
Urmia lake July 2011

1st International Conference for Urmia Lake Rescue

22 Nov. 2013 – Berlin - Germany

Ecosystem Approach as a Main Strategy for Urmia Lake Rescue

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Content:

- Introduction
- Site Description
- The main problem
- Root Causes
- Present Situation
- Ecosystem Approach as a national strategy for integrated managing of Urmia lake basin
- Conservation of Iranian Wetlands Project(CIWP)
- The way forward and needs

Introduction: Iran high plateau which has covered more than 80% of the country has created a scope of mountain, mountain foot, moor, and desert landscapes and this feature has caused it to possess micro-habitats, although it is located in the dry and semi-dry ring (25º – 40º N) of world climate.

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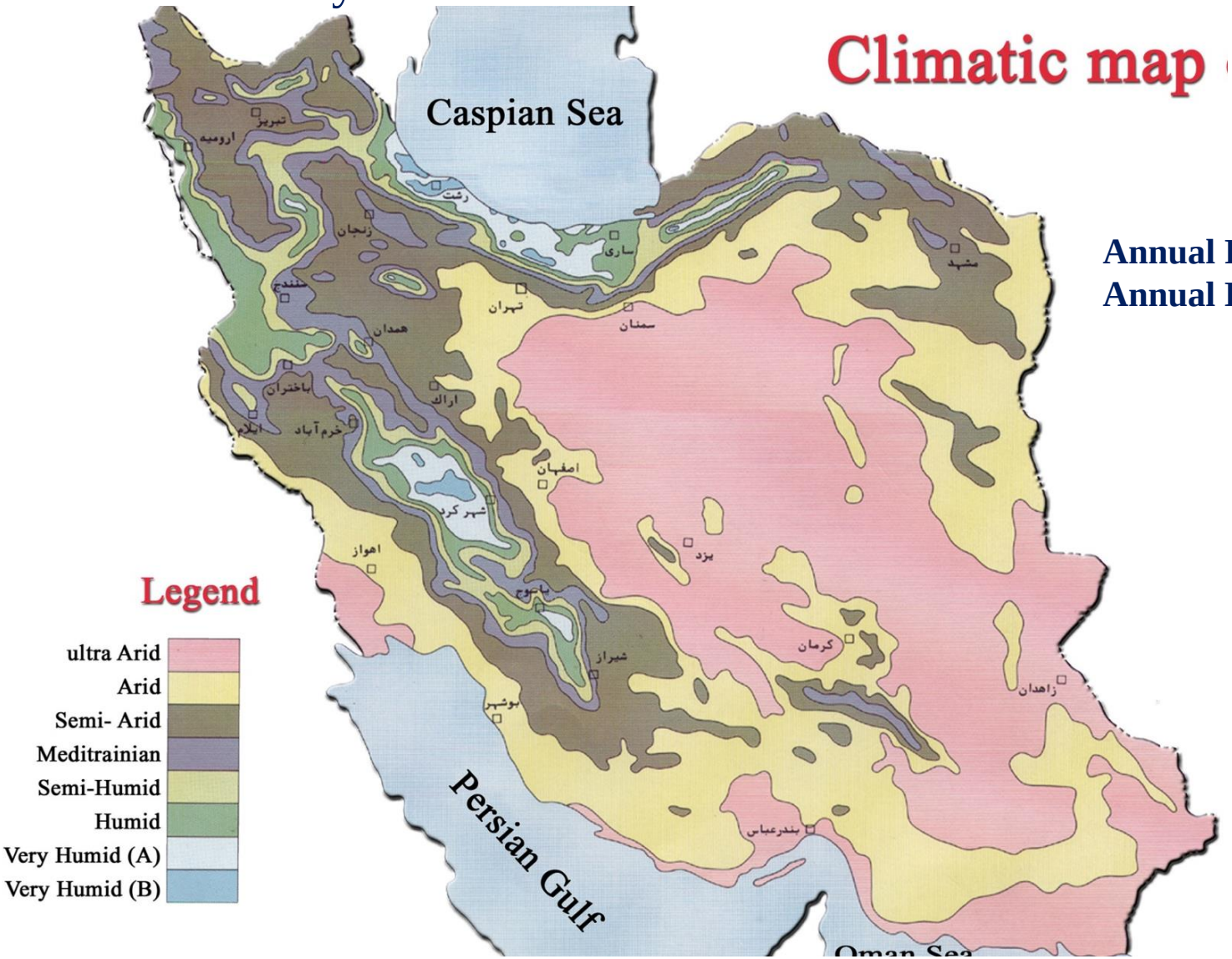
Introduction (continue)

different climatic regions from very cold to extremely hot and from very dry to very wet can be found in IRAN.

2/3 of the country: Arid and Ultra-arid climate



Annual Precipitation: 243mm
Annual Evaporation: 1200mm

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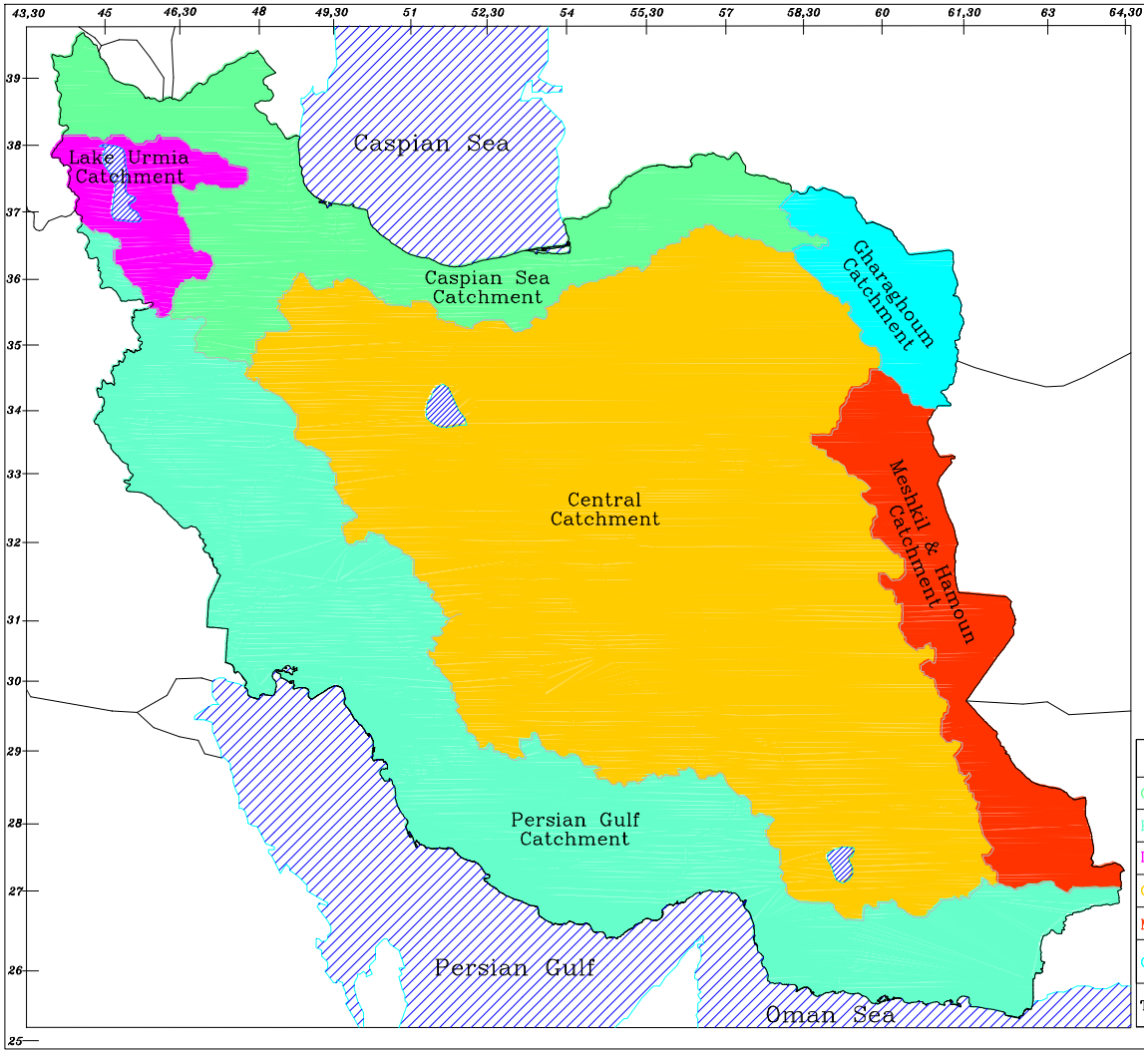
Site Description:

IRAN: 6 main hydrological Basins;

