده است سازمان میتواند با اجازه شورایعالی هرماهه به میزان یک دوازدهم اعتبارات مصوب دربودجه عمومی کل کشور که تخصیص یافته است بمصرف هزینه های مربوط رسانیده و بشورایعالی گزارش نماید.

ماده ۴۵ ـ سازمان ازلحاظ معاملات تابع قانون محاسبات عمومی وآئین نامه معاملات دولتی میباشد.

فصل نهم – متفرقه

ماده ۴۶ ـ اعطاء جایزه باشخاص و مؤسساتی که بنحوی از انحاء به حفاظت و بهسازی محیط زیست کمک رسانند تابع مقرراتی است که بتصویب شورایعالی میرسد.

ماده ۴۷ ـ سازمان دامپزشکی کشور در زمینه کنترل بیماریهای واگیر بین جانوران وحشی و اهلی و سایر امور مربوط به بهداشت حیوانات طبق ضوابطی که توسط دوسازمان تنظیم میشود همکاریهای لازمه را باسازمان معمول خواهد داشت.

ماده ۴۸ ـ سازمان جنگلها و مراتع کشور ضوابط مذکور در ماده ۴۷ را در مورد صدور پروانه تعلیف مراعات و برحسب مورد در تنظیم و اجراء اینگونه ضوابط با سازمان همکاری خواهد نمود.

اصل تصویب نامه در دفتر تحت وزیر است.

وزیر مشاور ومعاون اجرائی نخست وزیر ـ هدی عدایتی

添付資料 4-1　DOE/UNDP EIA　Guideline

Environmental Impact Assessment

Capacity building and institutional strengthening in Iran
This is an Environmental site about the project IRA/97/ 0 17/A/O L/99 by UNDP (United Nations Development Program) and the Department of the Environment in Iran.

ANNEX TO THE MINUTES OF THE MEETING OF 23RD DEC 1997

ENVIRONMENT PROTECTION HIGH COUNCIL

BY-LAWS (GUIDELINE) OF ENVIRONMENTAL IMPACTS ASSESSMENT

In order to implement the decision of Environment Protection High Council made on 23rd march1994, the guideline for preparing report on environmental impact assessment (EIA) should be as follows:

Article 1- The implementing bodies of plans and projects, inserted in article 2, should prepare the report on EIA according to this guideline, as well as the report on project feasibility and site selection studies.

Article 2- Plans and projects, falling under this guideline, are as follows:

a. Petrochemical factories at any size.
b. Refineries at any size.
c. Power plant station with the capacity of 100 mw and more.
d. Steel industries under the following two sectors:
   1) Firms producing raw material for steel mills with the annual capacity of 300,000 t., and more.
   2) Rolling and forming plants with the annual capacity of 100,000 t., and more.
e. Dams and other water structures in the following three sectors:
   1) Dams with the height of 15 m., and more or having side structures of more than 40 ha or lake with the area of 400 ha and more.

Note :1- Inactive tail (for maintaining polluted substances) at any size, are subject to EIA.

2) Man-made lakes with the area of 400 ha, and more.

Note 2- The size of the lakes for fish farming with the area of 400 ha and less should be decided in coordination with the Ministry of Jihade Sazandegi and Department of Environment (DOE).

3) Irrigation and drainage plans and projects with the area of 25000 ha, and more.

f. Industrial estates (of any type) with the area of 100 ha, and more.

g. Airports with the runway length of 2000 m, and more.

Article 3- Above types of projects (regardless of their dimensions) coming within the impact able limits of the plans and projects ,inserted in article 2, are subject to the EIA.

Article 4- Above types of projects (regardless of their dimensions) coming within the impacted limits of projects or inside the special biotic regions, are subject to the EIA.

Note 1- list of special biotic regions together with their situation and the impactable distance, approved by the official authorities, are published regularly by DOE.

Note 2- list, situation and impactable and impacted distance of the existing 7 types of projects in country (according to the definition of article 2) are prepared, and published by DOE.

Article 5- The implementing bodies of the plans and projects which are subject to the EIA, should submit a preliminary report to DOE, and DOE after studying it announces the important and key points (at most within a month)that are to be considered by the implementing bodies during the assessment.

Note - All the environmental by-laws and regulations which are approved by the official authorities and should be observed during the EIA, are prepared by DOE.

Article 6- The implementing bodies of projects, falling under this pattern, should prepare the report on the EIA with regard to the announced points by DOE and the related by-laws.
The reports should be prepared by experts, scientific centers and specialized firms whose competence is confirmed by related authorities.
Note - Until the establishment of the appropriate firms and centers falling within this guideline, the Plan and Budget Organization in coordination with the DOE is responsible for publishing the preliminary list.

Article 7- The EIA is prepared for two situations by main activities:

1) Construction period
2) Operation period

Producers of the assessment suggest the necessary measures for reducing the negative environmental impact as well as the expenses.

Article 8- At the end of the report, the recommendation of the producers of the EIA is stated in one of the following three ways:

a. Implementation of the plan or project is not recommended.
b. Implementation of the plan or project is possible provided that the necessary measures for reducing the environmental impact are taken.
c. Implementation of the plan or project is possible needless to take any important measure.

Article 9- DOE announces its viewpoint within 3 months (at most) regarding the announced criteria.

Note 1- In order to coordinate affairs related to the EIA of plans and projects, a scientific committee, consisting of experts and academicians, under the supervision of head of DOE is formed. The committee is responsible for the scientific side of the assessment and consists of the following members:
Head of DOE as the chairperson of the committee.
Five experts and academicians who are appointed by the head of DOE.
Representative of Plan and Budget Organization.
Representative of Forests and Pastures Organization.
Representative of Iran standard and Industrial Research Institute.
Representative of the ministry or organization pertaining to the proposed plan or project.

Note 2- If the implementation or operation of development plan(s) or project(s), regarding the results of the EIA, contradicts the laws and regulations of the environment protection, D.O.E will inform the related ministry or Institute of the case, so that a solution could be found and the project would be reviewed.

In the case of disagreement, The Iranian President's decision will be put into effect.

Article 10- The dimensions to be studied for the environmental impacts, in the case of all 7 types of projects, after studying the existing environmental situation, are as follows:

a. Environmental impacts on physical environment.
   1) Impacts on land: morphology and qualitative.
   2) Impacts on water: water quality and quantity.
   3) Impacts on land, air and sound: air and rainfall changes, air quality.
   4) Secondary impacts on soil, water and air.

b. Environmental impacts on natural environment:
   1) Impacts on the plant species.
   2) Impacts on the animal species.
   3) Impacts on habitats, landscapes and birds' migration route.

c. Impacts on social and cultural environment:
   1) Impacts on the people's health and environment.
   2) Impacts on social environment: employment, housing, education.
   .3) Impacts on cultural environment: people's religious and cultural beliefs, cultural heritage.

d. Environmental impacts on the development plans:
   1) Impacts on the other agricultural, industrial and service development plans in the region.
   2) Impacts on the regional spatial plan.
   3) Impacts on the regional lands use.

This guideline, consisting of 10 Articles and 8 notes, was ratified by the High council of Environment protection on 23rd Dec. 1997.

Implementing Mechanism and Guidelines

By-laws(guideline)of Environmental Impacts Assessment

According to the by- laws (guideline) of EIA, ratified in 10 articles and 8 notes by the High Council of Environment Protection on 23rd Dec.1997, the implementing body of projects , falling under the Article 2 of this by-laws, are obliged to prepare report on EIA.

In order to achieve the objectives of the by-laws and systematically implement its content as well as to facilitate and expedite the process of studying and reviewing the assessment reports, the office for environmental assessment of DOE , on the basis of terms of reference, specified in the ,guideline has articulated an essential and harmonized framework for preparing report on preliminary assessment (Article 5) and EIS (Article 6) as well as for the phases of reviwing and

assessing the reports (from receiving the request for studying to announcing the final (result). The framework is as follows:

The first step to achieve this objective is to clarify legal procedures of the way of sending the reports in the organiization. To this end, attached chart (No.1) was prepared on the basis of the contents inserted in the by – laws of EIS.

The next step to articulate the implemention mechnism of the said by– laws is to present a framework and guideline for the preparation of "summary of plan" and "summary of preliminary assessment". The list of content of each of these reports can be used from tables 1 and 2. Furthermore, some guidelines have been inserted in order to enrich the reports and also to prevent the waste of time and energy.

Next step of the office is to articulate and suggest a directory for the preparation of EIS.

This report is prepared after preliminary review of the "summary of preliminary report " and , if necessary , completion of the information and inclusion of the reviewing group's suggestions.

Special mechnisms and guidelines for each of the 7 types of projects inserted in Article 2 of the by– laws are going to be prepared by forming specialized committees (consisting of experts, specialists and academicians) in the office of environmental assessment. Furthermore, The primary and final reviews of the assessment reports are also performed by the committees. Questionaries and checklists are being prepared to make sure of observing the artticles inserted in the by–laws as well as harmonized assessment of the reports.

Another measure taken by the office of environmental assessment is to specify and state the procedure of reviewing the reports,the relevant criteria and standards and its implementing processes so that the directorates general of D.O.E in provinces as well as producers of the final reports are in the process of reviewing.

Guidelines and proposals for the preparation of "Preliminary Assessment Report"

In order to make the report more comprehensive and expedite the process of reviewing, the observations of the following cases are recommended:

1) In each "preliminary assessment report "main information should be inserted on the first page and before the non- technical summary. The information consists of the name of organization or ministry in question, name and the specifications of the representative of project implementing body for keeping the connection, name of advisor and producer of the report, type of report and date of its production.
2) Using the maps, pictures, charts and tables to present the figures and information and to state the results is an effective way for reviewers and decision makers to get familiar

with the project.

3) The content of the report should be clear and easy to understand. Using the vague expressions, difficult words and complex analyses in the report would make the process of the review difficult.
4) Use very specialized information should be prevented. These types of figures can be put, if necessary, in the annexes together with their references.
5) Reports should be prepared scientifically, logically, and without any bias so that the decision makers have the opportunity of independent analysis.
6) The arrangement of chapters and sections in the report should be in accordance with the cases inserted in the guide for preparation of "preliminary assessment report" (table 2).
7) To complete the information and to be sure of their authencity, the opportunity of visiting project sites, if necessary, should be provided.
8) Presenting the real and accurate information, studying the actual effects and drawing logical conclusion by the report producers would make the task of recommendation easier and more reliable and prevents the waste of time and energy for data control.
9) Before the "preliminary assessment" begins, it would be much better to collect and study all the environmental laws, regulations, by- laws, standards and criteria related to the project.
10) Non- technical outline in the preliminary report should be able to answer the following questions:

- What is the type and objective of project?
- What are the needs and necessities for project implementation?
- What processes and operations does the proposed project have?
- Where is the project implemented?
- What processes does the project consist of? When does each one begin? And how long does it take?
- How is the general situation of environment in the region?
- What are effects of the implementation of project?
- What types of measures are taken to reduce the negative impacts of project?

Table1- A guide to the preparation of" summary of plan" form (report) (12 pages at most)

1) Name of company.
2) Name of proprietor.
3) Name of project.
4) Name and address of project implementing body.
5) Purpose of project and the necessity of its implementation.
6) Type and general specifications of project.
7) Implementing phases of project and their timetables (preparation, construction…).

8) Project activities (production line and secondary activities).

9) Type and amount of resources and raw materials consumed their place of provision, production capacity and the type and amount of main and secondary products.

10) Proposed place for the project implementation, location choices and the reasons of selecting the proposed place or places.

11) Infrastructural needs (roads, public services, housing…) and the existing resources.

12) An estimate of the needed manpower.

13) List of the negative and positive impacts of project implementation.

14) List of all types of important pollutants and wastes (air pollutants, industrial wastes, sewage and rubbish and radiation…produced through processes and operations).

15) List of preventive, controlling and reducing measures for each environmental impact.

Note: It is recommended that items 13, 14 and 15 be summarized, if possible, in one page.

Table 2-A guide to the preparation of "Summary Preliminary Assessment Report" for a project

The preliminary assessment report of a project includes the following cases and should be in 50 pages (at most):

1. non-technical summary includes : type and specifications of a project; existing choices, an outline of the existing environmental situation; main project impacts on environment; preventive, reducing and controlling programs for the negative impacts, and drawing the conclusion of environmental assessment(3 pages at most).
2. Description of the proposed plan or project (10 pages at most).
   - 2.1. Title of the plan.
   - 2.2. Objectives, needs, and necessities of the plan.
   - 2.3. Position of the project regarding the general policies and programs in country.
   - 2.4. Environmental laws, regulations and standards related to the project.
   - 2.5. Situation of the project proposed place (on the map, and referring to the distance from all existing uses in the region).
   - 2.6. Technical and land alternatives for the project.
   - 2.7. General phasing of the project (preparation, construction, implementation and operation…) and future development plans.
   - 2.8. Anticipated processes and operations in the project (production, services……) and production diagram.
   - 2.9. Side facilities and future projects (construction of roads, buildings and public services….).
   - 2.10. Plan specifications in each alternatives and phases include :
     - 2.10.1. Production capacities.
     - 2.10.2. General estimate of investment (Rials and foreign exchange value)
     - 2.10.3. An estimate of the type and amount of raw materials, their place of provision and

way of transfer.

2.10.4. An estimate of the type and amount of resources (water, energy, fuel….) and their cases of consumption, place of provision and way of transfer.

2.10.5. An estimate of manpower and place of provision.

2.10.6. An estimate of the type and amount of main and secondary products.

3. The preparation phase and infrastructural measures leading to the environmental change and destruction include : excavation, removal of plant coverage, construction of inactive pool, drainage change, digging and explosion, change of surface water route, construction of roads, public and service facilities…….(2 pages at most)

4. Main pollutants and wastes produced through processes and operations in each of the alternatives and plan phases include: air pollutants, industrial wastes, wastes and garbage, sounds, vibrations, radiation … (5 pages at most).

4.1. Weather and climate (descending, temperature and evaporation in 5-15 year duration) air pollution and their main resources.

