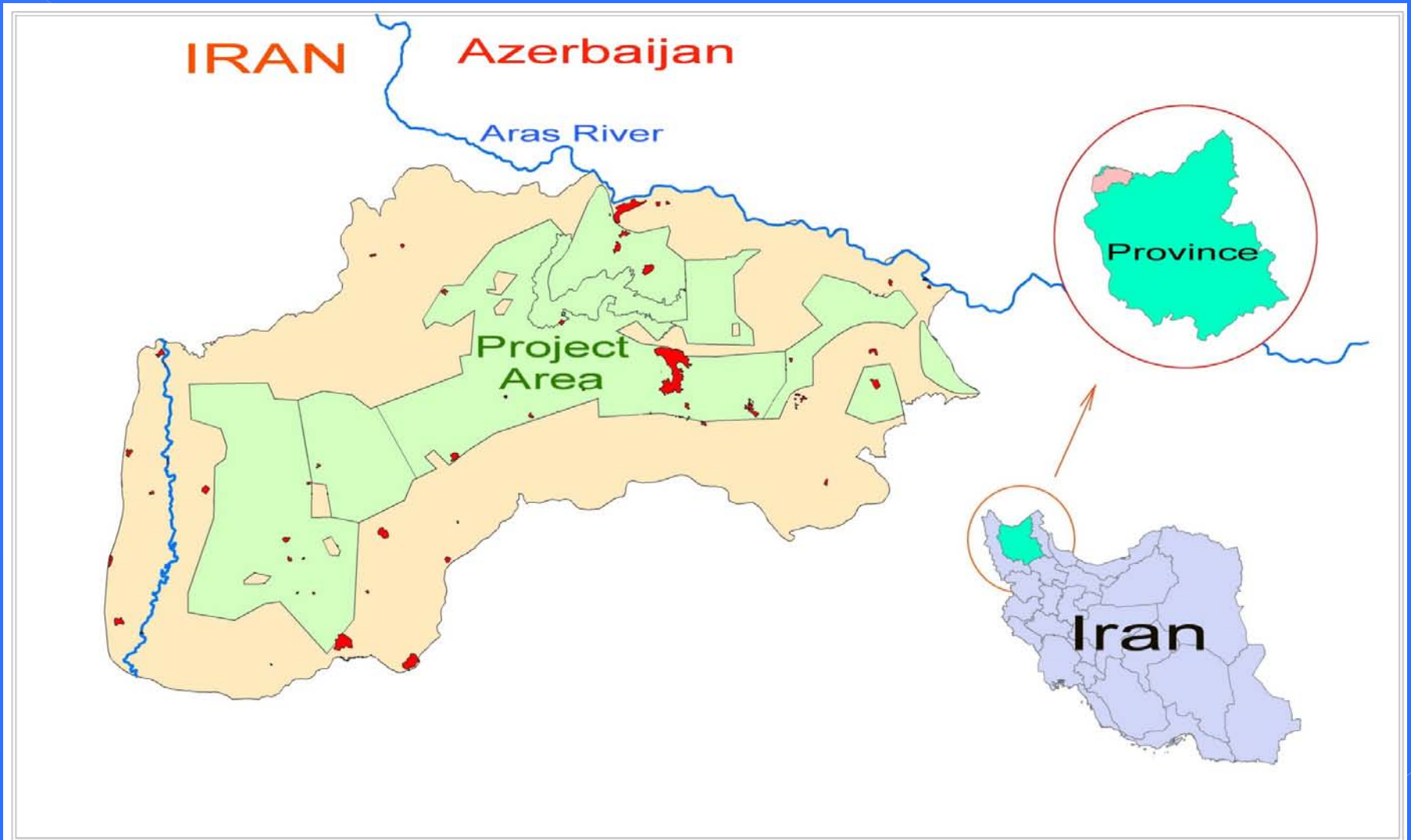


Using EIA as a Design Tool for Irrigation Plans

**By: Farahnaz Sabzevari & Reza Khalili
Lar Consulting Engineers- Iran**

April 2015



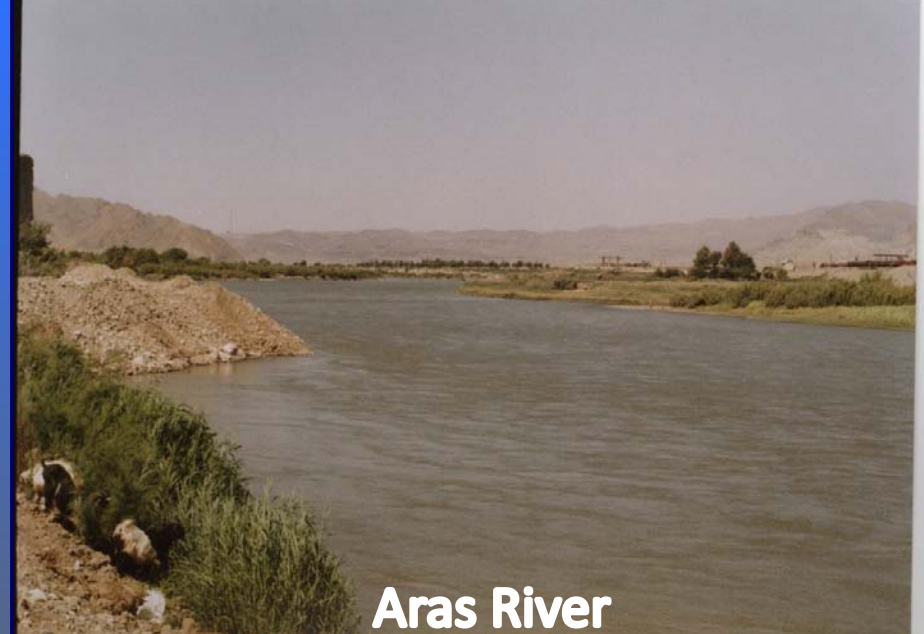
Geographical Location of the Project Area



Iran

Azerbaijan

Aras River



Aras River



Water Taking from Aras River



Water Conveyance Pipeline

General Methodology

Project Description

Environmental Baseline Study
(EBS)