The Urmia lake basin in NW of IRAN



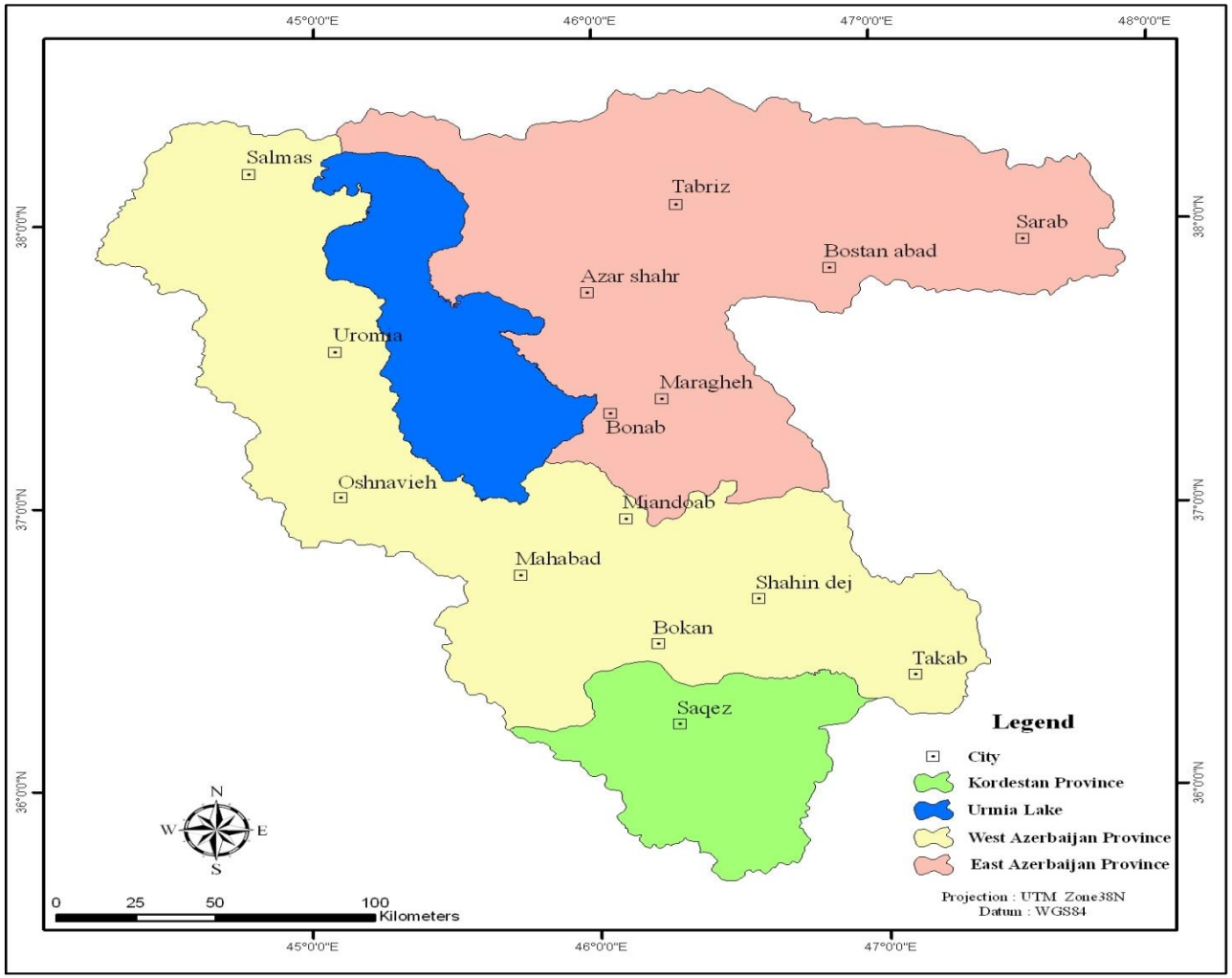
Site Description (continue):

Urmia Lake basin area: 51,876 km^2,

51% in west Azarbaijan province,

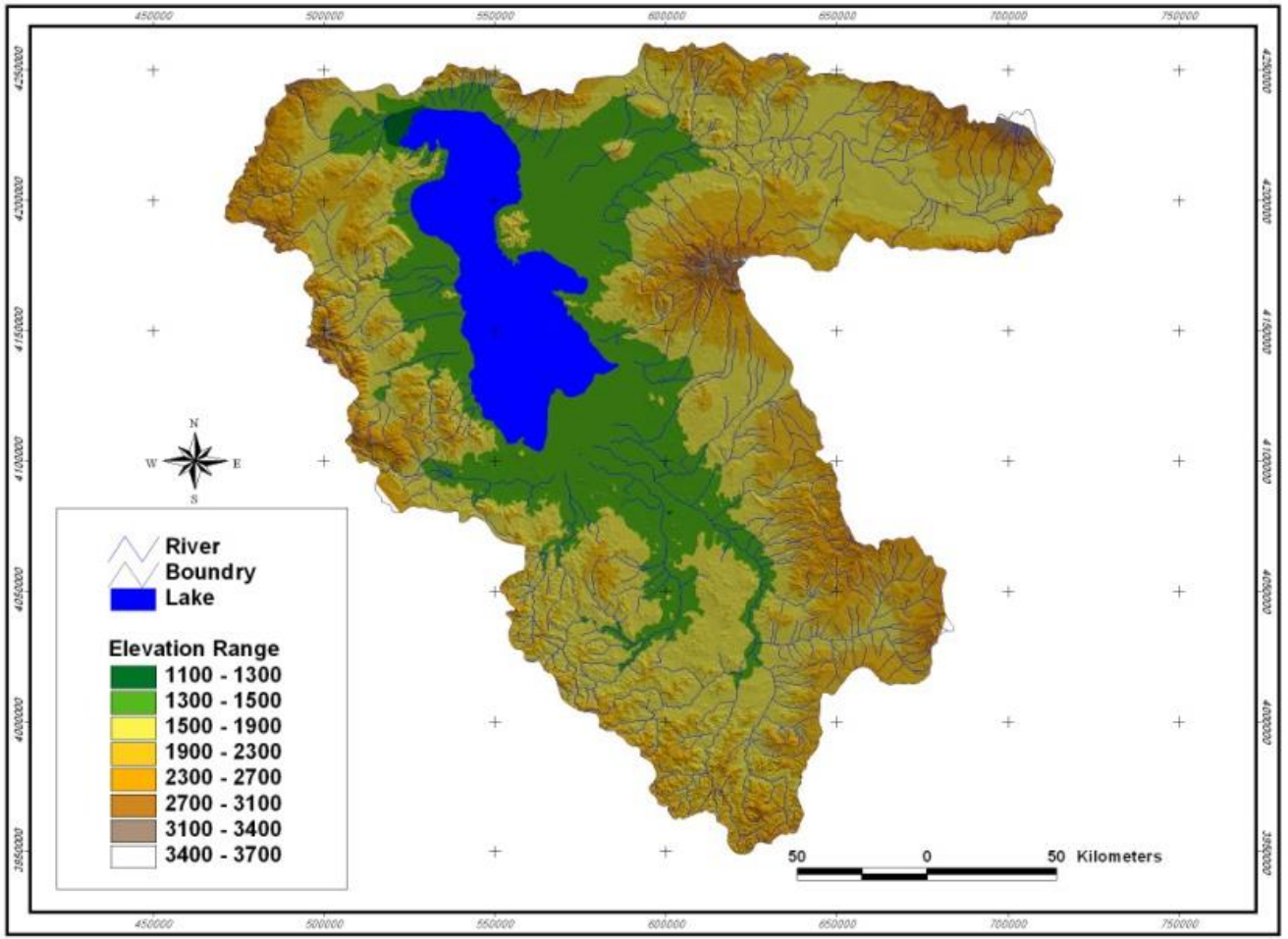
39% in east Azarbaijan province,

10% in Kurdistan province.



Site Description (continue):

The basin is a closed, internal drainage basin, where all surface and groundwater drains towards a central lake (Urmia Lake); here, high evaporation and inputs of saline water lead to hyper-saline conditions . Lake Urmia is located at an altitude of 1276 m above sea level.



Site Description (continue):

- The Lake covers 5000 km^2 with a maximum extent of 130 km×40 km,
- The water is shallow (In maximum level average depth 5.4 meters), and hyper-saline
- Water levels and salinity fluctuate seasonally and between years, depending on water inflows and evaporation

The Lake's water requirement specification:

- Ecological water Level: 1274.1 masl
- Minimum inflow into the Lake is: 3086 MCM
- Ecological surface area: 4652.2 Km^2
- Salt concentration: 240 g/l.

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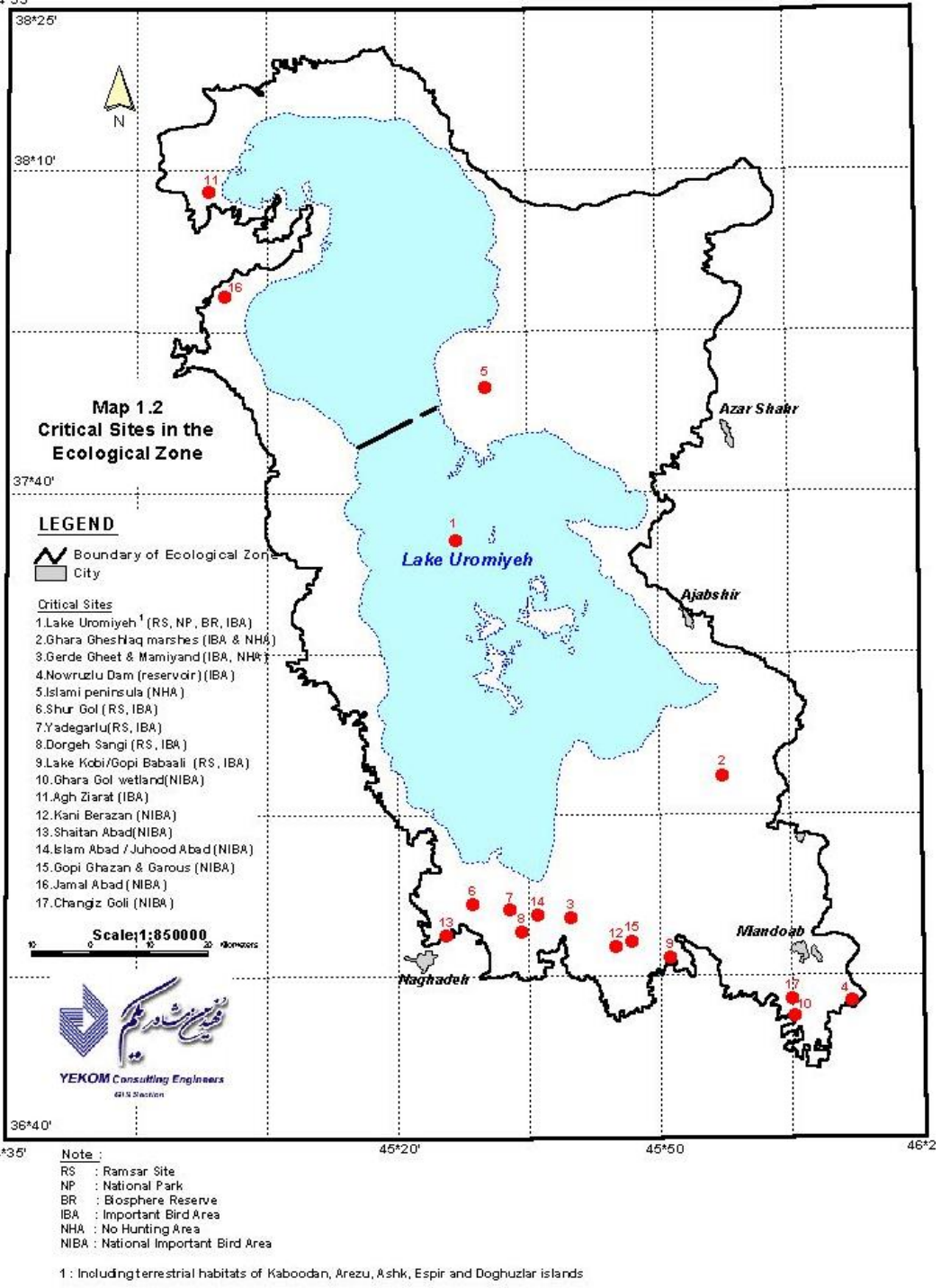