4.2. Sound and vibration (sound level), sound pollution and their main resources.

4.3. natural environment (land and water habitats including list of plant and animal populations as well as rare and valuable species, four types of environmental zones).

4.4. social, economic and cultural environment (population and characteristics and its development, employment, housing, education, health, cultural and religious beliefs, cultural heritage)

4.5. Development plans and land use (agricultural, industrial and services development plans in the region, land use of the region and country spatial plan.

4.5.1. Anticipation of the negative and positive impacts of the plan on each of the proposed alternatives and phases (10 pages at most).

4.5.2. Impact on physical environment (earth, geological characteristics, water climate).

4.5.3. Impact on social, economic and cultural environment (population, employment, housing, education, and health, cultural and religious beliefs, cultural heritage and ….).

4.5.4. Impact on the other development plans and land uses in the region.

5. dangers , accidents and plan risks in each of the proposed alternatives and phases including : possibility of explosion, leakage, impacts of natural disasters and unexpected events (2 pages at most)

6. description of existing situation of the region's environment in the following fields, before the plan implementation for each of the proposed alternatives (together with map and preferably in the form of tables and charts) (12 pages at most) :

6.1. Definition of the study limit and showing on the map.

6.2. Physical environment.

6.2.1. Pedology (type and capabilities of work, slope, and erosion and…….) earth pollutants and their main resources.

6.2.2. Geology (topology, earthquake susceptibility, land slide and displacement…).

6.2.3. Water resources (situation, quality and quantity of surface and underground waters, situation of drainage in the region and flood and drought regimes) water pollutions and their main resources, current consumption of water resources.

7. Preventive, mitigation and controlling methods for each of the negative environmental impacts related to the plan activities (6 pages at most).

7.1. Proposing the specific methods of reducing impacts on physical, natural, social, economic and cultural environments.

7.2. Presenting the general program of environmental management for measuring and monitoring the environmental impacts and inspection and supervision on the good implementation of proposed measures related to the control and reduction.

7.3. Resources and references used in the preparation of the summary assessment report, offices, organization, real and legal persons.

8. Name, qualifications, responsibilities and assessment experiences of each of the advisors and producers of the preliminary assessment report.

9. Annexes.

添付資料 4-1　DOE EIA Manual

The diagram of the review procedure of the environmental evaluation reports

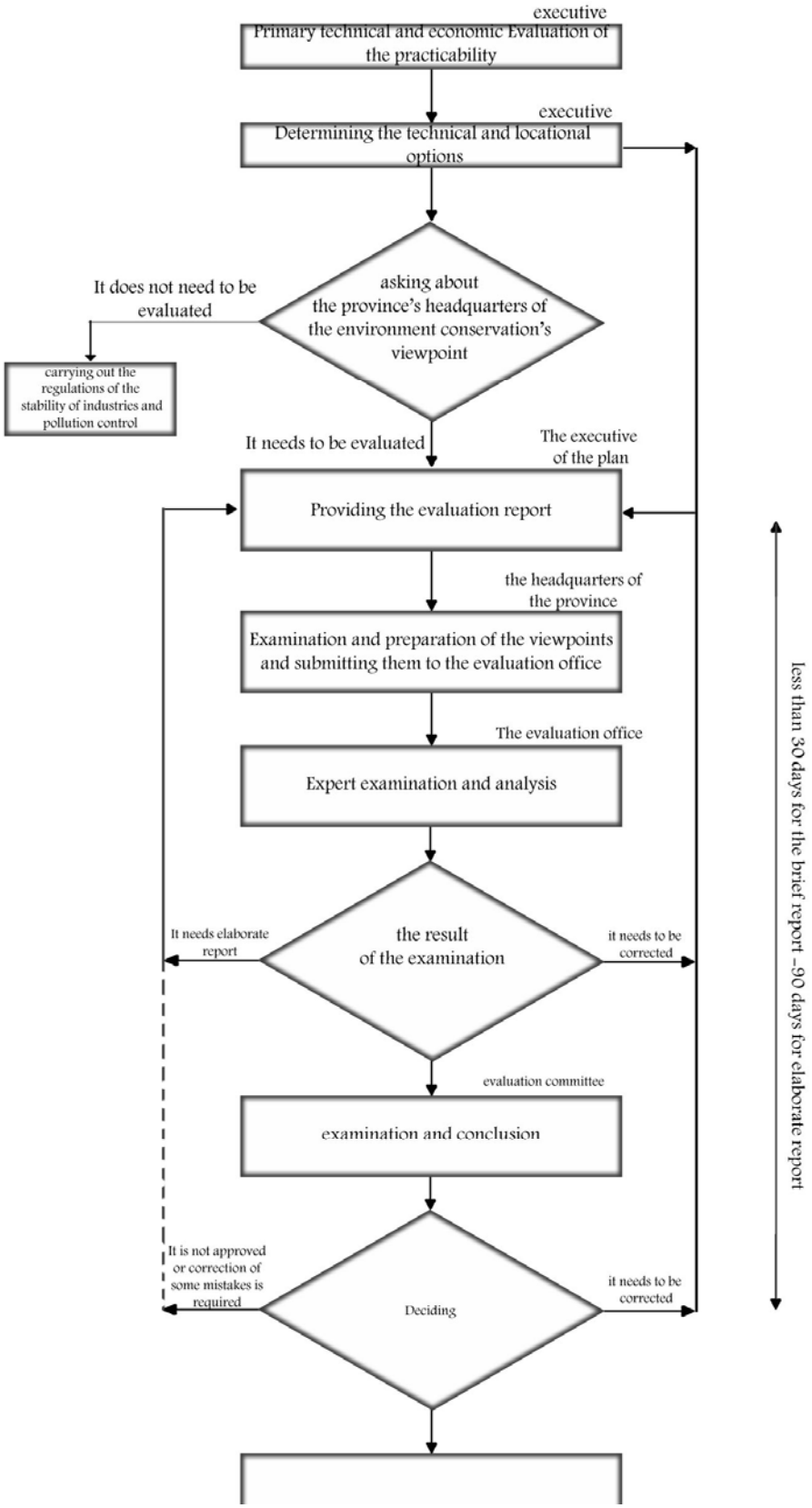

Table 2

The list of the directions for the evaluation studies of the environmental outcomes

	directions of the evaluation studies of the environmental outcomes
1	Petrochemical plants
2	Industrial towns
3	Forestry plans
4	Highways
5	Railway
6	Thermal power plants
7	Airports
8	Dams
9	Large industrial slaughterhouses
10	Steel industries
11	Refineries
12	Irrigation and drainage projects
13	Agriculture and industries
14	Places for urban garbage burial
15	Urban garbage burning places

Directions and suggestions for preparing the brief evaluation report

Below are some suggestions for making the report more comprehensive and accelerating its review process:

1- In each brief evaluation report, the main information should be placed on the first page and before the non-technical abstract. This information includes name, subject of the plan, name of the executive (the employer or investor of the plan, name of the ministry or organization in charge, name and particulars of the executive for keeping the contact, name of the consultant and those responsible for preparing the report, the type of the report and the date of preparation).

2- Using map, picture, diagram and table to show statistics, information and results is an effective way to help raters and decision makers know the project and comprehend the subjects.

3- The subjects of the reports should be simple, clear and frank. Using vague constructs, difficult expressions, and complicated analyses in the report will make the examination process difficult.

4- Very professional information should not be offered. Such statistics and information, when needed, should be mentioned in the indices with their references.

5- The report should be scientific, logical, and free from showing partial and bised views so that the readers have the opportunity to analyze the subjects independently and without any bias.

6- The order of sections and chapters of the report should be in accordance with the items mentioned the directions for preparing the brief evaluation report (table 2).

7- To complete the information and make sure the information is precise and accurate, there must be the opportunity to examine and visit some regional and local options in the project place, if needed.

8- Providing real and precise information, examining real effects, drawing a logical conclusion by the person who is going to prepare the report, in addition to make mutual trust, make the evaluation process easier and more reliable and prevent wasting of the time and energy for controlling information.

9- Before brief evaluation, all laws, regulations, by-laws, criteria and standards, which are related to the proposed plan, are better to be gathered and the agreement of the plan with them is better to be examined.

0- Non-technical abstract in brief report should answer these questions:

- Type of plan and the goal of its implementation.

- What are the needs and necessities of the plan implementation?
- What are the processes and operations of the proposed plan?
- Where is the plan going to be implemented?
- What are the general conditions of the region’s environment and its sensitivities?
- What are the most important environmental aspects of the plan?
- What are the importance and range of the most important environmental aspects of the plan?
- What factors will be influenced by the plan implementation.

Directions for preparing the summary of the plan
(Less than 12 pages)

1- Name of the company.
2- Name of the employer.
3- Name of the project.
4- Name and the address of the executive.
5- The goal of the implementation of the plan and its necessity.
6- Type and general characteristics of the project.
7- Executive phases of the project and their timing (preparation, manufacturing, etc.)
8- Activities of the Project (production line, secondary activities)
9- Type and amount of resources and materials and their sources of finance, production capacity, and type and amount of primary and secondary products.
10- The proposed location for the implementation of the project, locational options and the reasons to choose the proposed location or locations.
11- Fundamental needs (way, general services, location, etc.) and existing facilities.
12- Preparing required human resources.
13- General conditions of the region's environment and its sensitivities.
14- Providing the plan of the location of implementation, relative to the nearest fourfold districts of the organization of environment conservation.
15- The list of the varieties of the important pollutants and wastes (air pollutants, industrial and hygienic drains, wastes, garbage, noises and rays and other things which are produced by processes and operations.
16- List of positive (beneficent) outcomes and negative (undesirable) effects of the plan implementation.
17- Importance and range of the most important environmental aspect of the plan.
18- List of actions for prevention, control and reduction of each environmental effect.

Directions for preparing the brief evaluation report of the plan

Brief evaluation report of the plan should include the following items in less than 50 pages:
1- non-technical abstract, including type and characteristics of the project, existing options, a summary of the current environmental conditions, important effects of the plan on the environment and plans for prevention, reduction and controlling of the undesirable effects, and conclusion from environmental evaluation (less than 3 pages).
2- Explaining the proposed plan or project (less than 10 pages).
2-1- The plan title.
2-2- Objectives, needs and necessities of the plan.
2-3- The position of the plan in relation to major plans and policies of the country.
2-4- Environmental laws, regulations, and standards related to the plan.
2-5- Proposed location of the plan (on the map with referring to all distances from all existing efficiencies of the region).
2-6- Technical and locational options of the plan.
2-7- Determining the general phases of the plan (preparation, manufacturing, implementation and putting into operation, etc.) and future development plans.
2-8- Explaining elaborately the activities of the plan based on the phase of occurrence and operation.
2-9- Production line diagram, and explaining the processes for industrial and mineral (productive) units.
2-10- Peripheral constructions and succeeding projects (construction of ways, buildings, general services, etc.).
2-11- Characteristics of the plan in each phase and option of the plan including:
2-11-1- Providing production capacity, (with regard to industrial, mineral, constructional and productive plans such as power plants) or offering the level in which the services are provided for construction and services plans (construction of ways, airports, gas pipelines, etc.).
2-11-2- Estimating financial and foreign exchange investments.
2-11-3- Estimating the type and amount of the materials, the source of finance for them, and the method of transference.
2-11-4- Estimating the type and amount of resources (water, energy, fuel, etc.) and substance that are going to be consumed, their location and the method of transferring them.
2-11-5- Estimating the human resources and the way of preparing them.
2-11-6- Estimating the amount of primary and secondary products (for productive plans).
3- [*It has not been scanned properly*] ….. drainage, excavation, explosion, changing the path of superficial waters, sources of loans, constructing roads, general and service establishments, etc., (less than 2 pages).
4- pollutants and wastes by processes and operations in each option and phase of the plan including air pollutants, industrial and hygienic drains, wastes, garbage, noises and rays, etc., (less than 5 pages).

5- Dangers, disasters, lack of safety related to the plan in each proposed phase and option including explosion probability, subsidence, the results of occurrence of the natural disasters and unexpected events (in less than 2 pages).
6- Explaining the current environmental conditions of the region:
In the following field, before the implementation of the plan for each proposed option (with maps, preferably in form of tables and diagrams less than 12 pages).
6-1- Definition of the study scope and demonstrating on the map
6-2- Physical environment including:
6-2-1- Pedology (type and capabilities, gradient, erosion, etc.,) soil pollution and its major sources.
6-2-2- Geology (such as topography, seismology, etc.,).
6-2-3- Water resources (location, quality and quantity of superficial and subterranean waters, the state of drainage and the region's torrential and droughty periods), water pollutions and their important sources, current consumption of water.
6-2-4- Climate and region (regional state of the compass card, snowfall and rainfall, temperature, and evaporation within a period of 5 to 10 years), air pollutions and their important sources.
6-2-5- Sound, vibration, sound pollution, and their important sources.
6-3- Natural environment (marine and land habitats, with mentioning the list of plant, animal and valuable and rare species societies, fourfold environmental districts).
6-4- Social, economic and cultural environment (population and its characteristics and alterations, employment, facilities, education, health, cultural and religious beliefs, cultural heritage).
6-5- Briefly introducing all development plans of the study scope that are ratified or in process of execution (agricultural, industrial and services development plans, with demonstrating them relative to the implementation site….)
7- Predicting the positive and negative effects and outcomes of the plan for each proposed phase (less than 10 pages) as follows:
7-1- Effect on physical environment (topography, soil, geological characteristics, water, climate and region).
7-2- Effect on natural environment (plant and animal societies, marine and land habitats).
7-3- Effect on social, economic and cultural environment (population, employment, house, education, health, cultural and religious beliefs, and cultural heritage).
7-4- Effect on efficiencies of the lands and other development plans of study scope.
8- Analyzing the effects on efficiencies and environmental outcomes of the plan and making inference.
9- Environmental management and supervision of the plan:
9-1- Providing prevention, reduction and control methods for each negative environmental effect related to the activities of the plan (less than 6 pages).
9-2- Providing the plan of environmental management for measuring and supervising environmental effects and inspecting the way the proposed control and reduction actions are carried out.