Identifying the Impacts

Impact Assessment & Analysis

Ecological Capability
Evaluation

Rapid Impact
Assessment Matrix

Eco-Mapping

Conclusion

Environmental
Management Plan

This Paper

Impact Analysis →

Step 1

**Ecological Capability
Evaluation for
Agricultural Land use**

Step 2

**Rapid Impact
Assessment Matrix
(RIAM)**

Step 3

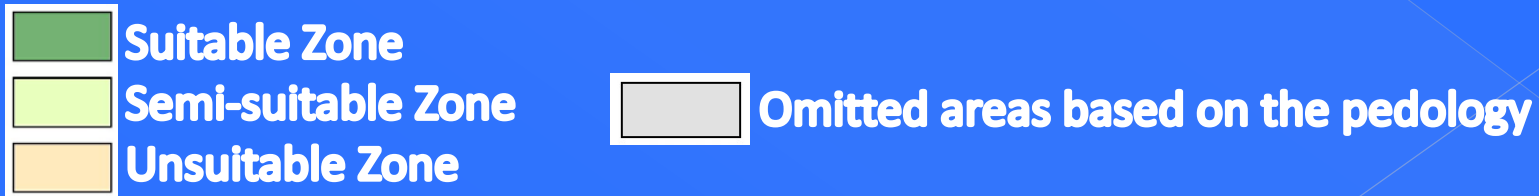
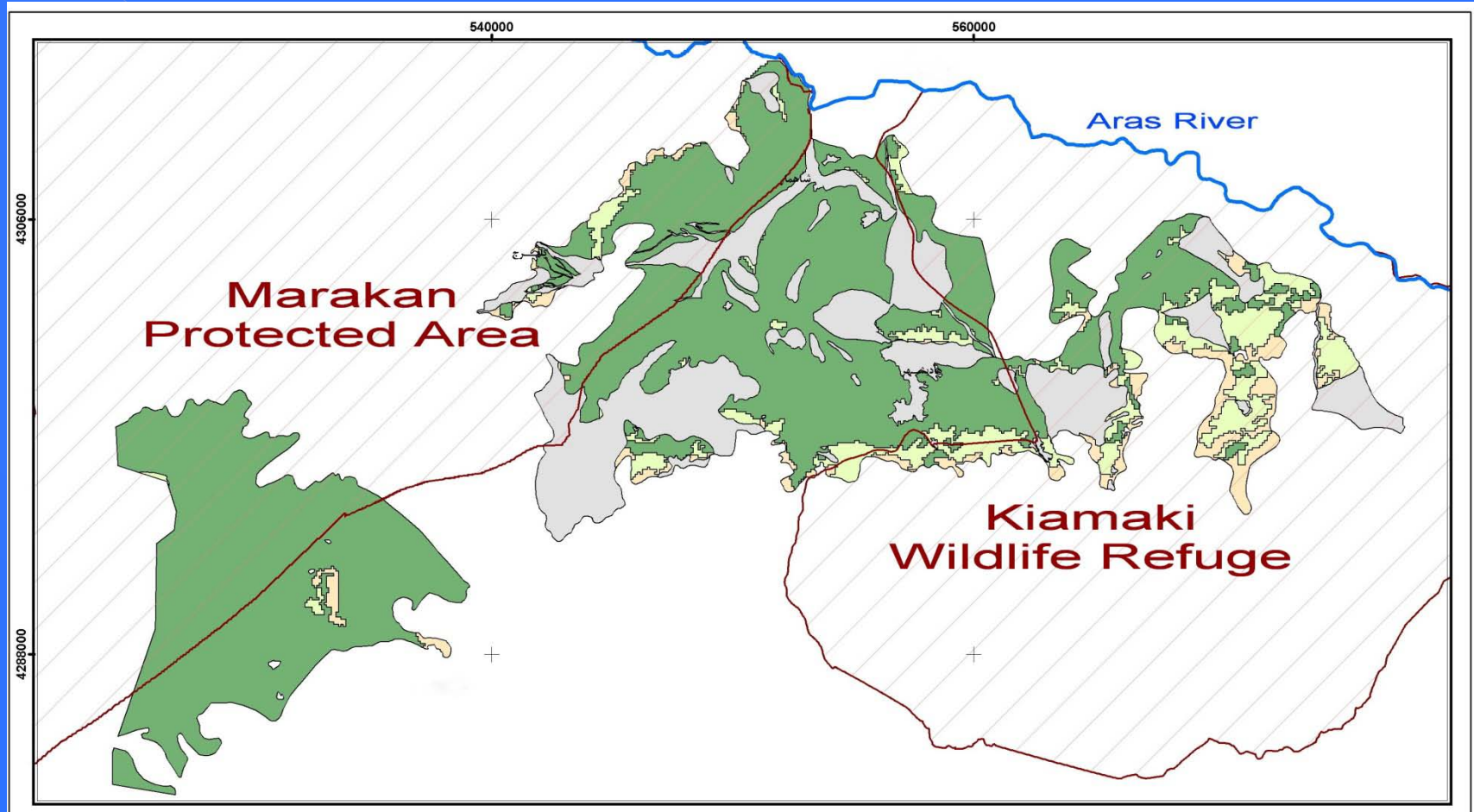
Eco-Mapping

Conclusion

Step 1: Proposed Ecological Model for Agricultural Land use in the Project Area

Zone	Soil Texture	Slope (%)	Class
Suitable	Loam	0-8	2
	Clay-Loam Sandy-Clay-Loam		
Semi-Suitable	Silty-Loam	0-8	3
	Sandy-Loam		
Semi-Suitable	Loam	8-15	4
	Clay-Loam Sandy-Loam		
Unsuitable	Any kind of Soil	>15	5

Suitable, Semi-suitable & Unsuitable Zones based on the Proposed Ecological Model



Step 2: Rapid Matrix

Environmental Factor	Impacts in Suitable Zones						Impacts in Semi-Suitable Zones					
	Construction Phase			Operation Phase			Construction Phase			Operation Phase		
	Negative (%)	No Change (%)	Positive (%)	Negative (%)	No Change (%)	Positive (%)	Negative (%)	No Change (%)	Positive (%)	Negative (%)	No Change (%)	Positive (%)
Physical/Chemical	11.1	22.2	0	22.2	7.4	3.7	11.1	22.2	0	25.9	3.7	3.7
Biological/Ecological	18.5	7.4	0	22.2	3.7	0	22.2	3.7	0	25.9	0	0
Sociological/Cultural	0	18.5	7.4	11.1	3.7	11.1	0	18.5	7.4	11.1	3.7	11.1
Economic/Operational	3.7	3.7	7.4	7.4	0	7.4	0	7.4	7.4	7.4	0	7.4
Total	33.3	51.8	14.8	62.9	14.8	22.2	33.3	51.8	14.8	70.4	7.4	22.2