Site Description (continue):

Ecological Values of Urmia Lake

- National Park.
- UNESCO - Biosphere Reserve.
- 5 Ramsar Sites in the basin, include Urmia lake and some of satellite wetlands.
- 9 globally important bird area into Urmia lake and satellite wetlands.
- **Golden triangle**

Site Description (continue):

Urmia lake ecological values

Cultural, Socio-economic situation

- Different languages (Azerian Turkish, Kurdish), different religions (Muslim Shia, Muslim Sunni, Christian, Zoroastrian)

- There are more than 36 cities and 3150 villages with near to 6 million inhabitants in the lake Urmia basin (2010).

- While industrial activities have rapidly increased during the last decades, agriculture and animal husbandry are still the dominant occupation within the basin.

The main problem:

Since the early 2000s , the Urmia lake basin (and needed much of IRAN) has been subject to an intense and persistence drought. As a result, the lake water level continuously receded and reached levels below 1270 in 2012 which is lowest ever recorded since the start of observation in 1966. evidently this drought has been exacerbated by increasing ground water abstraction by water wells as well as control of river flows by storage dams. Also long-term drought-ness maybe responsible for part of the situation

Root Causes:

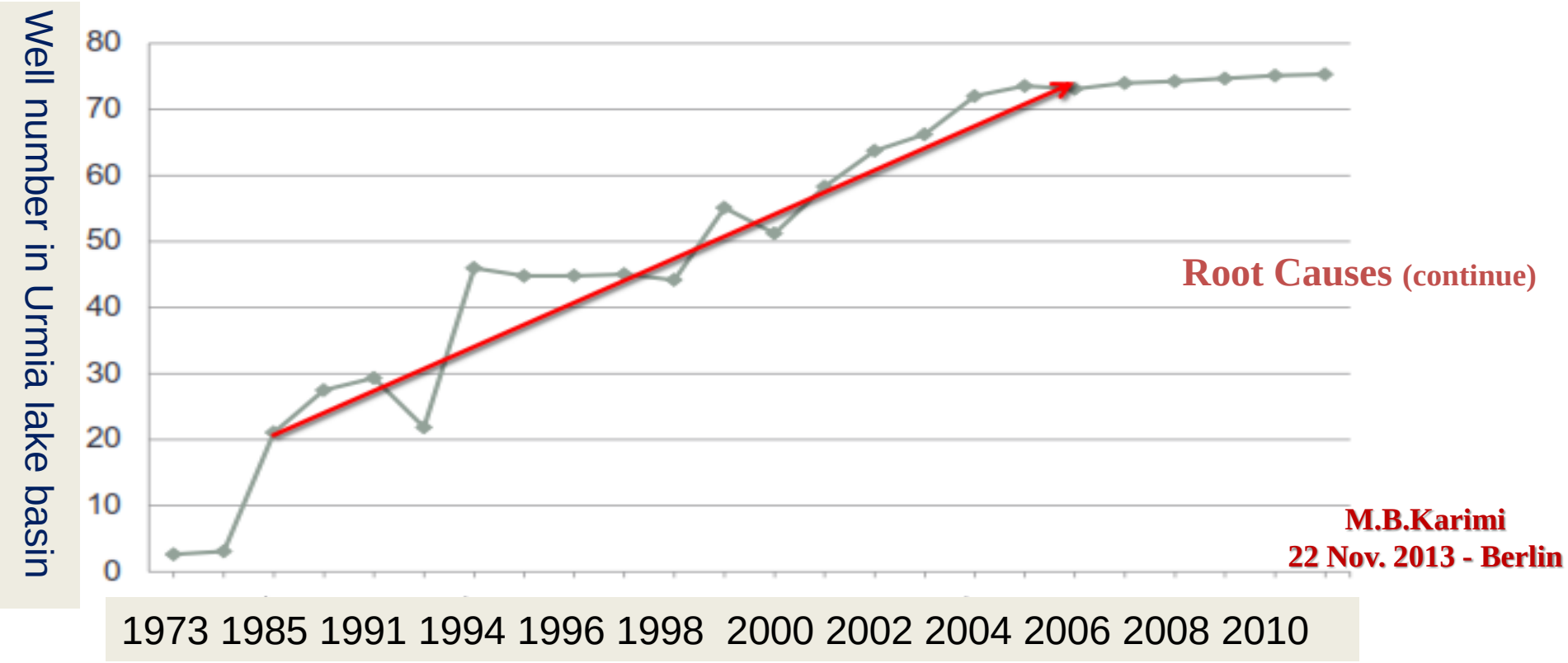
1. Lack of regional development strategy according to ecosystem approach and socio-economic conditions;

- Development programs and projects based on Sectoral planning and with poor EIA or SEA studies;
- Lack of attention to Virtual, blue and green water balance, and water economy in the basin;
- Converting range lands to rain-fed and rain-fed to irrigated lands;
- Development of high consumption Products like: Sugar beet, Sunflower (nut) and etc.

2- scientific, technical and managerial weakness, specially on water management in agriculture sector:

- Water efficiency in irrigated lands: 30% (long term mean)
- Less than 0.8 kg agriculture product / 1m³ water use

3. Weak enforcement to controlling the illegal water removal from surface and ground waters. Now there are more than 30000 illegal well in Urmia lake basin (estimated).



Root Causes (continue)

4. Lack of any plan or Legal obligation to determination and allocating water needs to the aquatic ecosystems (rivers and wetlands)

5. Construction a highway true the Urmia lake, The Kalantary Highway is a large causeway, which crosses Lake Urmia, bisecting the Lake into northern and southern parts

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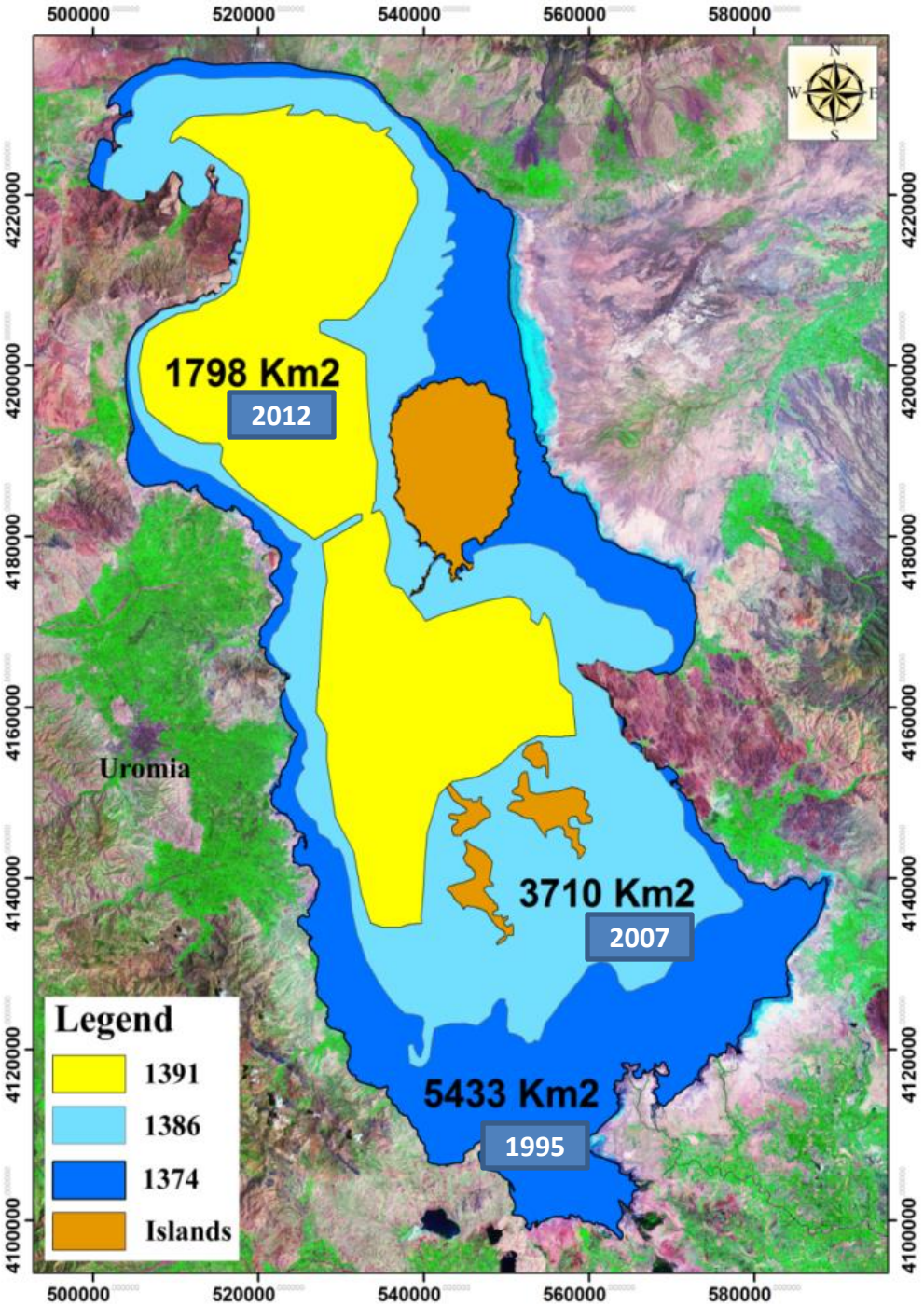
Root Causes (continue)