10- Resources and references that are used in preparing the brief evaluation report, organizations, governmental organizations, actual and legal persons.
11- Name, particulars, responsibility, and evaluation experiences of each consultant and those who are preparing the brief evaluation report.
12- Indices.

Instructions for investigating evaluation reports
Description

Article 1- goals:
1- Carrying out the article 105 of the third country's Development Plan Act.
2- Investigating the evaluation reports submitted to the organization of environment conservation and deciding about them.
3- Supervising how well the plans that their environmental evaluation has been done and have been approved by the organization, are being carried out, and making sure that the activities are in accordance with the approved managerial plans.

Article 2- investigation committee:
investigation committee for evaluating environmental reports is made of the following people:
1- Deputy of human environment (the head of the committee)
2- Director General of the environmental evaluation office (the secretary of the committee)
3- Expert from the environmental evaluation office.
4- Deputy of natural environment and biologic diversity department.
5- Expert from university.
6- One person from NGOs who is selected by the committee.
7- Director General of the organization of environment conservation of the province or his representative with full powers.
8- The representative of the management and planning organization (according to the article 105 of the third Development Plan Act).
9- The representative of the employer (just in some sessions for providing some explanations).
The secretariat of the evaluation committee will be at environmental evaluation office.

Article 3- procedure of the evaluation committee:
The formation of the committee should happen in a time that makes it possible to decide about the submitted reports in determined time.
1- Providing a summary of the project or plan by the secretary of the committee.
2- Providing a summary of the location, acceptability of the plan or project in that province by Director General of the organization of environment conservation of the province.
3- Mentioning the weakness and strength points of the report and expert suggestion of the evaluation office relating how to deal with the report of environmental effects of the plan or project.

添付資料 4-2　WRMC EIA Guideline

Guidelines for environmental assessment of the river engineering projects

1-Identification stage

2- Explanatory stage

3- Descriptive stage

Booklet number 227

Department of management and planning
Technical assistance department
Bureau of technical assistance and standards making

Ministry of energy
Iranian water resources management agency
Bureau of water engineering standards

Islamic Republic of Iran

Guidelines for environmental assessment of the river engineering projects

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In the name of God

Iran Presidency
Department of management
and planning
Head of management office

Circular letter to executive organizations, consultants and contractors	**Number: 1665/54-4416/105**
	Date: 18.4.1380

Topic: Guidelines for environmental assessment of river engineering projects (Identification, Explanatory and Descriptive stage)

By virtue of the provisions of the executive standards of the construction plans article 23 of the law of program and funding as a part of the technical and executive system of the construction plan of the country (act No. 24525/T 14898H enacted at 4.4.1375 by the Board of Ministers), the booklet No. 227 prepared by the office of technical issues and standards making of this organization is published under the title of guidelines for environmental assessment of the river engineering projects (identification, explanatory and Descriptive stage) .
Executive organizations, consulting engineers, contractors and other agencies can make use of this booklet as a guide. If they can use better methods and guidelines, they won't need to follow procedures mentioned in the present booklet.
The above mentioned agencies should send a copy of the alternative methods to the office of technical issues and standards making.

Mohammad Reza Aref

Vice-president of the country and president of the organization

In the name of God

Preface

It is very important to follow the regulations, criteria and standards in the stages of the study, execution, operation and storing the construction plans in terms of the technical and economic justifications of the plans, the quality of designing and storage and operational costs.

The new technical and executive system of construction plans of the country (passedBy the Board of Ministers dated 23.3.1375) highly emphasizes the application of criteria, standards and technical regulations in the process of preparation and execution of the plan and also underscores the costs of storage and final costs of the projects.

Considering the abovementioned points and also taking climate conditions and limitations of water resources into account, the water section of the ministry of energy (plan of the standards making of the water engineering) in cooperation with technical section of Iran department of management and planning (office of technical issues and standards making) have set out to prepare the water engineering standards of the country and this based on article 23 of the law of program and funding.

Water engineering standards have been prepared having the following points in mind:

- using the expertise and experiences of the experts in both general and technical sections
- Using the valid international sources and standards
- Making use of the experiences of the executive organizations, institutions, foundations, industrial units and study and designing groups
- avoiding repetitive works and wasting the financial and nonfinancial resources of the country
- following the rules and principles made be the Iran organization of standards and industrial research and other organizations involved in standards making.

Thanks to the work of the experts in making this standard, we hope that the executives and managers of the water section will use this standard to make progress and move towards independence of the country in this field. We also hope that the suggestions made by the experts in the field will help us to further develop this standard.

Deputy of technical issues
Summer 1380

Water engineering standard

A – 216

Standard

Guidelines for environmental assessment of the river engineering projects (Identification stage)

Water engineering standard **No. A-216-1379**
Mehr **137**

Committee members

Developer:

Mr. Parviz Samar	expert	PhD in Environmental Engineering (water and sewage)

The present standard has been reviewed and verified by the committee of “investigation of the environmental effects of water plans” hold in the bureau of water engineering of Iran.

Mr. Mojtaba Ardestani	Assistant professor at Tehran University	PhD in Civil engineering (Water resources)
Mr. Ali Akbar Pir Azizi	Member of the board of scholars at University of science and technology	PhD in Geography (Environment)
Mr. Mohammad Hassan Chiti	Iran’s company of the development of water resources and energy	MA in water constructions
Mr. Behrooz Dehzad	Professor at Shahid Beheshti University	PhD in Ecology
Mrs. Mina Zamani	Designer of the water engineering standards of the country	BA in Chemical Engineering
Mr. Mohammad Mohammadi	Ministry of Energy	MA in Environmental sciences

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Introduction

As parts of its services, the bureau of the water engineering standards has set out to prepare the standards for the environmental studies of the water engineering projects. This standard has been planned in three stages of identification, explanation and Description in accordance with most of the construction plans including the plans for river engineering.

Studies of the environmental assessment of the river engineering project or projects can be considered as part of such studies at identification stage. In case, the studies reveal adverse effects of such plans, the studies will be suspended at this stage and all the plan or plans will be abandoned. If no adverse effects are found at the end of this stage, the plans will be abandoned. In cases in which the current studies will extend to the explanatory stage, there might be a need for further investigations. In any case, these studies like any other identification studies are done with regard to the environmental limitations based on present information and little outdoor studies in order to verify or reject further studies in this regard.

As a reference book, the present standard includes the methods, guidelines, regulations and criteria necessary for the study of the environmental assessment of the river engineering projects at identification stage. Part of this standard is devoted to the method of preparing the environmental report of the river engineering projects. The challenges present in environmental studies in the country such as lack of expertise, lack of information, sampling and analysis of samples and finally the costs of the studies are fully considered and the experiences and standards in other countries are used as much as possible. We hope that this attempt will be useful for ensuring the sustainable development and promotion of the quality of the public life in Iran.

● Considerations made in the present standard

This standard is made in order to be used in studies of the environmental assessment of the river engineering project or projects at identification stage. In order to facilitate the application of the current standard, the user's attention is directed towards the following points:

1- The environmental assessment methods of the river engineering plans are divided into two separate parts:

- Environmental assessment of the particular projects
- Environmental assessment of the regional projects

The environmental assessment of the particular projects is limited only to the environmental effects of a particular project, whereas the environmental assessment of the regional projects deals with the environmental assessment of multiple studies done in a region and are closely related to each other. The scope of the studies of environmental assessment of the regional projects is very vast and in some cases may exceed the predetermined boundaries of the country.

The environmental assessment of the particular projects and environmental assessment of the regional projects have many aspects in common; however attention is also paid to the particular considerations related to the above mentioned assessments.

2- Studies of the river engineering plans, as any other construction plans, include three stages of identification, explanation and Description. There is a separate standard for Studies of environmental assessment at each of these stages. The present standard is exclusively made for the studies of environmental assessment at identification stage; however the measures taken in the environmental studies or application stage which are necessary for the environmental studies at explanatory stage are also explained.

3- The method of investigation in the present standard is organized in terms of the priority of different parts in the application of the plans, whereas the order of the same parts differs in the “environmental assessment report”. In other words, the order of parts in environmental assessment report is not the same as the parts in environmental assessment studies.

4- The present standard tried to deal with all the necessary factors involved in doing the studies of the environmental assessment of the river engineering project or projects at identification stage. It is obviously not possible to apply all the parts of the present standard due to the limitations in the extent of the projects and particular environmental conditions of the site, hence only particular parts are applied to the present studies.

5- Environmental assessment report and the process of its review and verification may change based on the decision made by organizations involved. All amendments will be taken into consideration in the final draft of this standard and the particular environmental assessment groups shall contact those organizations.

6- Parts of the present standard requires the environmental assessment groups or consulting engineers to offer recommendations in order to promote the practice of governmental agencies concerning environmental assessments. We hope that such recommendations will provide favorable grounds for environmental assessment groups or consulting engineers to come to a common agreement and may lead to the establishment of environmental regulations in governmental agencies.

1- Collecting the laws, regulations and terms related to environmental issues

Studies of the environmental assessment of the river engineering project or projects are generally done because of the necessities of the environmental laws and regulations. Studies of the environmental assessment of the river engineering project or projects are being conducted in their broadest possible range in order to keep face with the sustainable development in the national scope and also to protect the environment from international point of view.

Considering the limitations at the identification stage of the Studies of the environmental assessment of the river engineering project or projects, it is important to note the following points:

- Plan or plans are evaluated based on national laws.
- International laws and regulation related to environment are also taken into account.
- It is not necessary to investigate the international laws and regulations at this stage. They will be dealt with fully at explanatory stage where those regulations will be evaluated and proper recommendations will be made.
- Regulations determining the likelihood or unlikelihood of further studies will be especially taken into consideration.

Based on the abovementioned points, the environmental assessment groups need to direct their attention to all the laws and regulations which should somehow be observed in the completion of the studies. These investigations should be conducted in the following cases:

- Laws, regulations, privacies, suggestions, recommendations and other considerations related to the environmental issues resulting from the river engineering projects.

- The international laws and regulations concerning the river engineering projects at borderlines.

The summary of these investigations should be mentioned at the preface of the environmental report at identification stage and the important points should be noted at appendices of the reports. The following part includes guidelines for conducting these investigations:

1-1 Terms and phrases

Different terms and phrases might be encountered while dealing with environmental laws and regulations. These key terms which are mentioned in the following parts need to be considered individually:

1-1-1 Laws

Rules and regulations passed by the parliament which are considered the most important and valid laws in the country fall into this category.

1-1-2 Regulations

A set of rules and executive methods which is made based on legal and biding procedures and may include technical standards as well.

1-1-3 standards

Standards refer to those technical characteristics or available documents which are based on missing parts of knowledge, art or experience and are made by all the beneficiaries based on implied agreement and verified by responsible organizations in order to promote the efficiency of the society.

1-1-4 World summit (convention)

a multilateral agreement in which policies, goals of the plans and commitments of the governments are indicated is called world summit and may include one or more treaties.

1-1-5 Treaty (Protocol)

A multilateral agreement concluded among multiple countries regarding a particular subject in order to achieve certain goals is called a treaty.

1-2 Laws, regulations and terms related to environmental issues of the country

In order to investigate the environmental laws and regulations of the country, it is necessary to refer to the latest edition of the collection of environmental laws and regulations prepared and published by the judicial office of the organization of the protection of the environment. The summary if part of this collection is attached to the present standard as Appendix 1.

1-3 International commitments

International commitments related to the protection of the environment approved by Iranian government and it includes the international conventions and treaties most of which are attached to the present standard as Appendix 1.

2 Investigating the details of the plans and options

As part of the studies of the environmental assessment of the river engineering project or projects, it is necessary to conduct a concise review of all the activities and processes involved in the river engineering project or projects using the reports and information offered by the consulting engineers and other responsible sources. This information will act as the basis for evaluation of the effects of the activities on the environment of the plan site.

The required information for studies at this part can be found in the collection compiled by the river engineering committee of the office of water engineering standard of the ministry of energy under the title of “constructions and practices in river engineering” and also from the range, dimension and program of the committee of the river engineering (leaflet No. 95-N). Part of the required information is mentioned below.

1-2 List of the constructions and water engineering projects

The constructions and river engineering measures taken in the country are based on the aforementioned standard and are as follows:

- Groin
- Revetment
- Levee
- Walls (retaining wall, flood wall, etc.)
- Rims (guide bank, approach bank, etc.)
- dams (high dam and low dam, slope dam, adjusting dam, dam and dike, check dam, debris dam, etc.)
- Bed stabilizers (sill, drop structure, apron, etc.)
- Sediment controller (sediment diverter, vane, vortex tube, debris dam, etc.)
- Floodways
- Shortcut Canals
- Navigation channel
- Dredging
- clearing and snagging
- Removing sands and gravels from the river

2-2 Terms related to constructions and water engineering projects

Key terms related to constructions of river engineering are presented below in orde to help and guide the environmental assessment studying group to identify the activities and classifying the river engineering project or projects.

2-2-1 Groin

It is a kind of construction made on the rivers to protect the banks from erosion, carried sediments by the flow of water, directing water flow toward one point or increasing the depth of the water from the river bank towards inside relative to the direction of the water flow. Groins are made of stones, sans and soil, wooden, concrete or metal stanchions, and also gabions. Groins are generally divided into twp parts of permeable (open) and impermeable (close).

2-2-2 revetment

Protective revetments are constructions which are build in one direction in vicinity of the river bank and are used to protect the banks from erosion. They are also used to protect the slopes of embankments, levees, groins, etc. there are different types of revetments such as stone, gabion, concrete, asphalt, fencing and sack ones. Plant shields can also be put in this category.

2-2-3 levee

It's a small ridge constructed at short intervals which parallels the course of a river to act as artificial banks to prevent flooding of the adjoining countryside when a river floods over its banks.

2-2-4 Walls

It's a kind of construction used to contain flood or erosion which is constructed along the bank using hard and durable materials such as concrete, stone, wood, etc., where there is not enough space to use other constructions or there are other impediments. Flood walls constructed in urban areas or retaining walls (protective) constructed to protect the edges from destruction are examples of this type of construction.