Result: Semi-suitable zones must be omitted

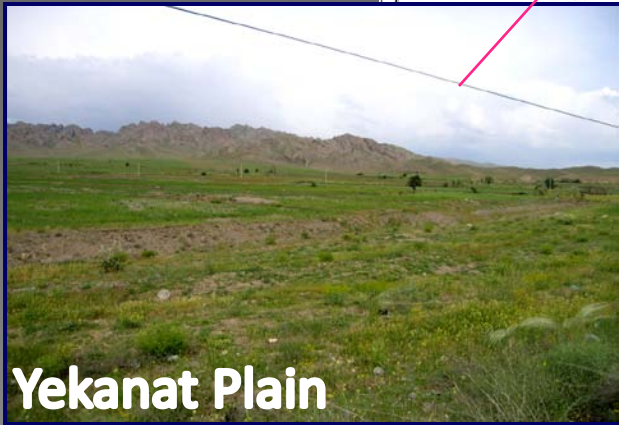
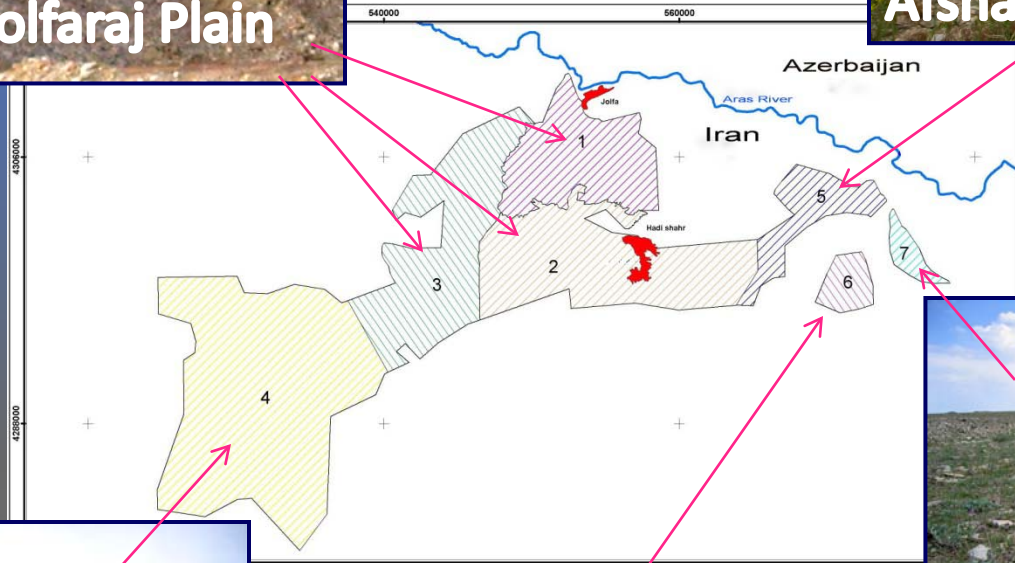
Step 3: Eco-Mapping

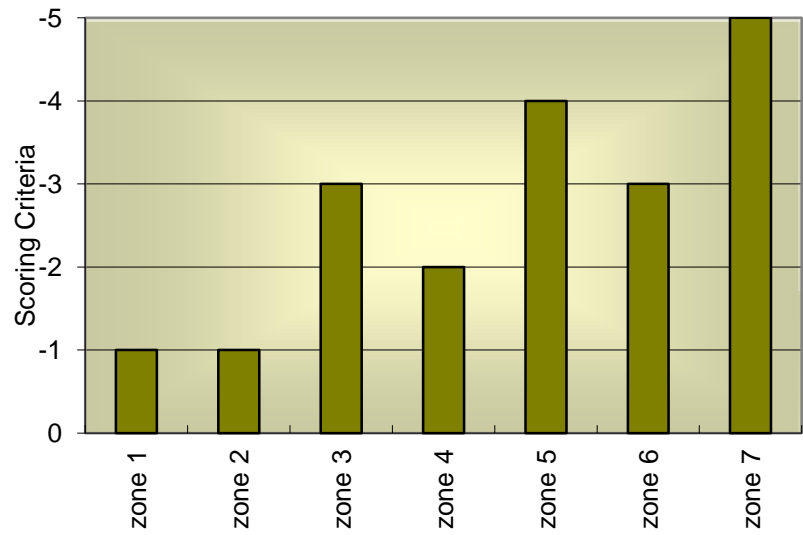
A) Zoning of the Project area (to 7 zones)