Kalantary Highway
Above: view from the east, June 2002
Below: apart of highway , July 2006

Present Situation



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Present Situation (continue)

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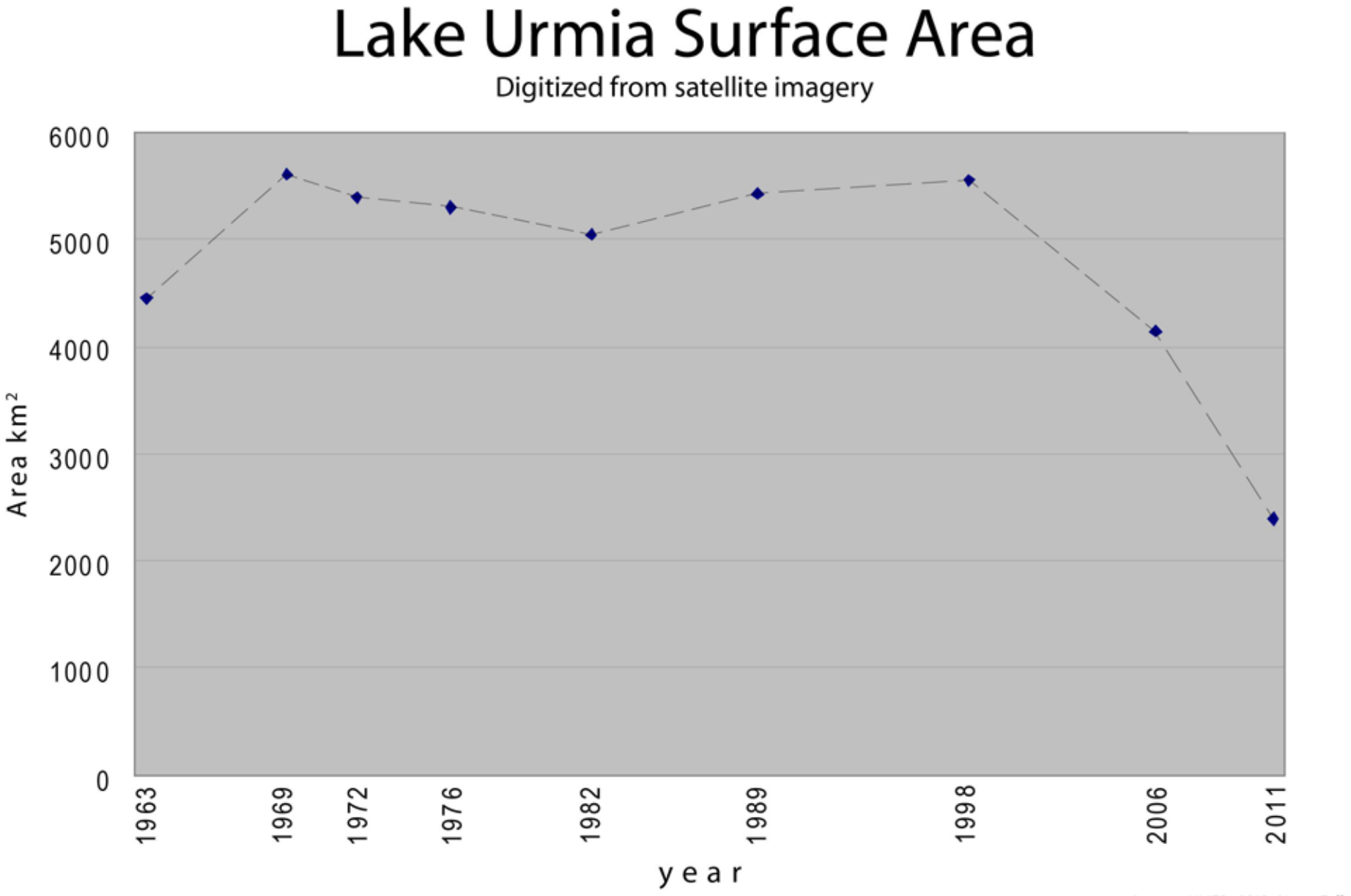

Present Situation (continue)

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Present Situation (continue)

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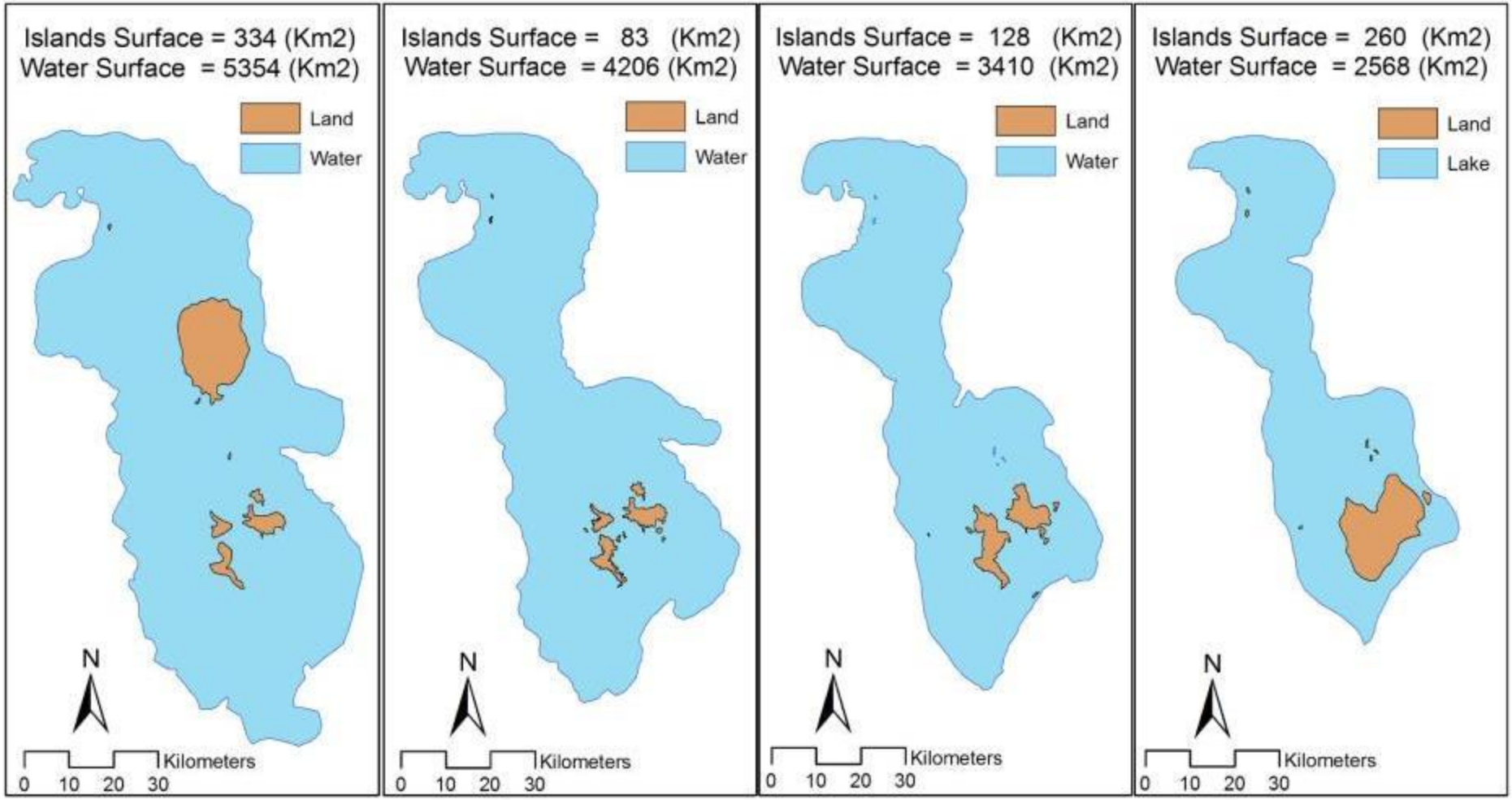

1998 2006 2009 2011

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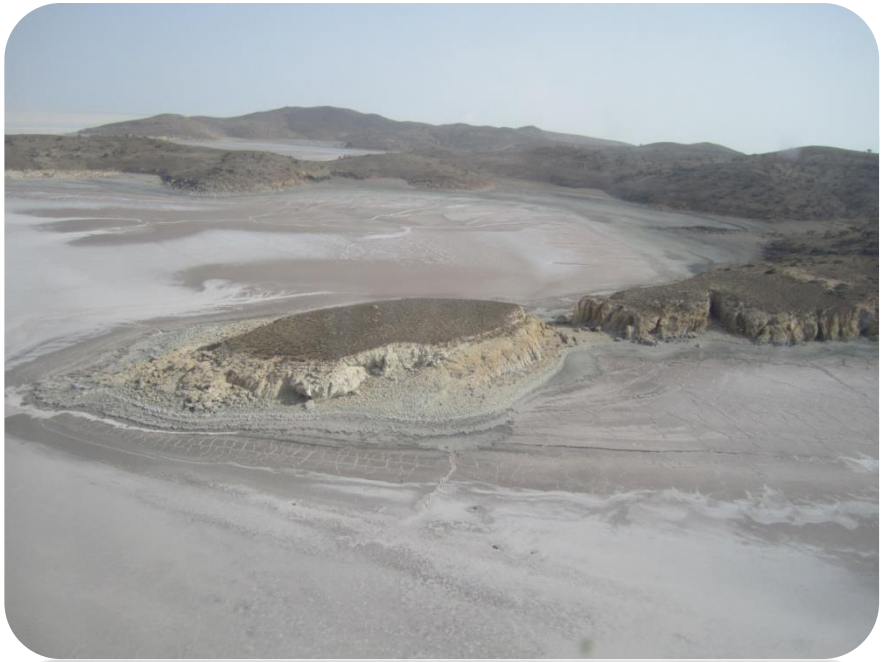
Forecasting salt storms due to Urmia lake drying up

Present Situation (continue)

Ashk island, Urmia lake,
Sep. 2007



Ashk island, Urmia lake,
Sep. 2012

Ecosystem Approach as a current strategy for integrated managing of Urmia lake basin

Part A- Article 67 the Fourth Development Plan of I.R.Iran (2005–2009) and Part A1- Article 187 and Part A- Article 191 and Part D- Article 193 the Fifth Development Plan of I.R.Iran (2010 – 2014):

Ecosystem based management plan in sensitive ecosystems, especially in Urmia lake will be prepared and implemented……

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Ecosystem Approach as a current strategy for integrated managing of Urmia lake basin

Ecosystem Approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It is the primary framework for action under the Convention on Biological Diversity and comprises 12 principles. All around the world, the ecosystem approach is increasingly being adopted as a framework for the management of protected areas.