2-2-5 Rims

It's a kind of embankment or protective structure built on both sides of a dam, dike, bridge, etc. used to contain and direct water in a specific direction.

2-2-6 Dams

These are kind of constructions built across the river for diverting water, raising the water level, dividing the flow, temporary storing, containing the sediment, etc. Diverting dams, debris dams, high dams, low dams, etc. are examples of this type of construction.

2-2-7 Bed stabilizers

These are constructions built on parts of the river to protect the bed from erosion. these constructions are sometimes used to save energy . Different types of stabilizers are sill, drop structure, apron, etc.

2-2-8 Sediment controller

These are constructions built on the direction of rivers or at the entry of canals to contain or decrease the incoming sediments into the canals.

2-2-9 Floodways

It refers to a river channel and parts of a flood plain and also a diverting channel through which the flood passes.

2-2-10 Shortcut channels

Shortcut channels are built as artificial constructions in order to amend the direction of river flow.

Shortcuts are made to cut the direction of a river flow and create a shorter and more straight channel and as a result removes the previous twists and curves.

2-2-11 Navigation channel
It refers to a channel or river in which sailing is possible.

2-2-12 Dredging
Dredging refers to the act of removing the sediments from the bed or edges of the river and moving them out of the river or another part of the river so that they might not return to the main channel. This operation is done using machineries such as power shovel, and other scooping devices in order to deepen harbors and waterways and provide the conditions for navigation.

2-2-13 Clearing and snagging
It refers to the act of clearing the snags (such as sediments, trashes, stones, etc.) and removing the trees or plants grown on the bed of a river.

2-2-14 Removing sands and gravels from the river
It refers to the act of removing river stuff (sands, gravels, etc.) from the bed and edges of the river and using them as the materials for constructing roads, concrete, etc.

2-3 General information for the constructions and water engineering projects at identification stage
General information required for the studies of the environmental assessment of the river engineering project or projects including both particular projects and regional projects gathered by the river engineering committee of the office of water engineering standard of the ministry of energy under the title of “constructions and practices in river engineering” are explained in part “2-3” of the guidelines for environmental assessment of the river engineering projects (Explanatory stage) of standard No. A-211. Therefore the required information in studies of the identification of plan or plans can be obtained from the above mentioned part and use them in investigation of plans and options. Not all information offered in this part might be applicable to our studies and this information should be used in accordance with each specific project or projects undertaken.

2-3-1 Basic information
Basic information refers to all the information used in planning the constructions or the practice of river engineering (mentioned in art 2-2, Terms related to constructions and water engineering projects). Part of this information might be applicable to environmental assessment at identification stage.
The following information needs to collected:

- Map of the possible site of the project or projects at proper scale so that it includes the possible site of constructions in which the operations are undertaken.
- General plan of constructions and other river engineering practices
- Map of the roads leading to site of the project, map of the possible workshop and map of the possible resources
- The summary of investigations of meteorology, hydrology and spate
- The summary of investigations of hydraulics, erosion and sediment, morphology, and geology in designated parts
- The summary of investigations of river water quality

2-3-2 Constructive features

The constructive features of constructions or practices of the river engineering project or projects need to be briefly investigated. The important points with regard to each construction or practice are explained in parts of “2-3-2-1 to 2-3-2-9” of the guidelines for environmental assessment of the river engineering projects (Explanatory stage). These guidelines are prepared by river engineering committee of the office of water engineering standard of the ministry of energy under the title of “constructions and practices in river engineering”.

2-4 Operation

A brief summary of the operation in designated constructions or practices of river engineering project or projects needs to be prepared. This summary should be prepared using the guidelines provided by river engineering committee (constructions and practices in river engineering) of the ministry of energy and should include the following:

- Land preparation: land size and its location, amount of excavation and earthwork
- The materials: type of material, approximate amount of materials, storing materials and the source of extraction
- Constructive operation: amount of construction using concrete, metal, etc.
- Time period of the operation
- Ways of ejecting the waste materials produced by the operation
- Sources: source, level and depth of the location
- Required machineries: type, volume, number
- Workshop facilities: workforce residence, service facilities, sanitary facilities
- Manpower: approximate estimate of manpower and experts at operation stage of the plan or plans

3- Collecting information and identifying the organizational features

This part explains the method of collecting information and organizational feature of the river engineering projects. The guidelines provided in this section not only helps us in gathering the information but also reveals the major challenges that should be dealt with in river engineering project or projects.

3-1 Collecting information and current resources

The studies of the environmental assessment of the river engineering projects are generally conducted in a short period of time based on present data and using little amount of research. Therefore it is very important to collect information and identify the present resources. This information is applicable in the following areas:

- Determining the areas of the study
- Determining the scope of studies
- Assessment of the environmental effects
- Office work and verification of the plan

Considering the abovementioned points, it is necessary to first identify the organizations involved, the steps that should be taken, and the stages of verification of the studies. Then measures should be taken to collect required information.

3-2 Identifying the organizations and agencies involved in the project

The identification of the organizations and agencies involved in the process of the studies should be carried out until all the organizations related to the plan are recognized. The process of identification is important due to the following reasons:

- Collecting information in order to do studies of environmental assessment
- Identifying the amount of effect on organizations or agencies mentioned in plan or plans

The participating institutions and agencies are divided into two groups of governmental and nongovernmental institutions. The method of dealing with these institutions is mentioned below.

3-2-1 Governmental institutions and agencies

As mentioned before, it is necessary to determine the governmental institutions involved in river engineering project or projects and also organizations which are used as the source of information for the identification purposes. These organizations which are related to the practices of river engineering are as follows:

- The ministry of energy
- The ministry of agriculture
- The ministry of housing and urban development
- The ministry of health and medical education
- The ministry of justice
- The ministry of road and transportation
- The ministry of construction
- The ministry of interior
- Department of environment
- Division of water engineering in Islamic Revolutionary Guards Corps and Mosazafan Foundation
- Provincial disaster task force

3-2-2 Nongovernmental institutions and agencies

Some nongovernmental institutions and agencies might be a good source of obtaining information for environmental assessment project or projects. Considering the nature and scope of the river engineering project or projects, the following nongovernmental institutions might be a good help:

- Environmental associations
- Environmental colleges and other fields related to environment
- Industrial syndicates
- Consulting Engineers Company or contractors of water and sewage projects
- Any nongovernmental institutions working in this area

3-2-3 Collecting institutional information

It is possible to obtain information from different sections by calling their environmental control units or contacting environmental experts or persons in charge of environmental issues in these organizations.

The selected environmental studies group will contact these units or experts to do environmental assessment studies. The contact with thee organizations and sections will be made after the supervisor is selected. There might also be a need to form bilateral or multilateral meetings with these sections.
It is also necessary to exchange views with these organizations and sections before publishing the final report on environmental assessment studies.

3-2-4 Exchanging institutional information

The environmental assessment studies of the river engineering project or projects are the result of exchanging views between the environmental assessment group and the involved section. It is necessary to note the following points in this regard:

- Identifying the major issues related to the plan or plans and including those issues in the assessment studies
- Exchanging views with experts in the field and analyzing issues in order to determine the scope of studies
- Locating the necessary data in document centers or libraries, software and informatics
- Using institutional facilities in managing the environmental assessment studies in terms of providing manpower, sampling and laboratory facilities, transportation and residence, exchanging experts and funding
- Identifying the role of institutions and organizations in environmental assessment studies and verification of plan or plans

4 Analyzing the present situation

At the environmental assessment stage of the river engineering project or projects it is first necessary to identify the present environmental situation of the area affected by each particular project or regional projects. The study at this stage goes as far as the environmental effects are clearly identified. The present environmental situation includes the physical, chemical, biological and socio-economical environmental factors.
The scope of the investigation of the aforementioned environmental factors relates to the place or area of the river engineering project or projects which are determined based on suggestions made by the expert group. If the pans only apply to a limited section of the river, the scope of investigation will also be limited to the information obtained from that limited area; however if the plans include a large area along the river, the scope of investigation will be further expanded and may include other areas as well. In such cases, the environmental factors involved in all sections should be investigated and evaluated.
The investigations for identifying the present environmental situations related to the river engineering project or projects at identification stage are classified as below:

- Physical and chemical environmental
- Identification of ecologic indicator
- Socio-economic environmental

The abovementioned investigations include the environmental factors in environmental assessment at identification stage and also the indicators that should examined. The investigations are generally based on the present data, however if there is lack of data in this regard, they might be a need for a very limited sampling and experiments. What is clear at this stage is that environmental assessment studies are very limited in range due to the nature of such studies.

4-1 Physical and chemical environment

The investigation of physical and chemical environment includes the following factors:

- Meteorology
- Hydrology
- River hydraulics
- Erosion and sediment
- River water quality
- Underground water
- flooding
- Geology
- River morphology
- Seismology
- Soil science

It is necessary to identify the indicators that might affect the practice and application of the river engineering project or projects on the abovementioned factors. Investigation of the above aforementioned factors is possible through the collection of information for the application of plans by consulting engineers or other sources. These factors are classified as follows:

4-1-1 Meteorology

In this part the following information should be briefly investigated:

- The average monthly and yearly temperature, the maximum monthly and yearly temperature
- Amount of evaporation and its calculation
- The average monthly and yearly rain in the region
- Rain distribution during the months and seasons
- The ratio of snow to the whole downfall in the whole year in the region
- Analysis of wind and humidity
- Depicting a picture of the climate of the region

4-1-2 Hydrology

- The average monthly and yearly discharge in the region
- Amounts of discharge for returning periods of 2, 5, 10, 25, 50, 100 years in the plan site
- Brief investigation of the present situation concerning the river water sources

4-1-3 Hydraulic of the river

- The approximate dimension of the site of the project
- Initial estimate of the flow (plan discharge dominant discharge and basic discharge) in site of the project or projects
- Estimate of hydraulic indicators (roughness coefficient, average speed and maximum speed relative to the above discharge and depth of the site)
- Initial investigation of the area of floodway resulting from the discharge flow of the plan or plans
- Initial investigation of tidal rivers

4-1-4 Erosion and sediment

- Initial estimate of the average monthly and yearly density of the river sediment in site of the project or projects
- Initial estimate of the amount of load at the bed and its ratio to the total yearly sediment in site of the project or projects
- Brief investigation of the types of erosion in site of the project or projects
- Brief investigation of removing of river materials in the area of the project or projects

4-1-5 Water quality

- Brief investigation of temperature in site of the project or projects
- The estimate of oxygen saturation in site of the project or projects
- Brief investigation of the physical characteristics of the river water including dolor, smell, darkness, floating particles in site of the project or projects
- Brief investigation of the chemical characteristics of the river water including: pH, the soluble elements, electrical conduction, solidity, heavy metals, chlorinated hydrocarbons, mineral phosphate and nitrogen in site of the project or projects
- Brief investigation of the biological characteristics of the water including BOD, coliform, E. Coli in site of the project or projects

4-1-6 Underground water

- Investigation of the level of water and its alterations, and investigation of the direction of underground water and its alterations in site of the project or projects
- Brief investigation of the physical and chemical quality of the underground water including temperature, pH, electrical conduction, the soluble elements, heavy metals, chlorinated hydrocarbons in site of the project or projects
- Brief investigation of the biological characteristics of the underground water including, coliform, E. Coli

4-1-7 Risk of flood

- Brief investigation of the factors involved in flood making
- Determining the approximate location of flooding points in site of the project or projects

4-1-8 Geology

- Brief investigation of the geological and meteorological processes affecting the river
- Brief investigation of the morphology of the region including surface components and surface form and condition
- Initial estimate of the sources and materials required for undertaking the project

4-1-9 River morphology

- kin and shape of the river along its direction in relation to the topography of the watershed, linear slope of the valley, processes of erosion and sediment, the features of the plan, seismology, Flood hydrograph and regime of flow in different parts of the river
- Consistent and inconsistent meanders of the river in site of the project or projects

- Brief investigation of the alterations in slope of the materials at river bed
- Brief investigation of the meandering and braided or arterial conditions, meeting or departing points of the river branches and making shortcuts in the direction under examination caused by the natural happenings or made by human intervention in the past
- the effects of removing the river materials on its morphology
- Initial report on the condition of the river bed and its type

4-1-10 Seismology

- Brief investigation of the number of earthquakes in the past
- The active clefts in the region

4-1-11 Soil science

- Brief investigation of the physical (texture and structure) and chemical (pH, cation exchange capacity) characteristics of the soil in the region of the plan
- The main orders and sub-orders of the soil based on their new classification in site of the project or projects
- Brief investigation of the lands near the river in relation to their physiography, types and erosion in site of the project or projects
- Initial estimate of the presence of toxicants including insecticides, heavy metals in the soil and its harmful effect on plants in the region
- Brief investigation of the fertilizing compounds in faming lands near the river in the location of the project

4-2 Overall identification the ecologic indicators

It is necessary to identify the ecologic limitations of location of the project or projects at the identification stage of the environmental assessment of the river engineering project or projects. The type of studies at explanatory stage should also be clarified at this stage. The results of this part will also be used in calculating the approximate estimate and making decision about the plan or plans concerning the costs of reducing the environmental effects on the region.

The ecological system of the region in which the river flows is a combination of water and land ecology. What is important about these ecological systems is that the ecological factors including animal and plant community depend on the hydraulics of the river, physical and chemical factors and finally the socio-economic factors in the region. The bilateral effect of the land ecology and water ecology should be especially taken into account. Because of the time limitations and the nature of studies at identification stage, the following points should be considered in relation to the ecological systems of the river engineering project or projects:

- Brief investigation of the species from the economic point of view
- identifying the endangered species
- Brief investigation of the species needed for the other species to live longer
- Brief investigation of the species important for the strength of the structure and function of the ecological system (species with more than 50 percent living population)
- Investigation of the major settlements
  The following parts deal with the ecological factors influenced by the river engineering project or projects. The indicators required at the identification stage of the environmental assessment are also mentioned.