B) Survey on existing status (no project option) and future status (project implementation) of project area in each zone, in terms of parameters: Aras River quality, Ground water quality, Soil erosion, Natural vegetation cover (flora) and Sensitive habitats

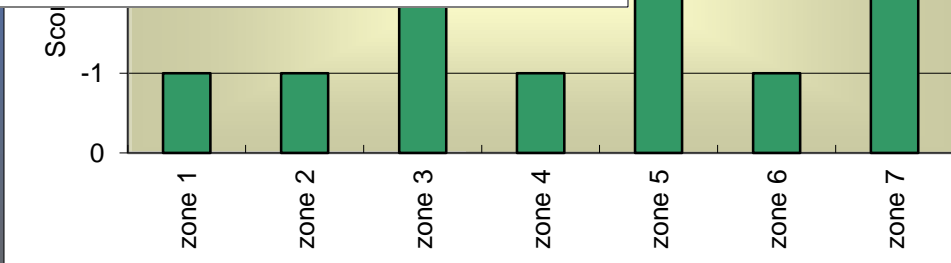
C) Synthesis of impacts and identify the future critical areas

Zonning

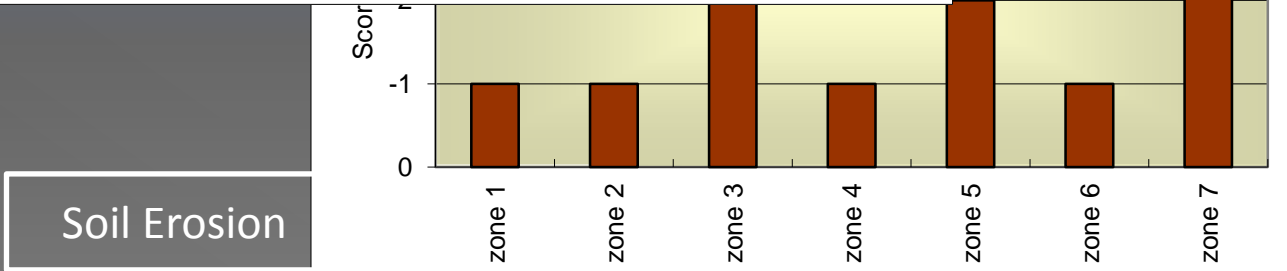




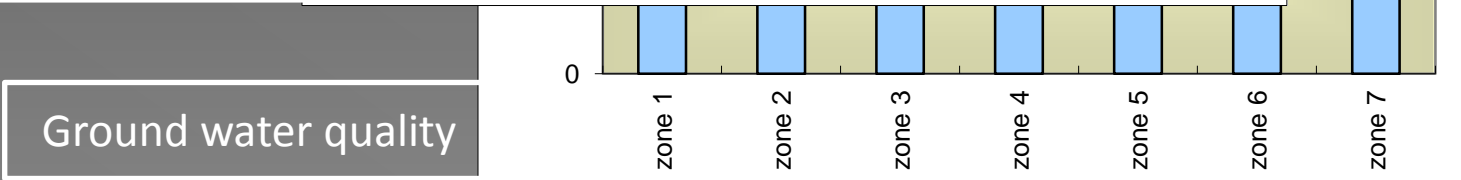
Sensitive Habitats



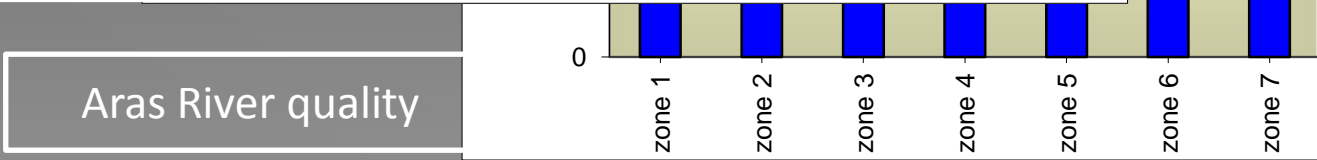
Vegetation Cover



Soil Erosion

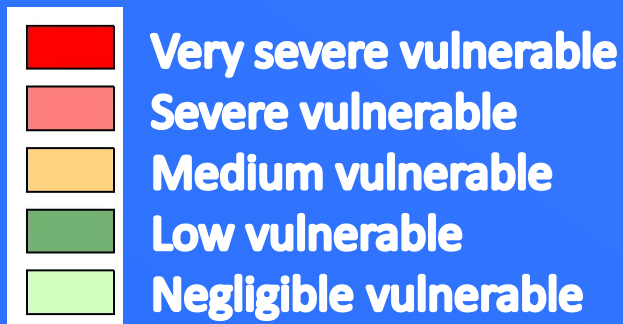
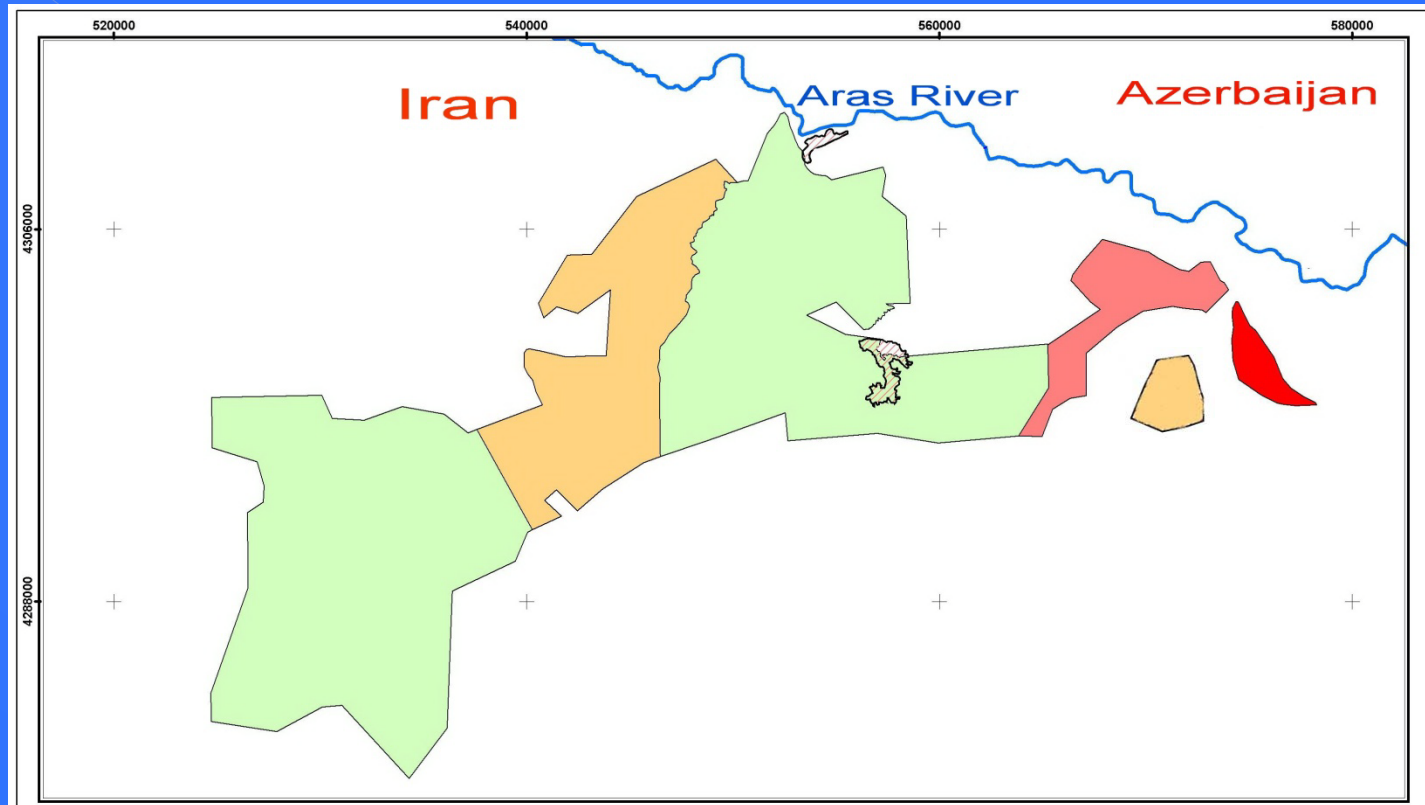