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Application of the ecosystem approach to the management of Urmia Lake involves the following main considerations:

- The Lake should be managed in the context of the Urmia Basin, since activities throughout the basin will have impacts on the Lake. This means that a common approach needs to be set between the three provinces that share the basin. The impacts of management activities on adjacent ecosystems must also be carefully considered;

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main considerations (continue):

- The management objectives for Urmia Lake should be set for the long-term, but must recognize that change is inevitable (particular attention must be given to the issues of climate change);

- Management should be decentralized to the lowest appropriate level. This means the provincial agencies should be responsible for managing the Lake and local communities/agencies for the satellite wetlands.

- Management must involve all key stakeholder groups, particularly local communities, both at planning and implementation stages;

main considerations (continue):

- The conservation of ecosystem structure and functioning to maintain the ecosystem services (Values) provided by the Lake should be a top priority. An appropriate balance needs to be set between the conservation and sustainable use of the Lake's natural resources, based upon the capacity of the system;

- Management should take account of the economic context - reducing market distortions that might damage ecosystem functioning (e.g. lack of water-pricing), and supporting activities for sustainable use and biodiversity conservation;

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main considerations (continue):

- Management should be evidence-based (including traditional local knowledge).

- Management will not succeed unless people are aware of the values provided by the Lake, and the threats to it. Raising public awareness must therefore be given high priority. Similarly, those responsible for management will need to develop the required capacity to carry out their work.

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Conservation of Iranian Wetlands Project(CIWP)

Demonstration site: Urmia lake

DoE - GEF/UNDP (2005 – 2014)

Establishing ecosystem based management plan for Urmia lake basin

This project aims to demonstrate reduction of the major threats to the Urmia lake through promoting ecosystem-based management, coordinated through an integrated management plan.

CIWP
DoE – GEF/UNDP (2005-2014)
(Continue)

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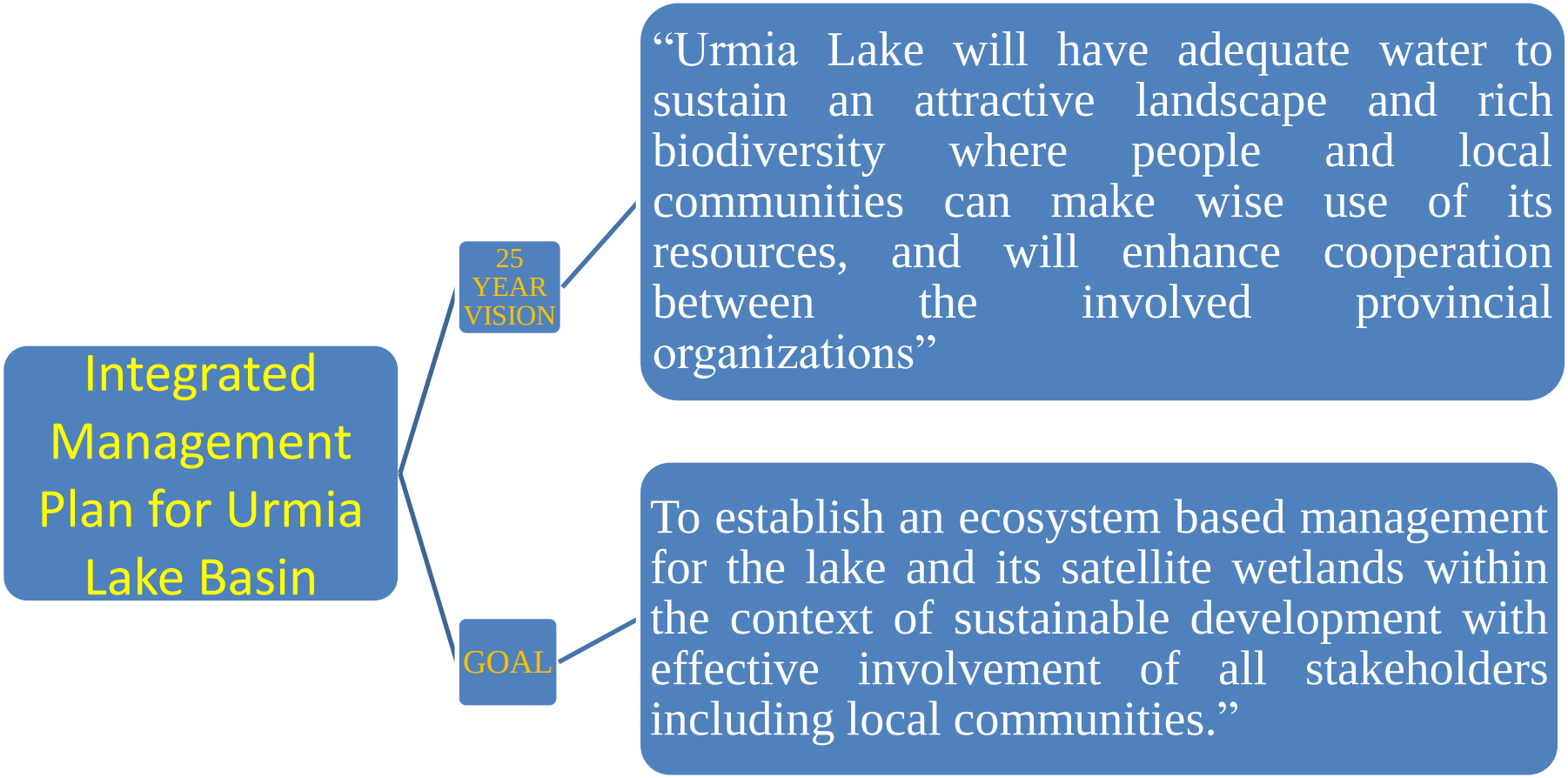
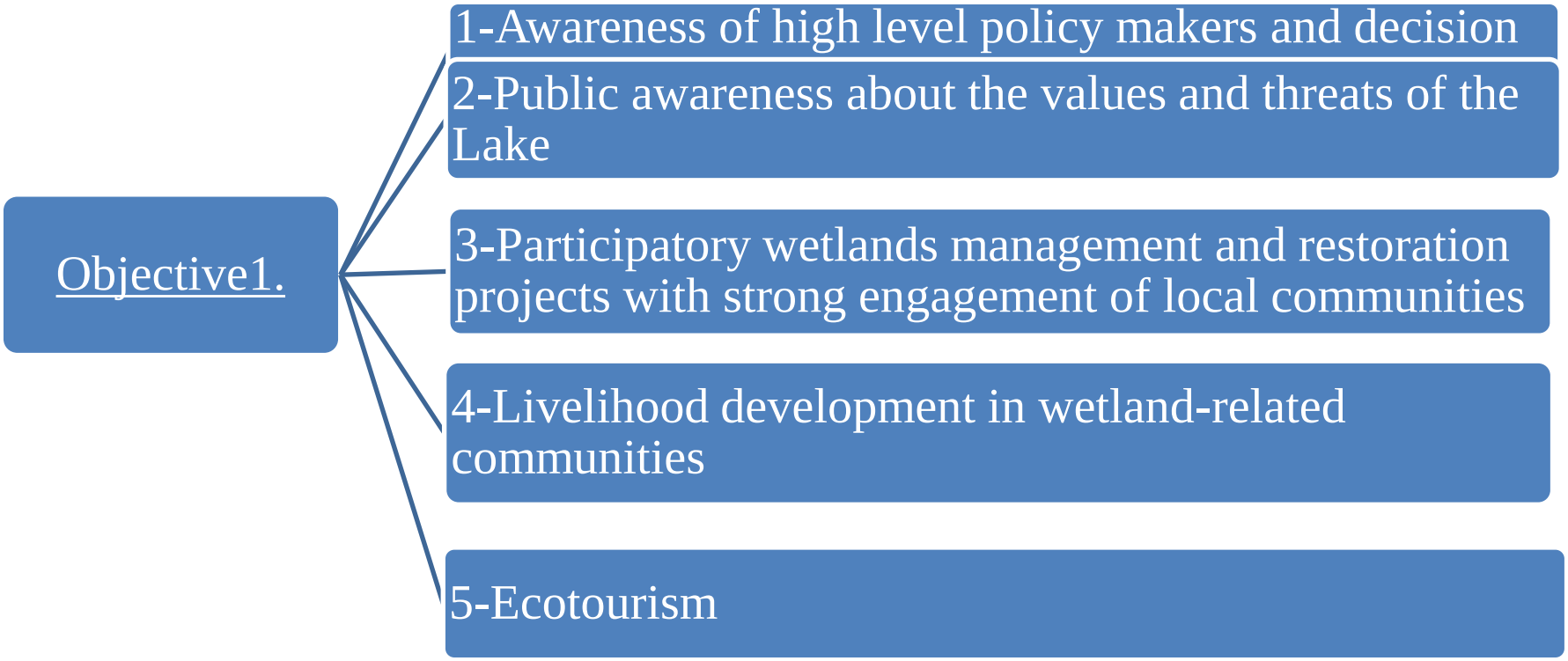