4-2-1 Ecology of the water

In order to investigate the ecology of the river water, it is necessary to identify the plant community (flora) and animal community (fauna) of the river with regards to the above mentioned points. The following points need to be considered:

- Identifying the sensitivities of the ecological factors in regard to the physical, chemical and hydraulic parameters of the river
- Determining the scope of the studies required at explanatory stage
- Identifying the possible limitations in river engineering project or projects in water ecology
- The initial estimate of the limitations with regards to the capacity and extent of the plan or plans for further decision makings
  Certain environmental factors are important at this stage. They are explained below.

4-2-1-1 Plant community (flora) of the river

The plant community (flora) of the river needs to be briefly investigated. This investigation includes the type of communities, geographical distributions, the important species forming these communities and finally population density. The quantitative and qualitative assessment of these communities should be based on the present statistics and information. In case there is not enough data, such assessment will be done through direct studies or limited laboratory experiments.
The main plant community used in the environmental assessment studies of the river consists of the following elements:

- Periphytons
- Macrophytons

It is well known that phytoplankton also form a major part of the plant community of the river, but they are not included in river engineering project or projects at assessment stage since they require a lot of time and heavy costs. These kinds of studies are done in short term and almost briefly. Therefore these studies are limited to periphytons and macrophytons.
A brief investigation of the “periphytons” and “macrophytons” is explained below in order to guide the environmental assessment group.

4-2-1-1-1 Periphytons

Environmental assessment of the river engineering projects (explanatory stage), number A-211 gives a thorough account of periphytons and their role in environmental studies. As mentioned before, periphytons are very sensitive to the physical and chemical contamination and as a result they are seen as a distinguishing factor in qualitative assessment of water.
The excessive growth of periphytons in contaminated rivers will damage the view of the water, alterations in the alkaline and oxygen solution and change in the smell and taste of the water.
Their excessive growth may also cause them to detach from the main land and accumulate in different parts along the river and form sludge. Due to these factors periphytons gain importance as a good indicator in any kind of short-term environmental studies including environmental assessment studies.
The brief investigation of the quantitative and qualitative features of periphytons in assessment studies is carried out in the following ways:

- Collecting information and research data
- Outdoor observations and investigations along the river
- Sampling and laboratory examination

A - Collecting information and research data

Unfortunately there is little information about the biological features of the rivers in Iran due to lack of environmental studies. However, there might have been some university research projects in this regard and the information obtained might help us learn something about periphytons as well.

B - Outdoor observations and investigations along the river

Periphytons are good for outdoor studies because they can often be seen in rivers of low depth as green, brownish green or brown layers in the bed of the river and can be removed with a pointed object.
As mentioned above, the excessive growth of periphytons and their accumulation along the river is a sign of contamination of that part of the river and from the environmental point of view it is a sign that the river is under pressure. It is well known that outdoor examination will not only lead to observational investigation and brief investigation but also will be used to justify further studies in the explanatory stage when no other information is available.

C - Sampling and laboratory examination

In addition to the lack of information and research data with regard to periphytons, in some rivers it might not be possible to observe periphytons because the meanders are too deep. In this case there is a need for sampling and laboratory examination. One time sampling from different parts of the meander is enough in such cases.

The quantitative and qualitative assessment of this type needs to be done following the guidelines for environmental assessment of the river engineering projects (explanatory stage) part (3-2-1-1-2 periphytons) number A-211. The qualitative study of periphytons includes the following: identification of algae, fungi and rotifers. Generally algae form the major type of species in the river. The quantitative study of periphytons shows the number of organisms in the unit of bed surface which is an indicator of contamination and the pressure on the river from the environmental point of view.

4-2-1-1-2 Macrophytons (macrophytes)

A through description of Macrophytons, their place in environmental studies and their quantitative and qualitative assessment is offered in guidelines for environmental assessment of the river engineering projects (explanatory stage) part (3-2-1-1-3 Macrophytons) number A-211.

Large macrophytons are especially important in this regard and fall into three categories of emergent vegetation, floating vegetation and submerged vegetation. These plants are seen along the river near the middle meanders.

Certain physical and chemical factors such as darkness and agro-chemicals have a large effect on the quantity and quality of macrophytons. Due to this characteristic of macrophytons, they are used as an indicator in any kind of short-term environmental studies including environmental assessment studies. The quantitative and qualitative investigation of macrophytons in assessment studies is explained in the following parts:

A – Qualitative assessment

This kind of assessment is based on observations from the area of the river engineering project or projects along the river current and it is fully explained in guidelines for environmental assessment of the river engineering projects (explanatory stage) in part (3-2-1-1-3-A qualitative sampling) number A-211. As mentioned before, macrophytes are divided into three categories of dense, moderate and scarce. The dense growth of macrophytes is an indication of the presence of stimulating elements in river water and justifies more research projects to be conducted. The number and types of macrophytes varies in different seasons. Therefore it is more helpful to do sampling in the season in which there is maximum growth. To know about the best season, one can do a brief investigation.

B – Quantitative assessment

The quantitative assessment of the macrophytes includes identification of the types, biological mass and growth rate. Such investigation is not possible in environmental assessment studies at identification stage since it needs examination at laboratory settings. Quantitative assessment of macrophytes in such studies provides the environmental assessment studies group with usable information. This investigation is explained in guidelines for environmental assessment of the river engineering projects (explanatory stage) in part (3-2-1-1-3-B quantitative sampling) number A-211.

4-2-1-2 Animal community of the river (fauna)

Investigating the animal community of the river is also part of the environmental assessment studies of the river engineering project or projects. This investigation includes identifying the types of communities, geographical distribution, the major species comprising them and the density of different types. The Quantitative and qualitative assessments of these communities are generally based on the present information and facts. In case there is not enough information, there needs to be a brief investigation.

The animal community of the river includes zooplanktons, macroinvertebrates and fish. Due to the limitations of the scope and range of environmental assessment studies and especially due to the time limit, we cannot examine zooplanktons and macroinvertebrates in these studies. Therefore the studies at this stage are limited only to fish. It should also be noted that most of the water species in the country are fish.
The quantitative and quantitative investigation of fish is explained below in order to guide the environmental assessment studies.

4-2-1-2-1 Fish
Fish belong to the community of nektons and are fully described in guidelines for environmental assessment of the river engineering projects part (3-2-1-2-3 fish) number A-211. in order to establish a link between the environmental condition of the river and features of the species, it I necessary to study these species, their distribution and growth rate. Such complete analysis of thee features requires information about the history of these species, especially information about their spawning, migrations, alterations in temperature and river current.
The quantitative and quantitative investigation of fish environmental assessment studies is possible through the following methods:

- Collecting information and research data
- Sampling and laboratory examination

A - Collecting information and research data
Due to the lack of research with regard to the biological features of the rivers in the country, biological research might include the features of nektons and fish. This kind of information may be the basis for a brief examination of fish in the site of the river engineering projects at identification stage. It might also be used as a justification for further studies at explanatory stage.
Making outdoor observations and inquiring the hunters may also provide us with more information in this regard.

B - Sampling and laboratory examination
Due to the importance of fish in food chain of the river, it is necessary to identify the main types of fish specially the following ones:

- Species valuable from the commercial point of view
- Species used solely for business and entertainment
- Species subject to extinction

If observations and information gatherings do not lead to identification of the above mentioned types, there will be a need for sampling and laboratory examination. This method is explained in guidelines for environmental assessment of the river engineering projects part (3-2-1-2-3 fish, parts A, B, and C) number A-211. It is well known that due to lack of time, one or two sampling would be enough at this stage. The timing of sampling should also be selected with regard to local information.

4-2-2 Ecology of the land
Some animals or plants might be affected by the application of the above-mentioned projects in the area of the river engineering projects. Therefore different kinds of plants and animals need to be identified at identification stage of the environmental assessment studies as follows:

- Studies of the ecology of the land should be done in areas near the river in which the animals are dependant on the river. Of course, other major species should not be overlooked.
- The effects of ecological factors on physical, chemical and hydraulic parameters should be identified.
- The scope of further studies at explanatory stage should be determined.
- The possible constraints on the application of the river engineering project or projects in the ecology of the land should be determined.
- The identified limitations with regard to the scope of the project or projects should be examined in order to decide about the need for further studies.

Certain environmental factors are involved in this part of identification studies which are explained below:

4-2-2-1 Plant community (flora)

The plant community near the area of the project or projects needs to be briefly investigated due to the erosion, floods, and river swamps near the place animals live, the effect of green lands and forests on the river, and finally the migration pattern of the animal species. The important factors in such investigation are explained below:

4-2-2-1-1 Farm lands

The scope of the farms lands and cultivation patterns, in the lands near the river should be determined. The effect of floods on the quality of soil and application of lands needs to be briefly assessed.

4-2-2-1-2 Lowland forests and highland forests

There is a need to determine the extent of the farm lands and the dominant species in the low and high lands of the forests. The risk of flood in the low lands should be specifically identified.

4-2-2-1-3 Trees, shrubs and herbaceous plants of the open lands

A brief investigation of the dominant types of trees, shrubs and herbaceous plants in the open lands with their percentage of distribution in the site of the project or projects should also be done.

4-2-2-1-4 Species subject to extinction

The types of plants near the site of the river engineering project or projects and those which are identified as subject to extinction by Iran environmental organization should be determined.

4-2-2-2 Animal community (fauna)

The animal community living near the river should be briefly investigated due to the effect of the river engineering project or projects, preserving the diversity of species, preserving the migration pattern, and protecting the species subject to extinction. The major factors in such a study are as follows:

- Herbivorous mammals
- Canorous mammals
- Amphibians
- Reptiles
- Upland game birds
- Predatory birds

The dominant species should be identified through studies and investigations in the site of the project or projects. The quantitative assessment of the abovementioned types is explained in the guidelines for environmental assessment of the river engineering projects (explanatory stage) part (3-2-2-2-1 to 3-2-2-2-6) standard number A-211.
It should be noted that the brief investigation in this part should be done with taking the considerations made in part “4-2-2, the ecology of the land” into account and the following points should be kept in mind:

- Preserving the diversity of animals
- Protecting the species subject to extinction
- Preserving the migration pattern of wild life
- Protecting the lands where animals live

4-3 Socio-economical environment

In environmental assessment studies of the river engineering project or projects, there should be a brief examination of the socio-economic situation of the site of the project or projects. The investigations should be done in areas covered by the project or projects. The factors which need to be investigated are explained in the following parts:

4-3-1 Site of the project

The site of the project is the area in which the socio-economic factors are directly influenced by the application of the project or projects and is divided into two parts of the area of the project and the site of the project.

4-3-1-1 Area of the project

The area of the project includes a certain radius from the possible site of the project or projects. The radius should be determined with regard to the characteristics of the project, its type and extent and also socio-economic factors. The area should be displayed on a map with a proper scale according to the specifications approved by the geographical institute of the country. All the major population centers, surface features, roads, topography condition and land areas should be displayed on the map.

4-3-1-2 Site of the project

Te site of the project includes the meander or meanders of the river in which the project or projects will most probably be conducted. The area of the site of the project depends on the type and extent of the project or projects. The possible site of the project or projects should be displayed on a map with a proper scale according to the specifications approved by the geographical institute of the country. The residential, industrial, and agricultural areas, roads, railways, gas, water and sewage pipes, power cables and telephone lines should be displayed on the map.

4-3-1-3 Time period of the project

The period of the project is the time needed to reach the operational stage of the project or projects. In other words, the period of the project and the age of the project are the same.

4-3-2 Usage of the lands

Land use types should be determined and displayed separately on the map of the project with the same scale. Collecting information for this purpose is possible through the geographical institute of the county, the Ministry of Agriculture, the ministry of Housing and Urban Development, Ministry of Industry and also local investigations.
The following points need to be taken into account to determine the land usage in the site of the project:

- Residential lands including population centers
- Agricultural lands including the major agricultural industries
- Forests and grasslands
- Industrial lands including industrial facilities
- The major commercial lands especially the buildings which belong to the army

4-3-3 Characteristics of the population

The population centers are briefly investigated to determine which part of the population will be affected by the execution of the project. The following points need to be taken into account:

- An estimation of the permanent and provisional population with regard to guidelines for environmental assessment of the river engineering projects (explanatory stage) part (3-3-3-1-1 and 3-3-3-1-2) standard number A-211
- Population distribution
- Approximate prediction of the population
- A brief study of immigration
- Population structure (aborigine, tribal, sectarian, minorities)

4-3-4 Socio-economic aspect of the region

The socio-economic aspect of the region needs to be briefly investigated.

- Settlement patters with regard to the percentage of urban population, the percentage of rural population, the value of residential lands, and the value of nonresidential lands
- educational status in the site of the project or projects and mentioning the approximate number of the primary schools, junior high schools and senior high schools
- The environmental characteristics including the percentage of people using the water distribution and swage system, the system of collecting and ejecting waste materials, industrial swage and air pollution in the site of the project
- Employment status including the percentage of employment in agricultural and industrial services, the percentage of unemployment in the site of the project

4-3-5 Cultural and political features

A brief investigation of the cultural and political status of the site of the project needs to be done and the following points need to be taken into account:

- the political situation of the site of the project with regard to the provincial divisions
- General literacy and public knowledge
- Sports facilities with regard to water sports, sailing and boating

- Cultural facilities such as libraries, theaters,, cinemas, and mosques
- Nongovernmental organizations such as charitable institutions, syndicates, and especial communities

4-3-6 Vulnerable regions

All the vulnerable regions in the site of the project or projects should be identified and displayed on a map with proper scale. These regions include the following:

- Natural preserved lands
- Historical preserved lands
- Cultural monuments

A through description of the abovementioned areas is offered in guidelines for environmental assessment of the river engineering projects (explanatory stage) part (6-3-3, vulnerable regions) standard number A-211.

4-3-7 Unexpected events

There needs to be a brief examination of the unexpected events which have had direct or indirect effects on the socio-economic situation of the site of the river engineering project or projects. These vents include floods, earthquakes, and storms.

4-3-8 public health and diseases related to water

There needs to be a brief investigation of the sanitary status pf the site of the river engineering project or projects at identification stage of the environmental assessment studies. This includes local diseases, preventions and dealing with the carriers of diseases in the site of the project. Guidelines for environmental assessment of the river engineering projects (explanatory stage) part (6-3-3, vulnerable regions) standard number A-211 offers suggestions, recommendations and information in this regard.