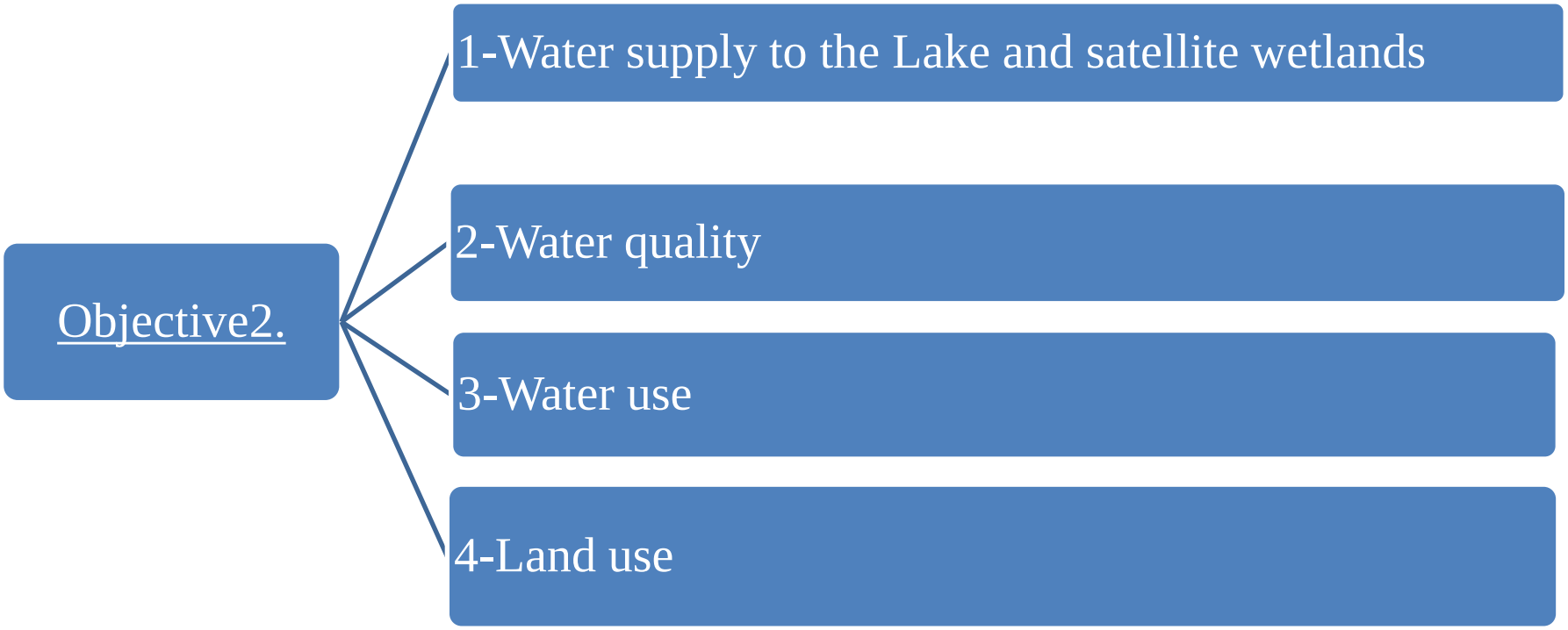
Management Objectives

Objective 1: To raise awareness of the values of the Lake and satellite wetlands and to enhance public participation in their management;



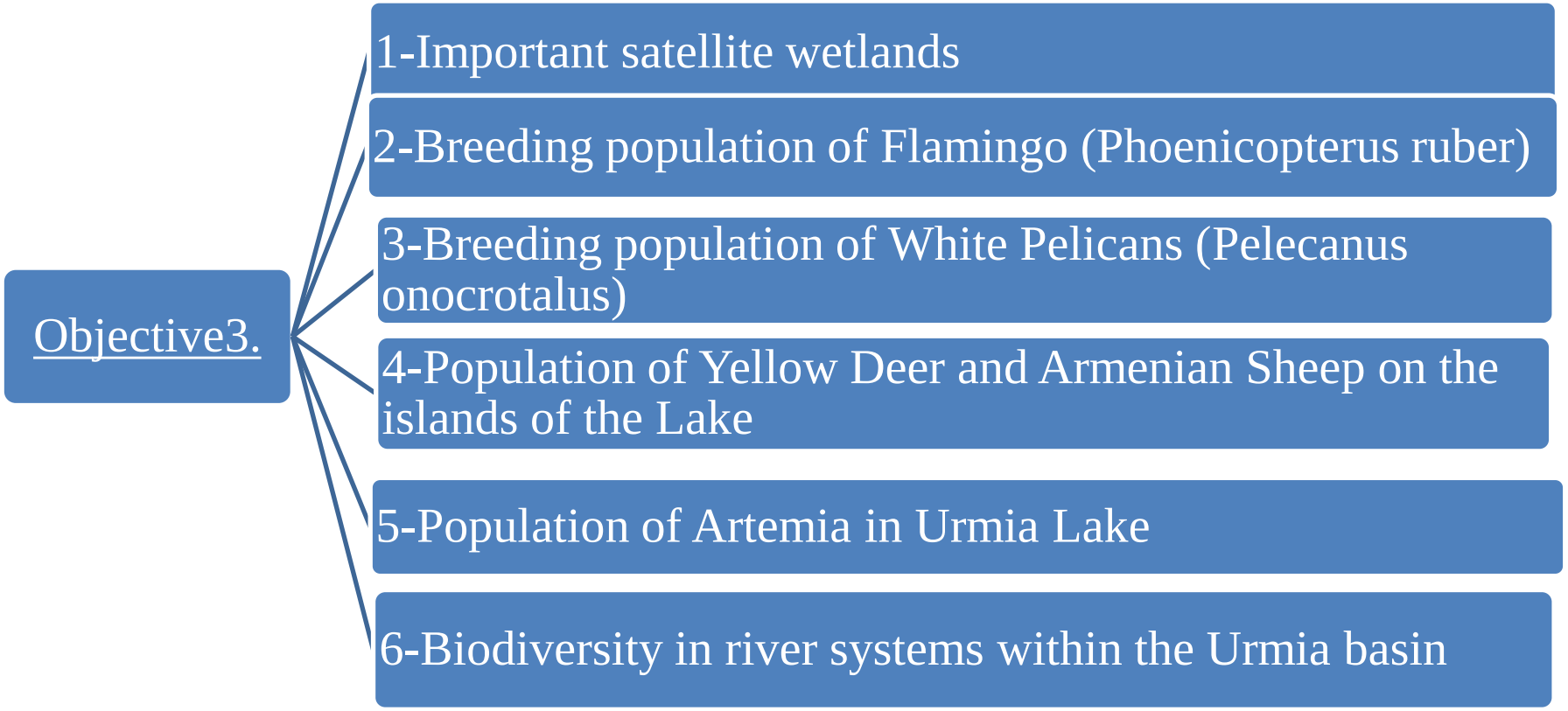
Management Objectives (continue)

Objective 2: Sustainable management of water resources and land use;

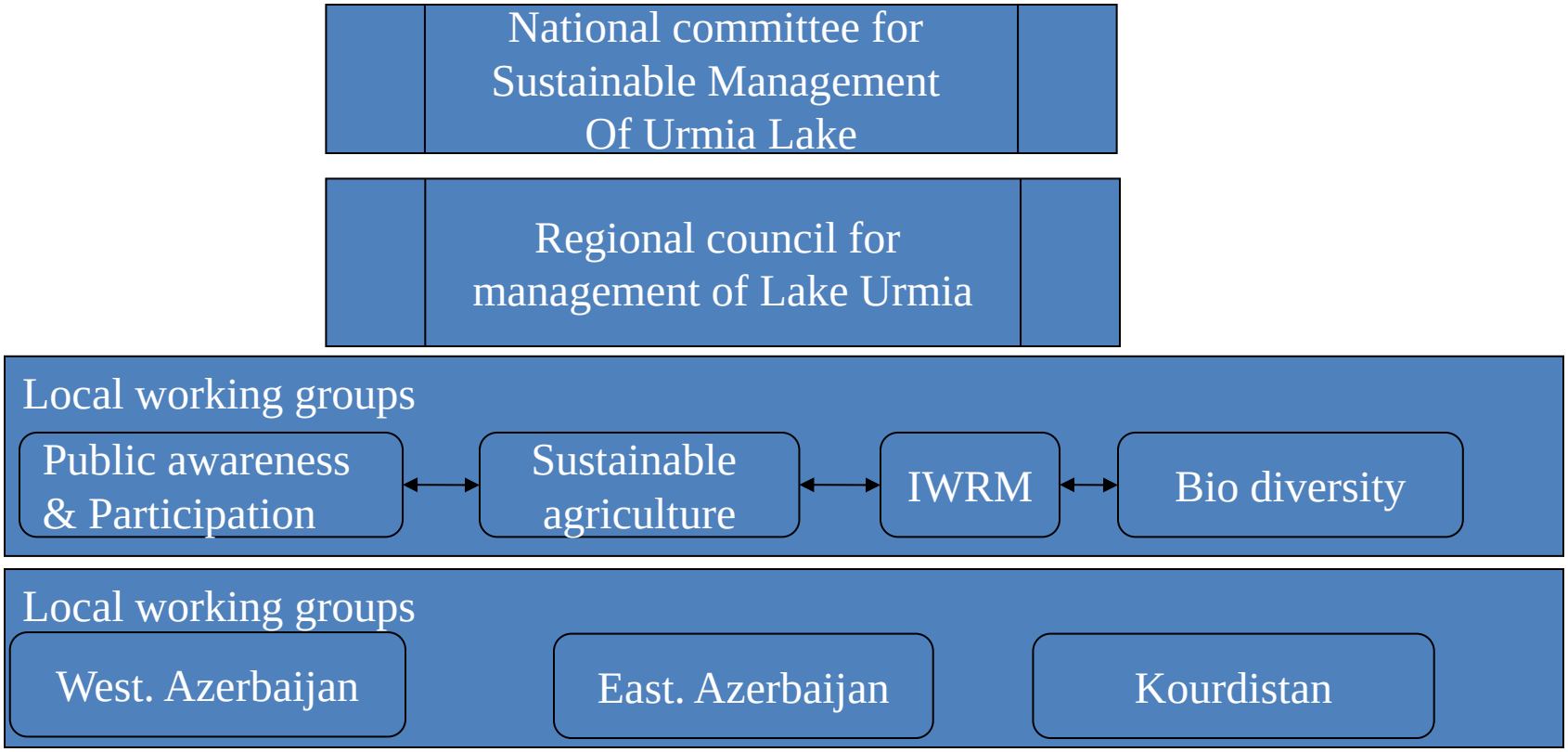


Management Objectives (continue)

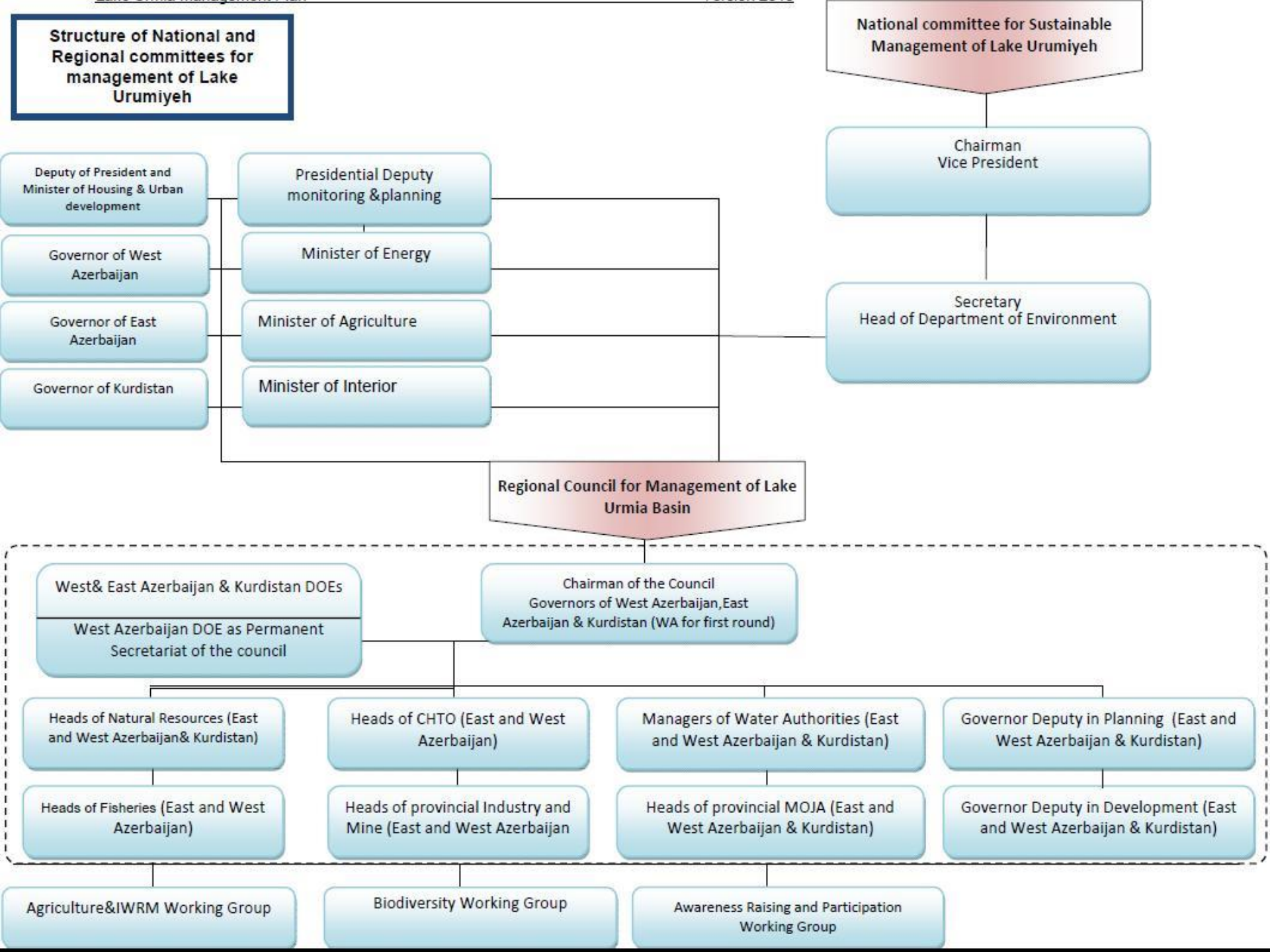
Objective 3: Conservation of biodiversity and sustainable use of the wetland resources;



Working groups for implementing ecosystem based management in Urmia Lake basin



Structure of National and Regional committees for management of Lake Urumiyeh



The main results of the project:

project activities including preparatory works, coordination, training, awareness raising, studies and surveys, planning and implementations for Urmia lake started from the earlier stages of the project and continued till now. In addition to the establishment of the Regional Council for Urmia lake Management, other Key outcomes and crucial changes which have been achieved are listed below:

1. **Developing an ecosystem-based management plan:** The first step in undertaking the project was to raise awareness on the ecosystem approach, and prepare for developing an integrated management plan in collaboration with and participation of all the main stakeholders. Several training and consultation workshops were arranged in the region to discuss the threats and opportunities, strengths and weaknesses (SWOT), desires and requirements in relation to the wetland resources. This enabled all the stakeholders to agree a common VISION and GOAL for the Lake

2. Urmia Lake environmental water right calculation and approval

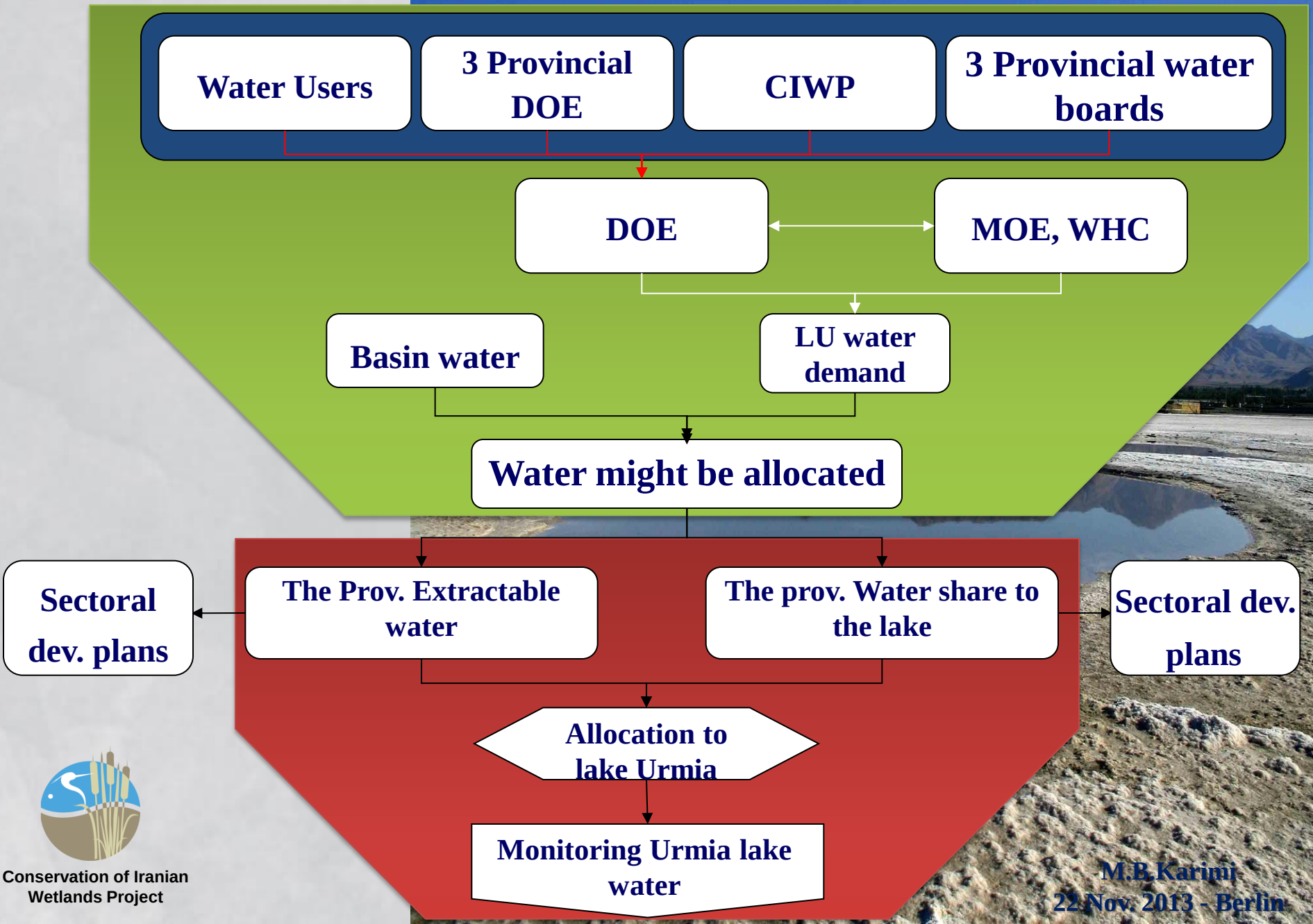
After conducting technical studies the value of 3.1 billion cubic meters was determined as the basis of managerial decision makings and planning with regards to the basin. 1274.1 meter from the sea level is also calculated and approved as the minimum level of ecological balance of Urmia Lake.