5- Prediction of environmental effects

River engineering project or projects include various activities at execution and exploitation stage. Due to the nature of such activities, physical, chemical, biological, and socio-economic factors might affect the site or the area of the project or projects. The environmental assessment studies of the river engineering project or projects require that these effects be predicted using the present information and the following guidelines:

- The project or projects should be studied and the activities that should be done identified. The type of materials, resources, manpower, and machineries required for executing the project or projects should be determined. The time and location where activities should be undertaken should also be determined. The comments made by the consulting engineers of the project or projects or the information offered in part 2 “characteristics of the project” in present standard will highly applicable at this stage of the project.
- Physical, chemical, biological, and socio-economic situation of the site of the project should be studied following the recommendations made in pat 4 “identifying the present situation” in present standard. As mentioned before, these studies are generally based on the present information and analysis of whatever data available and the environmental factors should be particularly taken into account.
- after determining the activities and identification of the environmental factors, the environmental effects on the site or area of the project should be predicted. At this stage it should be determined whether the information collected is enough or whether there is a need for further studies at explanatory stage in order to reach a more precise conclusion. The results of the identification of the environmental effects at this stage of the studies can be used for the following purposes:
- Determining the environmental constraints for further studies
- Deciding whether environmental studies should be followed at explanatory stage

It should be noted that most of the river engineering projects require that environmental studies be done and the methods of mitigating the environmental effects be identified at explanatory stage and these studies should not be rejected just because of the predicted environmental constraints.
The methods of identifying the environmental effects at identification stage are explained below:

5-1 Basic considerations

Some considerations and reflections should be made to determine the environmental effects of the river engineering project or projects. These considerations are as follows:

- Distinguishing particular plans and determining the environmental effects on the regional projects
- separating the environmental effects at application and exploitation stage
- Identification of environmental factors
- Qualitative and quantitative assessment of the environmental effects
- Positive or negative effects
- Direct and indirect effects
- Cumulative effects
- Inevitable effects
- Irrevocable and irreplaceable effects
- Total effects

Points that need special attention are clearly explained in guidelines for environmental assessment of the river engineering projects (explanatory stage) part 4-1 to 4-6, standard number A-211.

5-2 Sanitary consequences

Sanitary consequences need to be highly considered in environmental assessment studies of the river engineering project or projects. So the following sanitary effects need to be identified at the site or area of the project.

- Direct consequences on workforce
- Sanitary consequences on aboriginal peoples
- Consequences on health services of the region
  These effects are explained below.

5-2-1 Direct consequences on workforce

In case certain aboriginal diseases are known to be the characteristic of the locations or sites of the river engineering project or projects, care should be taken in employing workers required to carry out the projects and the methods of dealing with these diseases should be identified. This is especially important in eradicating some of the disease because in some cases sick people should not have contact with others.
As a result following disease should be briefly investigated in environmental assessment studies of the river engineering project or projects:

- Malaria
- Trachoma
- Schistosomiasis (organ malfunction)
- Distomatosis (disease of sheep and cattle)

5-2-2 Sanitary consequences on aboriginal peoples

A brief investigation of the direct sanitary effects of the application and exploitation of the river engineering project or projects on the people living near the site of the project is an important part of the environmental assessment studies. The following points need to be taken into account in these studies:

- Consequences of infectious disease
- Damage to health condition
- Outbreak of new diseases
- Return of diseases
- Spread of diseases
- Spread of the disease by those affected

These points are especially important in deciding about whether to continue the studies at explanatory stage.

5-2-3 Consequences on health services of the region

It is necessary to do a brief study of the pressure resulting from the application of the river engineering projects on the health condition of the site or area of the project at identification stage of the environmental assessment studies. The following points need to be taken into account:

- The need for health centers in the region

- The need for a protective, searching, and application program in the region
- providing facilities to overcome diseases

5-3 Urgencies and accidents

There is a need to do a brief investigation on the effects of the project or projects on natural incidents in any environmental assessment studies of the river engineering project or projects. These incidents generally include flood, earthquakes and storms. In addition, the abovementioned investigation should include the following:

- Intensity, duration, and continuity
- Probability

According to the studies in part 4 of the present standard, the effect of these events on the physical, chemical, biological and socio-economic environment needs to be identified and the effect of project or projects on these events should be determined.

5-4 Steps taken in the study of the environmental effects at identification stage

This part of studies explains the way to do the investigations mentioned I previous parts in order to reach satisfactory results. The studies should be done in the following order:

- A brief investigation of the present physical and chemical environment in the site of the project using the information gathered so far and based on the method explained in part 1-3 “physical and chemical environment” of the present standard with an emphasis on the parameters and indicators influenced by the application of the project
- A brief investigation of the biological environment using the information gathered so far and based on the method explained in part 4-2 “Overall identification of the ecologic indicators” of the present standard with an emphasis on the parameters and indicators influenced by the application of the project
- A brief investigation of the socio-economic environment using the information gathered so far and based on the method explained in part 4-3 “socio-economic environment” of the present standard with an emphasis on application of lands, unexpected events and public health
- A brief investigation of the characteristics of the project or projects using the information gathered so far and based on the method explained in part 2 “Investigating the characteristics of the project or projects” of the present standard.
- Determining the effects of the projects at application stage on the physical, chemical, biological and socio-economical environment
- Determining the total effects following the guidelines in part 5-1 “basic considerations” in the present standard
- Determining whether there is any direct, irrevocable or irreplaceable effect on the environment
- Making a list of the constraints of the environmental studies when there is no direct, irrevocable or irreplaceable effect on the environment
- Determining the scope of further studies at explanatory stage based on the findings of the identification studies with regard to various aspects of the environment

6- General recommendations of environmental management

This part of the environmental studies of the river engineering project or projects, offers general recommendations with regard to management of studies and other considerations in this regard. The recommendations are as follows:

- Public participation and nongovernmental agencies
- Determining the scope of the studies
- Selection of the site and scope of the studies
- The method of environmental management and assessment

6-1 Public participation and nongovernmental agencies

One of the important principles of the developmental plans is to take peoples' needs into account and applying their views and suggestions in different parts of the study. River engineering project or projects are not an exception and it is necessary to identify those who benefit from the project and those who ice a loss. It should be noted that nongovernmental institutions are actually part of people in the form of an organization. This investigation is very important to determine the scope f the studies and is possible through the following methods:

- A thorough investigation of all the information obtained in part 4-3, socio-economic environment in the present standard specially "sociology", "Socio-economic aspect of the region" and "cultural and political features"
- A brief investigation of the major groups involved in the project or projects concerning the information obtained and outdoor observations
- Identifying the pro-environment associations, charitable organizations, companies involved in water projects, and religious groups as part of the nongovernmental organizations in the site of the project using the information obtained or through public enquiry

This identification serves to predict the problems that might arise with regard to common people and plays an important role in deciding whether the studies should be followed in the explanatory stage.

6-2 Selection of the site and scope of the studies

As mentioned in part (4-3-1, site of the project) of the present standard, it is necessary to determine the scope of the environmental assessment studies. This should particularly determine those people who are affected by the river engineering projects. The information obtained from people is very important for the following purposes:

- Determining the exact scope and range of the environmental assessment studies
- Determining the scope of the studies with regard to people's needs and demands
- Making alterations in the studies and applying the changes arising from determining the scope of the studies

6-3 The method of environmental management and assessment

From the general point of view, environmental management forms part of the management system of the river engineering project or projects. The main responsibilities of the environmental management are as follows:

- Providing the services and facilities required to embark on the identification studies

- supervising the studies according to the national and regional environmental standards, regulations and guidelines
- Monitoring the duration and costs of the studies and applying changes where necessary
- Issuing the environmental assessment report at identification stage and helping the decision making body to decide whether the studies should be stopped or followed at explanatory stage
- Coordinating the project management

The process of management is explained in parts 8-3-1 to 8-3-4 of the Guidelines for environmental assessment of the river engineering projects (explanatory stage), standard number A-211. The aforementioned method of management can be used a guide for managing the studies at identification stage and the following points should be kept in mind:

- Identification studies are usually done based on the present information and outdoor investigations and it is necessary to take these points into account when designating the responsibilities of the research group and providing facilities.
- In most of the river engineering projects, it is possible to continue studies at explanatory stage. Therefore the processes and operations undertaken at identification stage can also be used in explanatory stage.
- The management at this stage should work in coordination with the overall management to prevent any delay in the application of the projects.

7- Preparing the environmental assessment report at identification stage

Comparing the environmental assessment reports of the river engineering project or projects in the last decades reveals a lot of differences and variations in the form and content of these kinds of reports. Lack of a consistent writing style, lack of a systematic description and explanation of the environmental features, sporadic and inconsistent use of the audiovisual resources, inconsistencies and lack of coherence in the reports, lack of standard referencing and many other similar problems, makes it necessary to prepare a set of instructions which could serve a guide for preparing the environmental assessment reports of the river engineering project or projects".

The environmental assessment reports of the river engineering project or projects are finally prepared to be used by employers. Since the report could have a major impact on the decision making process by the employers, it I necessary to take some considerations into account.

The environmental assessment reports of the river engineering project or projects are done in three stages of identification, explanation and description. The method of preparing the environmental assessment reports of the river engineering projects at identification stage is as follows:

7-1 The method of publishing the environmental report

The form of the environmental assessment reports of the river engineering project or projects including both the particular and regional projects should be based on the writing standards and common international styles of writing. These standards have been developed and used in developed countries for many years and can be best used to report achievements and the results of the studies. It should be noted that conducting environmental assessment studies in developing countries is very time-consuming and costly due to the lack of information and undesirable administrative structure. Therefore, special care should be taken in preparing the report because any kind of mistakes, confusions or irregularities will frustrate all the efforts.

The outline of the environmental assessment reports of the river engineering project or projects and the overall consideration in writing style are explained below.

7-1-1 Design of the report

The environmental report should be designed exactly based on the following method and under the following topics. Since each section might include different subsections, the designer of the report is free to choose the subsections. This report is initially prepared by the consulting engineers as a draft and the final report will be published after the required studies are done. In any case, the overall outline of the report will be the same. The different parts of the report are as follows:

7-1-1-1 Initial pages

The initial pages of the report shown by Abjad Alphabet (sometimes also called a consonantary) and are as follows:

- A page printed exactly similar to the cover page of the report on which "Islamic Republic of Iran" and "Ministry of Energy" or any other organizations involved in the design of the report are mentioned. The whole title of the report comes in the middle of the page and below it the following statement is mentioned: "The environmental assessment report at identification stage". Name of the consulting engineers or the name of all the people involved in preparing the report is mentioned at the bottom of the page followed by the date of the report.
  This page has no numbers of any kinds.

- The next page includes the letter of the report which explains why the report is prepared. The letter is signed by the developer of the report. This page has no numbers of any kinds too.
- Table of contents includes introduction, summery, different parts of the study according to the main topics, appendices and attachments, and finally the references. All the pages should be numbered with Abjad Alphabet (sometimes also called a consonantary).
- List of tables and diagrams includes all the tables and diagrams in the order they are presented in the report along with the topic and page number. The number of tables and diagrams is usually of the same order as the corresponding section because alterations in the tables and diagrams make it easy to change the numbers which are out in order. All the pages should be numbered with Abjad Alphabet (sometimes also called a consonantary).
- List of figures and pictures includes all the figures and pictures in the order they are presented in the report along with the topic and page number. The number of figures and pictures is usually of the same order as the corresponding section. All the pages should be numbered with Abjad Alphabet (sometimes also called a consonantary).
- List of maps in case any map is presented and it includes all the maps along with the topic and page numbers. Generally figures are used instead of maps. All the pages should be numbered with Abjad Alphabet (sometimes also called a consonantary).

7-1-1-2 Summery of the report

The summery of the report is a one or two page piece of writing which gives a brief account of the findings and overall results of the study which can be used by the decision making body or other authorities. This part should be brief, succinct and clear. This part forms the first pages of the main body of the report and is numbered as page 1.

7-1-1-3 Introduction

Introduction part includes a brief overview of the project, operational stages, purposes, definitions, the level of information and the overall method used.

7-1-1-4 Environmental laws and regulations

This part includes the laws, regulations and instructions related to the content and goals of this project which have been collected based on the part 1 of the present standard. This part shows the legal responsibilities in preparing the environmental assessment report. It should be noted that a thorough description of te laws and regulations should be attached to the report.

7-1-1-5 Characteristics of the project

This part explains the options explained in part 3 of the present standards.

7-1-1-6 Description of the environmental situation

The description of the physical, chemical, biological and socio-economical environment based on the methods explained in part 4 of the present standard is offered here. This part should jut deal with the important factors and confusing points should be avoided. It is

well known that in the regional projects the extent of the environmental investigations needs further studies.

7-1-1-7 Effects on the environment

At this part of the studies the guidelines and recommendations made in part 5 of the p[resent standard are used to determine the environmental effects of the project and provide a favorable ground for deciding whether the studies should be continued or stopped at this stage.

7-1-1-8 Overall assessment and results

At this part of the studies all the information and findings obtained at identification stage should be taken into account and clear results should be reached. The results should be conclusive so that the decision makers could easily decide whether to accept or eject the plan or continue the studies at explanatory stage. The overall results should be offered in the following sections:

7-1-1-8-1 The inevitable effects on the environment

The inevitable environmental effects should be predicted with regard to the effects on the physical environment and biological environment at operational and exploitation stage of the particular and regional projects.

A - Effects on physical environment

This part deals with the major inevitable effects on the physical environment. The effects should be determined with regard to the following areas:

- Soil
- Water
- Weather

B - Effects on biological environment

The major inevitable effects on the physical environment should be determined under the following topics.

- Inevitable effects on the ecology of the land
- Inevitable effects on the ecology of the water

7-1-1-8-2 The irrevocable and irreplaceable effects on resources

The resources influenced by the river engineering project or projects should be identified and the irrevocable and irreplaceable effects on resources should be determined. The assessment of the effects should be done under the following topics:

- Ecological resources
- Materials
- Climate
- Earth
- Social resources

7-1-1-9 List of sources

This list should include all the references used in the studies including the books, scientific journals, reports, research articles, bulletins, and exchange of views with experts through interviews, telephone conversions, correspondence or the internet.