3. Water shares calculation and approval with regard to water resources utilization by the provinces located in the basin and securing the lake environmental water rights

province	Water resource utilization (MCM)	Securing environmental water rights (MCM)
West Azarbyjan	2035.6	1870.5
East Azarbayjan	1079.3	270.5
Kordestan	585.1	959.1
Total	**3700**	**3100**

CIWP
DoE – GEF/UNDP
(2005-2014)
(Continue)

Lake Urmia Environmental water allocation Process



Conservation of Iranian Wetlands Project

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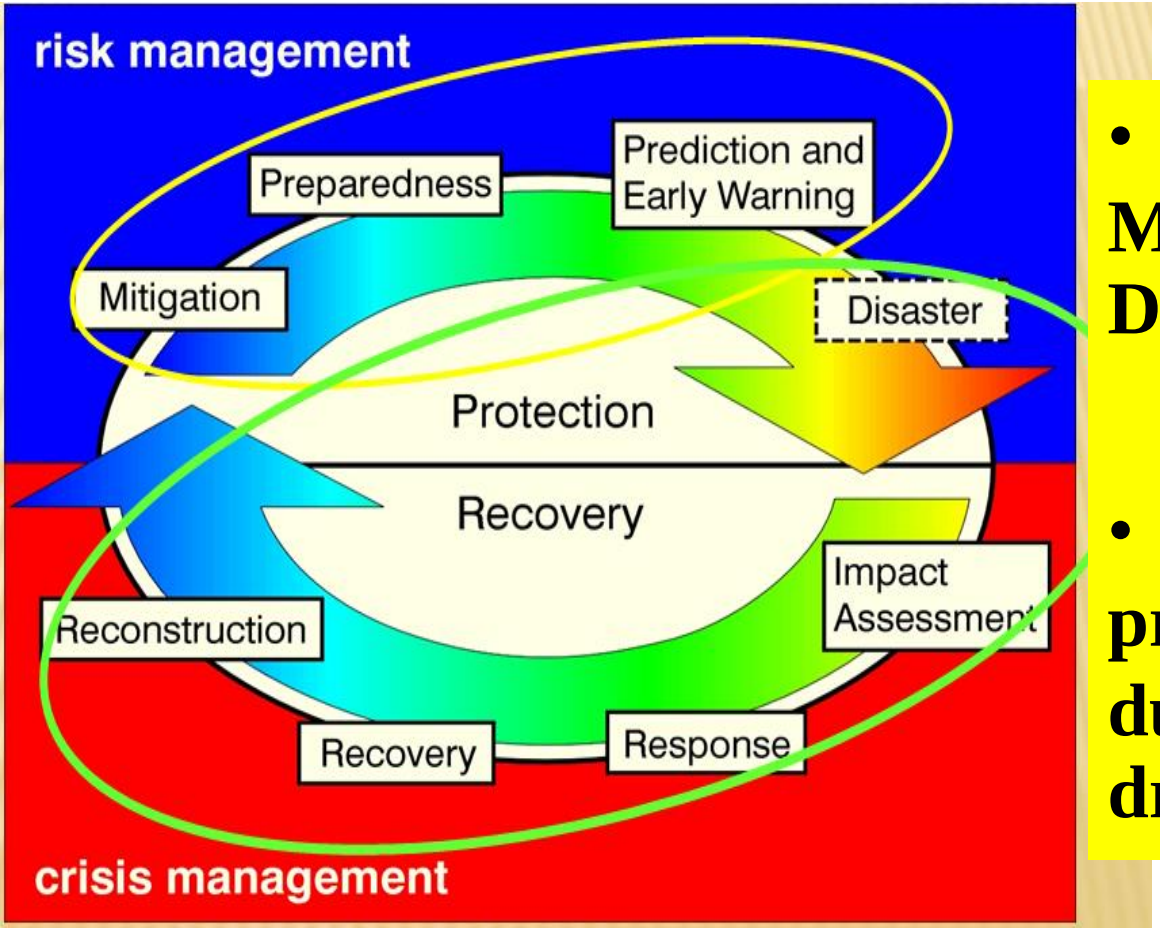
Lake Urmia Water sharing plan

	CRITERIA						Allocation (MCM)	
	Economic				Social			
	Potential irrigation area	RDP/cap	Potential surface water	Per capita invest-ement in water	Population	Consumption per capita	To Users	To Lake
W-Azerbaijan.	2.81	35	3.98	6.0	1.7	4.0	2035.6	1870.5
E-Azerbaijan.	2.94	31	1.36	2.0	2.7	3.0	1079.3	270.5
Kurdistan	0.205	7.5	1.58	1.0	0.4	1.0	585	959
Total/average	5.955	-	6.82	9.0	4.8	-	**3700**	3.1

4. Prohibition of any new water allocation in West and East Azarbayjan provinces,
5. Review and approval of 24 priority Projects according with implementation of management plan and securing environmental water rights of Urmia Lake,
6. Budget allocation review and approval for priority projects,
7. Coordination with Parliament for completing the parliament proposal regarding conservation and restoration of Urmia Lake and other wetlands in critical conditions, which is entitled “conservation and restoration of Urmia Lake and other lakes and wetlands”.
8. Intensify supervision of water utilization in the basin and control of illegal water exploitation by Ministry of Energy and Ministry of Agriculture,
9. Cloud Seeding in Urmia Lake Basin
10. Develop Drought Risk Management plan for Urmia Lake Basin

A response to a possible risk
Lake Urmia Basin Drought Risk management Plan



- **Drought Risk Management instead of Disaster Management**

- **A continous active procedure before, during, and after drought occurence**

Sustainable Agriculture around demonstration wetlands by MOJA and Local Communities/Alternative Livelihood

Cor
Wetlands Project

The way forward and Needs:

Now all of the activities for planning and capacity building have been accomplished and there is a good inter-sectoral cooperation among different organisations at provincial and national level.

Considering ecosystem based management of Urmia lake basin, there are some needs:

1. Establishing Administrative framework to implementing the projects that endorsed by National and local level joint committees,
2. Financial support of rehabilitation projects,
3. Improving and completing information and data about the lake and the basin,

The way forward and Needs (continue):

4. Detailed plans for reviewed and adoptive water resources and agriculture development projects,
5. Review and modify water and agricultural development impacts on water budget of the Lake,
6. Assessment of The Kalantary Highway (which crossed the Lake into northern and southern parts) impacts on environmental and hydraulic situation of Urmia lake,
7. Cooperation with other countries and international organization that having reach experience about the same situation.

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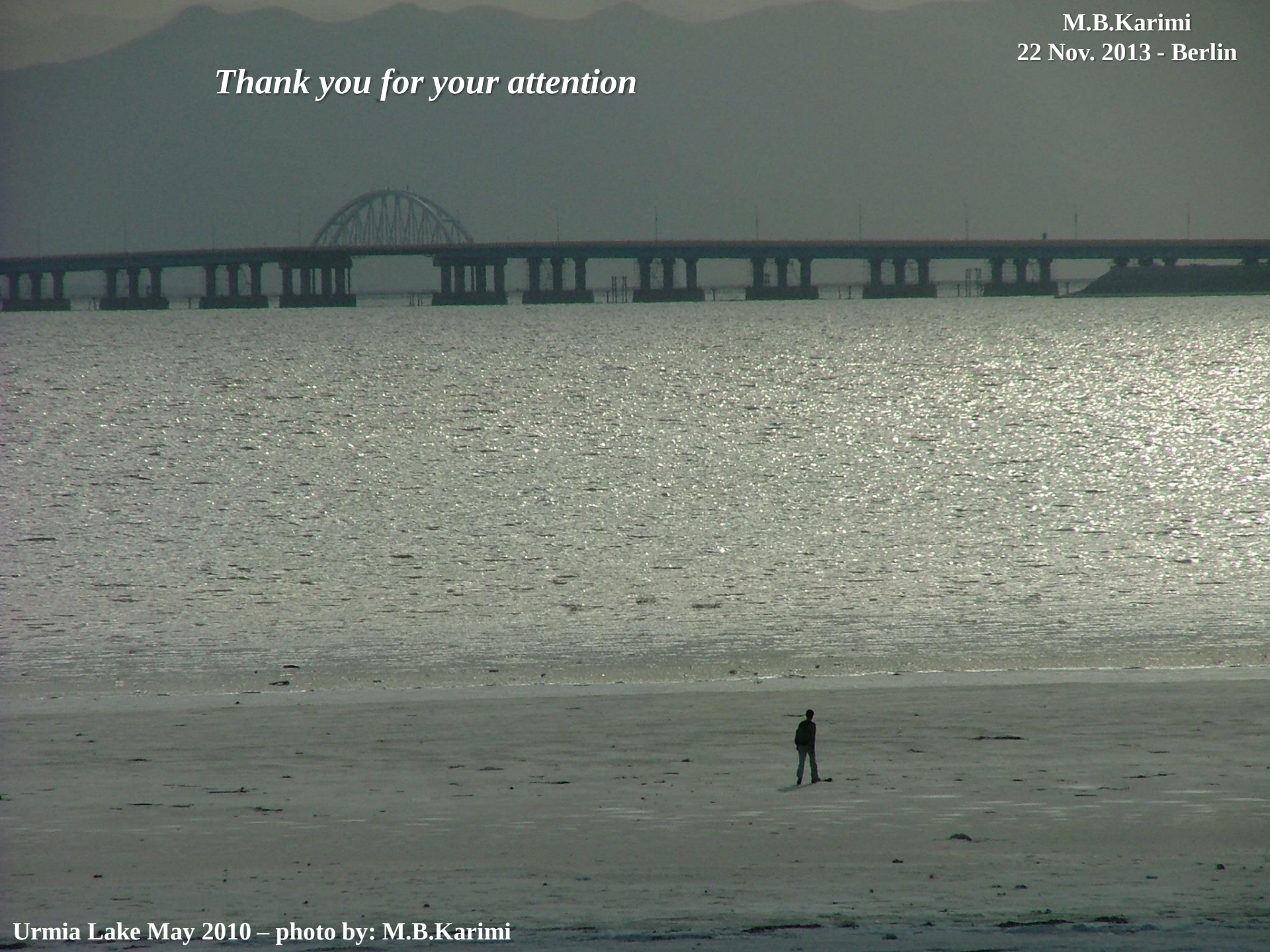
Thank you for your attention



Urmia Lake May 2010 – photo by: M.B.Karimi