7-1-1-10 Appendices

Appendices are presented in different parts according to their contents. The appendices include the following:

- Summary or the list of laws and regulations
- Figures and tables
- Mathematical models
- List of plant and animal species
- Tables showing the criteria for pollution
- List of the developers of the report

It should be noted that the attachments should include information which can be a basis for discussion and reaching conclusions in the main body of the report.

7-1-2 Particular considerations in planning the report

In order to raise the quality and flexibility of the environmental assessment report, the following twelve considerations and recommendations should always be kept in mind:

- The strange and unusual words should not be used since they may confuse the readers.
- The report should be succinct and clear.
- Proper figures and diagrams should be used and long paragraphs be avoided.
- Unclear and confusing words should never be used.
- Attempts should be made to use the precise operational methods at each stage.
- Absence of information should not usually be mentioned and the final analysis should be made on condition the information is obtained.
- The information obtained should be used both for rejecting and approving the plans and judgments should be made by the readers and authorities.
- there should be no quoting without mentioning the exact references and other people's contents should be used with permission.
- Attempts should be made to present the materials in a coherent manner so that all the parts of the report will be consistent.
- The style of writing should be the same in all parts of the report and technical suggestions should be made based on the facts as much as possible. Of course, it should be noted that different parts of the report might be prepared by different experts, so different styles in writing and reaching conclusions might be inevitable.
- Visual aids including maps, pictures, tables and diagrams should be used.
- The method of presenting the sources and references (such as: books, dissertations, articles, interviews with experts, etc) should be according to the standard patterns of technical texts.

7-2 Administrative work in planning the environmental assessment at reviewing and verification stage

Administrative work in planning the environmental reports are explained below in order to guide the consultants, employers, monitoring organizations, institutions involved in environmental issues and finally the authorities in charge of reviewing and approving river engineering project or projects. It should be noted that the contents of this part serves only as a guide and is presented here in order to guide, manage resources, and increase the efficiency of such plans and also as a criteria for reviewing and approving the projects. Since the procedures of investigation, preparation, review and verification of the environmental assessment reports of the river engineering project or projects includes all the stages in the report, these procedures and processes are explained in each of the following stages:

- Studies at identification stage
- Studies at explanatory stage
- Studies at descriptive stage
- preparing operational plan at descriptive stage
- Environmental stages

The main functions at each stage are presented both separately and as a whole. Therefore, each of the organizations, institutions, and consultants or other real or legal persons who embark on preparing an environmental assessment report for each of the river engineering project or projects should follow the stages in diagram (1) entitled “procedures of studying and preparing environmental assessment report of the river engineering projects” before, during and after the start of the studies and during operational stages.

In order to increase the chance of accomplishing these guidelines, the following points and considerations should be considered as the main assumptions in preparing and reviewing the reports:

Based on the responsibilities shared between the Ministry of Energy and other organizations involved at the present, the big water projects are organized by the Ministry of Energy and water organizations and the small water projects and plans (such as small dams, floodways, canals, etc) are organized by the Ministry of Agriculture because they are closely related to the agricultural development projects. In some rare cases the nongovernmental organizations and the private sector might also carry out such projects. In any case, the reports made by any of these organizations should be reviewed by experts in the environmental division of the Ministry of Energy to make sure they are in accordance with the standards made by this ministry. Therefore successful accomplishment of the mentioned objectives and application of the guidelines is dependant upon the reinforcement of the environmental division of the Ministry of Energy. The final authority responsible for reviewing, investigating and approving the reports and projects is the environmental assessment office of the environmental organization. Directing and undertaking the environmental assessment projects (studies and management) is the responsibility of the employer and it is usually done with reference to one of the consulting engineers.
The final report will be used by employers (the ministries or the subsidiary companies). To monitor the operations and to make sure the actual operation is the same as those predicted by the plans, choosing the final executer of the project is a very important part of the whole process.
Based on the assumptions made above, the procedures for assessing and reviewing the reports in various stages of the operations are as follows:

7-2-1 Identification stage

The employer or the organizer of the project should embark on doing the environmental assessment studies and preparing the assessment report at identification stage at the beginning of the project or after the first draft is offered by the organizations involved. These studies should be done by the environmental division of the organizations involved or the consulting engineers.
This report is presented by the employer (and after it is approve by the experts' committee), it will be sent to the environmental division of the Ministry of Energy for reviewing.
This organization should do required investigations by its experts and judge about the applicability of the plan within 15 days after the registration of the environmental report in assessment office (by the employer). The criteria for accepting the plan at this stage is the compatibility pf the report and its contents with the guidelines for the environmental assessment studies at identification stage. If the report does not comply with the present standards, it will be sent to the consulting organization. Otherwise it will be approved by the environmental division of the Ministry of Energy and finally will be sent to the environmental protection organization for making the final decision.
At this stage the report will be reviewed by the experts in the environmental assessment bureau of the environmental protection organization. The major criteria for reviewing the report are generally as follows:

- Conformity between the outline and contents of the report and the present standard and the amount of investigations made
- Clarity and precision in the investigations and lack of ambiguity in recommended suggestions and solutions
- The nature and consequences of the project on the environmental situation of the region
- Presence or absence of critical effects or irreversible consequences on the environment (decided by the experts)

- The amount of applicability and productivity of the costs and suggestions in order to mitigate the negative effects on the environment
- Using the quantitative data and avoiding total reliance on qualitative data

If there is not agreement between the outline and contents of the report and the present standards, the report will be sent to the employer or consultant for further revisions and alterations. In case the environmental assessment bureau of the environmental protection organization reaches to the conclusion that the project has critical and irreversible effects on the environment, or is otherwise not practical or not economical, the plan will be totally rejected and the studies will be stopped.
If the environmental assessment bureau of the environmental protection organization decides that the report is in accordance with the environmental considerations and there is no potential serious effect on the environment, the report will be approved by this bureau and there won't be any need for further environmental assessment studies at explanatory stage and the license will be issued.
If the report is complete in the outline and its content but the consulting organizers cannot decide about the suitability of the plan, or if the plan has consequences that require further investigations, environmental assessment bureau of the environmental protection organization will send the report to the employers or consultants for further studies at explanatory stage.

7-2-2 Explanatory stage

At this stage, the consultant or the employer starts the studies based on the guidelines for the environmental assessment of the river engineering project or projects at explanatory stage (the present standard) and will send the report to the environmental division of the Ministry of Energy for initial review and analysis.
This organization should do required investigations by its experts and judge about the applicability of the plan within 20 days after the environmental report is registered in assessment office. The criterion for reviewing at this stage is the compatibility of the report and its contents with the guidelines for the environmental assessment studies at explanatory stage (present instructions). If the report does not comply with the present standards, it will be sent to the consulting organization. In this case it will be approved by the environmental division of the Ministry of Energy and finally will be sent to the environmental protection organization for making the final decision.
The explanatory report will be reviewed by the experts in the environmental assessment bureau of the environmental protection organization to assess whether it is in compliance with the present standards or not. The major criteria for reviewing the report are generally as follows:

- Conformity between the outline and contents of the report and the present standard and the amount of investigations made
- Clarity and precision in the investigations and lack of ambiguity in recommended suggestions and solutions
- The degree of precision in categorizing, analyzing the different parts of the plan from the environmental point of view
- The amount of public participation and assessing the suggestions made by the people or communities who benefit or incur a loss by the project
- The amount of applicability of the project or projects concerning suggestions made in order to mitigate the negative effects on the environment
- Offering guidelines and recommendation for mitigating the environmental effects
- Using the quantitative data and avoiding total reliance on qualitative data

- The precise assessment of the presence or absence of critical effects or irreversible consequences on the environment
- Overall recognition of the nature of the effects on the environment in its broadest view

Environmental assessment bureau of the environmental protection organization should inform the employer about its decision 30 days after it receives the report
If the changes are applied but there is no justification for the project or projects from the environmental point of view, the report will be rejected by the environmental protection organization and the studies will be halted at any stage. Otherwise the plan or the project will be accepted from the environmental point of view and the environmental license will be issued.

7-2-3 Descriptive stage

After the explanatory report is approved and environmental protection organization will inform the employer or the consultant of the project to continue studies according to the instructions for descriptive stage and the results will be sent to environmental division of the Ministry of Energy for further investigations.
The report will be reviewed within 20 days and if incompatibilities are found, the result will be sent to the employer or the consultant for further review. Otherwise the report will be approved by the Ministry of Energy and will be sent to the environmental protection organization for further investigations.
After the descriptive report is registered in the environmental assessment bureau of the environmental protection organization, it will be reviewed by the experts and its compliance with the present standards and criteria will be assessed. The main criteria used in reviewing the report are as follows:

- Application of the correct rules and regulation in descriptive report concerning the environmental issues
- Determining the general and technical specifications concerning the environmental effects
- Efficient executive methods to mitigate the environmental effects
- a complete program for dealing with environmental effects
- Offering guidelines and recommendation for mitigating the environmental effects

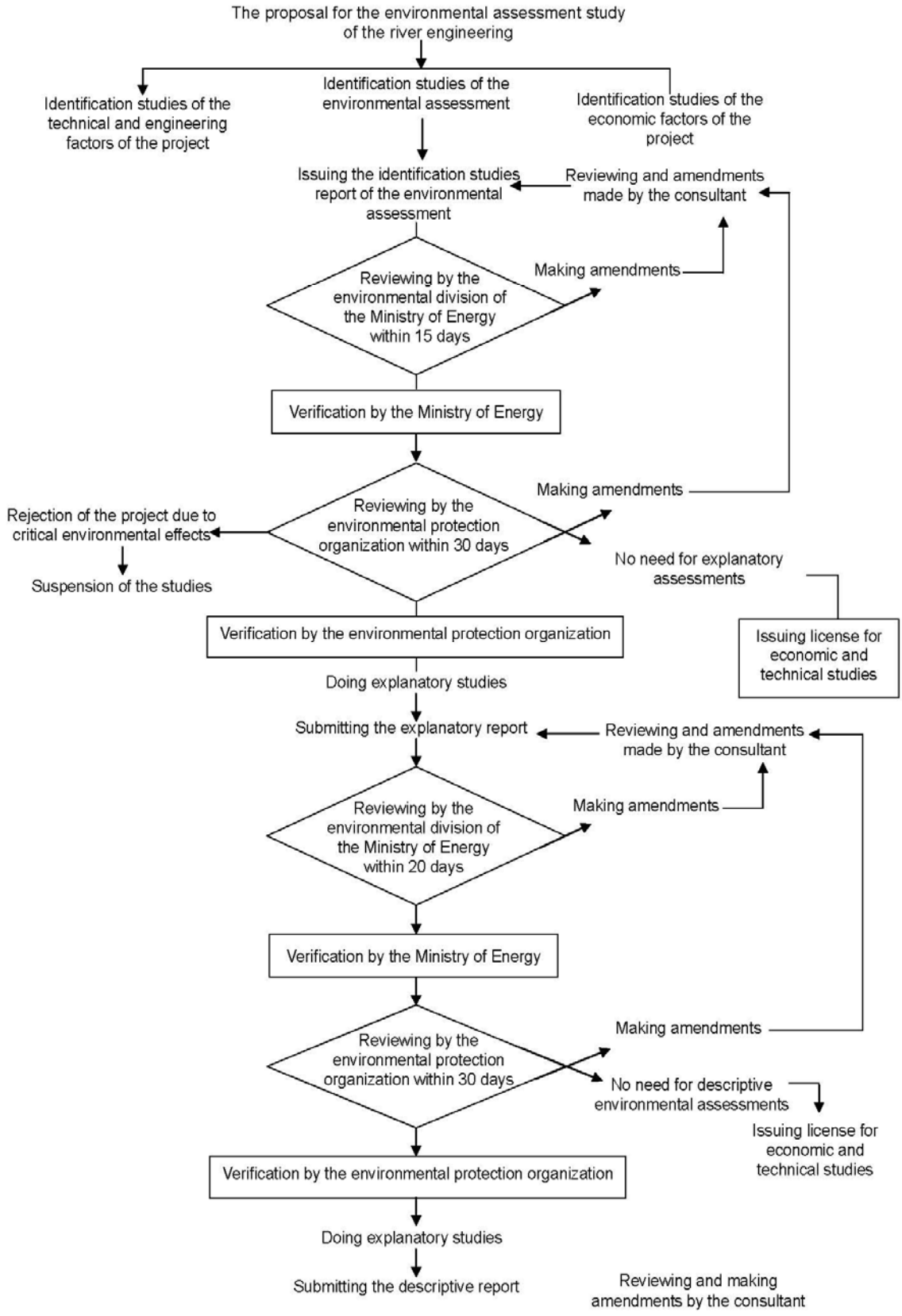
The management programs and environmental instructions, and public participation according to the present instructions
The environmental assessment bureau of the environmental protection organization should inform the employer about its final decision within 30 days.
After the final confirmation of the report at descriptive stage of the project or projects by the environmental assessment bureau of the environmental protection organization and making possible investigations by the consulting developers of the project, the environmental license will be issued and the project can be followed at operational stages.
At operational stages of the project the employer is able to prepare the documents and hire the contractors.
To ensure the employer acts in accordance with the legal commitments and follows the environmental recommendations at different stages of the project, the employer submits a written commitment to the environmental protection organization. This might be in the form of an official document (legal) in which the penalties for refusing to fulfill the obligations are mentioned.
The environmental protection organization should embark on issuing the licenses needed to launch the operational stage of the environmental projects.
After the operational stage of the project is initialized, in addition to monitoring the engineering and technical activities of the employer by the Ministry of Energy, the

assessment and monitoring group of the environmental protection organization will also monitor the environmental measures mentioned in the part of environmental management of the descriptive report and will make amendments when necessary. The employer or the contractor should accept the suggestion made by the assessment group and make amendments and alterations in the time periods set by the environmental protection organization.
After the operational stages complete and the project is finished by the contractor, the employer should prepare the final report of the project. This report shows the degree of compatibility and agreement between the environmental measures taken by the contractor and the predictions made in the initial report.

7-2-4 Exploitation stage

At the same time the exploitation stage begins, the environmental operations are also carried out based on principles of management and with regard to the descriptive report. Other environmental effects not mentioned in the assessment reports might also be identified at this stage. Individual reports should be prepared for these kinds of effects in which the solutions to the problems are mentioned. This is done by the employer or those in charge of the management of the project.
The examinations and investigations by the monitoring and auditing group of the environmental assessment bureau of the environmental protection organization will be continued unless the monitoring group decides that such investigations are no longer required.
Finally the organization officially declares that the project is fully in compliance with the environmental conditions of the region and has no major effect on the environmental factors and the final report will be sent to the environmental division of the Ministry of Energy for final making final decisions.
If the employer or the contractor or the management fails to observe the environmental considerations after the investigations are ended and the damaging effects are seen in the environment or identified by the monitoring group of the environmental assessment bureau of the environmental protection organization, the organization in charge of the project will be obliged to repair the damages according to the environmental regulations.

Diagram 1 – the procedures and stages in preparation of the environmental assessment reports of the river engineering projects



添付資料 4-3　環境庁　SEA ガイドライン

United Nations Department of the Environment Development Programme

Department of the Environment

GOVERNMENT OF THE ISLAMIC REPUBLIC OF IRAN
UNITED NATIONS DEVELOPMENT PROGRAMME

SUSTAINABLE DEVELOPMENT STERATEGY AND STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA):
ENABLING ACTIVITIES AND CAPACITY BUILDING

Brief description:

To build on the achievements of a joint Government and UNDP project that established environmental impact assessment (EIA) guidelines and procedures for Iran (Environmental Impact Assessment Enabling Activities and Capacity Building, IRA/97/017), UNDP was formally requested by DoE to assist in devising a similar system to systematically employ the Strategic Environmental Assessment (SEA) as a means to assess the environmental consequences of *policies, plans and programmes* (PPPs). Both DoE and MPO raised this request during the Tripartite Review meeting held early 2002 to review the outcomes of the EIA project. The request met the concurrence of the Ministry of Foreign Affairs with the provision that any such system should take into consideration the interactions between environmental, social and economic issues.

The need for SEA stems from the fact that while the already established EIA system provides for addressing the environmental (and social) aspects of individual projects, it is not ideally suited for addressing development policy choices at the macro-economic, sector of area-wide level. SEA, as an internationally accepted approach, is introduced to address these limitations. Based on the experience gained in other countries, such an approach is believed to enhance the environmental sustainability of development policies and programmes in line with the Millennium Development Goals (MDGs) and the plan of implementation set forth by the World Summit on Sustainable Development (WSSD). Project outputs should contribute to and promote the ongoing Government activities regarding the Sustainable Development Strategy. Likewise, this project will possibly contribute to the Multi- provincial Area- based Development activities being negotiated between UNDP and the Government of the Islamic Republic of Iran.

CONTEXT

A1. Background

Iran is a vast country with diverse climatic and environmental conditions, hence a habitat for a rich diversity of terrestrial and marine species. Many Iranian ecosystems are found to be of international importance and declared as biosphere reserves. Tremendous potential exists in Iran for eco-tourism because of the diversity and, in many cases, uniqueness of its ecosystems. However, during the past decades, great pressure has been put on environmental resources due to unsustainable development patterns.

In spite of the continued efforts being made by various actors, Iran is facing serious environmental challenges like air pollution in urban areas, the pollution of scarce water resources, degradation of natural vegetation, soil erosion and the loss of animal biodiversity. Recurrent droughts and devastating flash floods occurred in the past decade are believed to have partly been triggered or exacerbated by the poor management of environmental resources.

Three subsequent Five-year Development Plans called for the employment of environmentally friendly approaches when implementing development programmes. The need for incorporation of environmental concerns into policies, plans and programmes (PPPs) is increasingly spelled out by government, non-governmental entities and the public. The recent boom in the number and activities of environmental NGOs is a clear evidence of the above need.

To build on the achievements of a joint Government and UNDP project that established environmental impact assessment (EIA) guidelines and procedures (Environmental Impact Assessment Enabling Activities and Capacity Building, IRA/97/017), UNDP was formally requested by the Government of the Islamic Republic of Iran to provide assistance in putting in place similar instruments for Strategic Environmental Assessment (SEA). This request was put forward both by the Department of Environment (DoE) and the Management and Planning Organization (MPO) during the Tripartite Review meeting held in 2002 to review the outcomes of the EIA project.

The need for SEA stems from the fact that while the EIA may ensure, to some extent, the environmental friendliness of activities at the level of individual projects, a more holistic approach is required to take into consideration the environmental opportunities and limitations of PPPs. Based on the experience gained in other countries, such an approach is believed to enhance the environmental sustainability of development policies and programmes before they are translated into sector or area-wide programmes.

In the global context, the Strategic Environmental Assessment (SEA) has become an increasingly adopted management tool to incorporate environmental concerns in PPPs. SEA aims to ensure that environmental issues are addressed at an early stage in the process of PPPs formulation.

Furthermore, while EIA aims at the impacts of a development project on the surrounding environment, SEA, in some instances, has been used to assess the limitations that environmental conditions impose on development programmes and plans. In this respect, SEA process could be seen as complementary to the existing EIA system.

The launch of the Millennium Goals (MDGs) in 2000, reinforced through subsequent confirmation of their relevance by the World Summit on Sustainable Development (WSSD), has put the work towards their fulfillment on the agenda for governments and international organizations. Having this in mind, the present project will need to become part and parcel of a larger programming strategy towards achieving the MDGs. The project will contribute to and strengthen the ongoing efforts to develop the *national sustainable development strategy*. As required by the WSSD Plan of Implementation, countries need to have these strategies engineered by 2005. While focusing on the technical and legislative aspects of SEA, the project will also become linked to the work of the National Committee on Sustainable Development (NCSD) and provides for further strengthening of NCSD. This will ensure the integration of environmental, social and economic aspects of development. As such the project has a strong linkage with other initiatives related to the MDGs. This project should be seen as part of a broad scheme of assistance vis-à-vis sustainable development. More specifically, this project in conjunction with another pipeline intervention titled" Mainstreaming Environmental Concerns in Economic Decision Making", provides the technical and legal capacity for improving the environmental aspects of development decisions.

A2. Problems to be addressed

This UNDP intervention is envisaged to address, to the extent it could, the lack of full integration of environmental concerns into policymaking and planning practices in line of the MDGs as the overarching development goals and targets. Once concluded, the project will contribute to ensuring the consideration of environmental concerns in decision-making and planning processes in such a way that the nexuses between environment and poverty are addressed.

A3. Previous Experiences

There is little experience and knowledge about SEA within the country. No actual SEA has so far been carried out in Iran, nor its application has become a legal obligation. However, strong desire exists within the national environmental and planning arena to start practicing SEA.

In a broader context, UNDP's cooperation with the Government on EIA is deemed a successful precedent to the present proposal. As spelled out by the Deputy Head of the Department of Environment in his meeting of 07 May 2003 with UNDP and MPO, the joint UNDP and Government initiative on EIA has culminated in more widespread knowledge on EIA among relevant groups, systematic management of EIA-related data and information, clear guidelines on how to carry out EIAs, and significant compliance with EIA rules and regulations by project proponents.

A4. Development Objective

The overall objective of this project is to contribute to incorporate environmental concerns into policies, plans and programmes (PPPs) for the benefit of the poor.

The project is therefore related to the following UNDP Goal, Sub-goal and Strategic Area of Support:
GOAL: Environment
SUB-GOAL: Sustainable environmental management and energy development to improve the livelihoods and security of the poor
STRATEGIC AREA OF SUPPORT: National policy, legal and regulatory framework for environmentally sustainable development
INTENDED OUTCOME: A comprehensive approach to environmentally sustainable development integrated in national development planning and linked to poverty reduction

A5. Regulatory Framework

Article 50 of the Constitution of the Islamic Republic of Iran states: " It shall be considered a public duty in the Islamic Republic to protect the natural environment in which the present as well as future generations shall have a developing social life. Therefore, economic activities or otherwise which cause pollution or an irreversible damage to environment shall be prohibited."

As approved by the Environment High Council, major development projects are obliged to prepare EIA reports at the very stage of planning before any physical activities are commenced. These development projects include: petrochemical plants, refineries, power plants, steel mills, large dams and irrigation networks, industrial estates, airports, highways, railroads, large industrial slaughterhouses, oil and gas pipelines, reforestation plans, municipal solid waste landfills, composting plants, agro-industrial complexes, ecotourism plans, tailing dams, etc.

Clause 82 of the Law of Second Five-year Development Plan (1994-1998) puts obligation on all major development projects to conduct EIAs parallel with the feasibility studies. Likewise, the Clause 105 of the Law of the Third Five-year Development Plan (1999-2003) calls for assessing the environmental consequences of large scale production and/or service plans and programmes and preparing environmental assessment repots at the stage of site selection, in compliance with the rules and regulations to be set forth by the Environment High Council. The Clause states that it shall be required for the individuals in charge of implementing such projects to fully observe and comply with the final outcomes and provisions of such environmental evaluations. The responsibility of supervision and control over appropriate implementation of this Clause rests with MPO.

Under the Office of the President, the Department of Environment is held responsible for the protection of the national environment. The Vice President of the I.R. of Iran and Head of DoE acts as the Secretary of the Environment High Council and also chairs the National Committee for Sustainable Development; the latter being a national forum for governmental departments and NGOs.

Environmental rules and regulations are either passed through the Parliament as national laws or enacted by the Cabinet of Ministers or the Environment High Council in form of legally binding decrees when a framework law already exists to support such a decree.

In the Department of Environment, The Director General for the Environmental Impacts Assessment under the Deputy Head of the Department for Human Environment Affairs is responsible for receiving and reviewing EIA reports. It is anticipated that the same Deputy would handle SEA system as well.

B. STRATEGY FOR USE OF UNDP RESOURCES

B1. Relevance to UNDP Mandate

The UNDP corporate mandate puts focus on some "Practice Areas" including, *inter alia*, "Energy and Environment". In pursuit of achieving its overarching goal to alleviate poverty and materialize sustainable development, UNDP attaches great importance to safeguarding environment and environmental resources for the benefit of the poor. It also undertakes for provision of policy advice to decision-making systems. As such, the mainstreaming of environmental considerations in national decision-making processes is highly relevant to UNDP's mandate and mission.

Paragraph 40 of the Second Country Cooperation Framework of UNDP in the Islamic Republic of Iran (2000-2004) calls for cooperation in the field of environment to expand institutional capacity for better development planning and enhanced economic efficiency for more sustainable economic growth as well as better efficiency and sustainability in the utilization and conservation of resource bases.

B2. Relevance to international Treaties, Decisions and Declarations

Environmental issues have long been in the forefront of international cooperation agendas. Several global environmental treaties call for national regulatory frameworks that ensure the incorporation of environmental concerns into decision-making processes.

In 1992, the Earth Summit Held in Brazil adopted Agenda 21 as the international plan of action to achieve sustainable development. The Millennium Development Goals (MDGs) adopted in 2000, set forth some measurable targets to be met at the global level by 2015. The goal 7 of MDGs and its corresponding targets concern environmental issues. Taking account of environmental issues at the PPP level is deemed a prerequisite for achieving the MDGs.

More recently, the World Summit on Sustainable Development (WSSD), held in Johannesburg in mid 2002, reinforced the need for bringing environmental consciousness to the forefront of decision and policy making processes.

B3. Aspects of the Problem to be addressed through UNDP Intervention

This UNDP intervention will focus on the following:

- Capacity building through provision of financial and technical support as well as facilitating access by stakeholders to knowledge and experience on SEA for regulation setting and training purposes;
- Helping creation of a national regulatory framework for practicing SEAs;
- Creating an enabling environment to put in place clearly defined, participatory processes for conducting SEAs;

- Building technical capacity within government, private sector and non-governmental players to conduct SEA studies and review SEA reports;
- Creating enabling environment for cooperation among different parties within and outside of the Government towards achieving MDGs and ensuring sustainable development.

B4. How UNDP Resources Assist Achieving the Solution to the Problem

The allocated UNDP resources, in conjunction with the cost-sharing contribution by the government counterpart, will be utilized on the provision of international and national consultancy services needed to produce intended outputs, as well as the creation of an administrative structure to facilitate and monitor the activities. It is anticipated that through successful implementation of this project, will be in place a legally-binding SEA system encompassing legal procedures as well as technical guidelines. As designed, the project provides also for increased knowledge and capacity both within and outside of the Government system on how to carry out SEAs.

B5. Outcomes of the Capacity Assessment

DoE is responsible for the activities related to the protection of the environment in Iran. It is directly affiliated to the Office of the President of the Islamic Republic of Iran; the Head of DoE being a Vice President. The Head is also a full-fledged member of the Cabinet.

As shown in Figure 1, two Deputy Heads of DoE are responsible for natural and human environment issues, respectively. The responsibility for supervising the environmental impact assessments fall within the mandate of the Deputy Head for the Human Environment who is assisted by four Bureaus each headed by a Director General and staffed by professional and support personnel. Moreover, the project office that was created under a previous UNDP intervention (EIA Enabling Activities, IRA/97/017) has still been kept operational by DoE and will be dedicated to SEA project once the latter project starts implementation.

The DoE has been a major recipient of UNDP assistance during the past decade. These projects cover a variety of domains including ozone protection and climate change, biodiversity, environmental policy systems, etc.

The following table summarizes the capacity of DoE to implement the present intervention:

Table 1. Summary of capacity assessment within DoE

Capacity item	Fully exists	Partially exists, to be strengthened	Does not exist at all
Legal mandate	**X**		
Administrative structure		**X**	
Past experience on UNDP NEX	**X**		
Participatory mechanisms		**X**	
Office space	**X**		
Utilities	**X**		
Communication base		**X**	
Equipment		**X**	
Professional staff		**X**	
Support staff		**X**	

Figure 1. Organizational Chart of DoE