Ground water quality

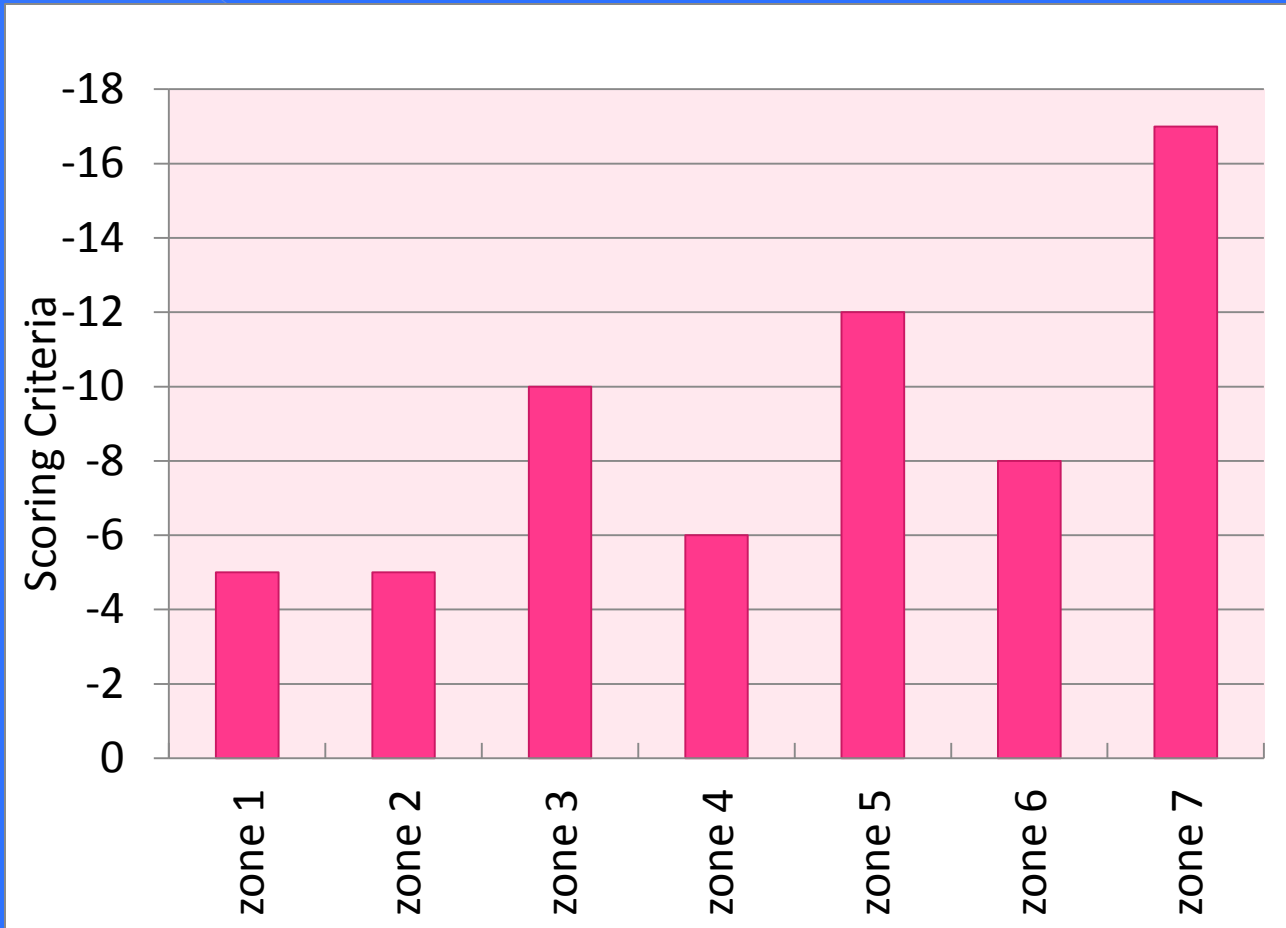


Aras River quality

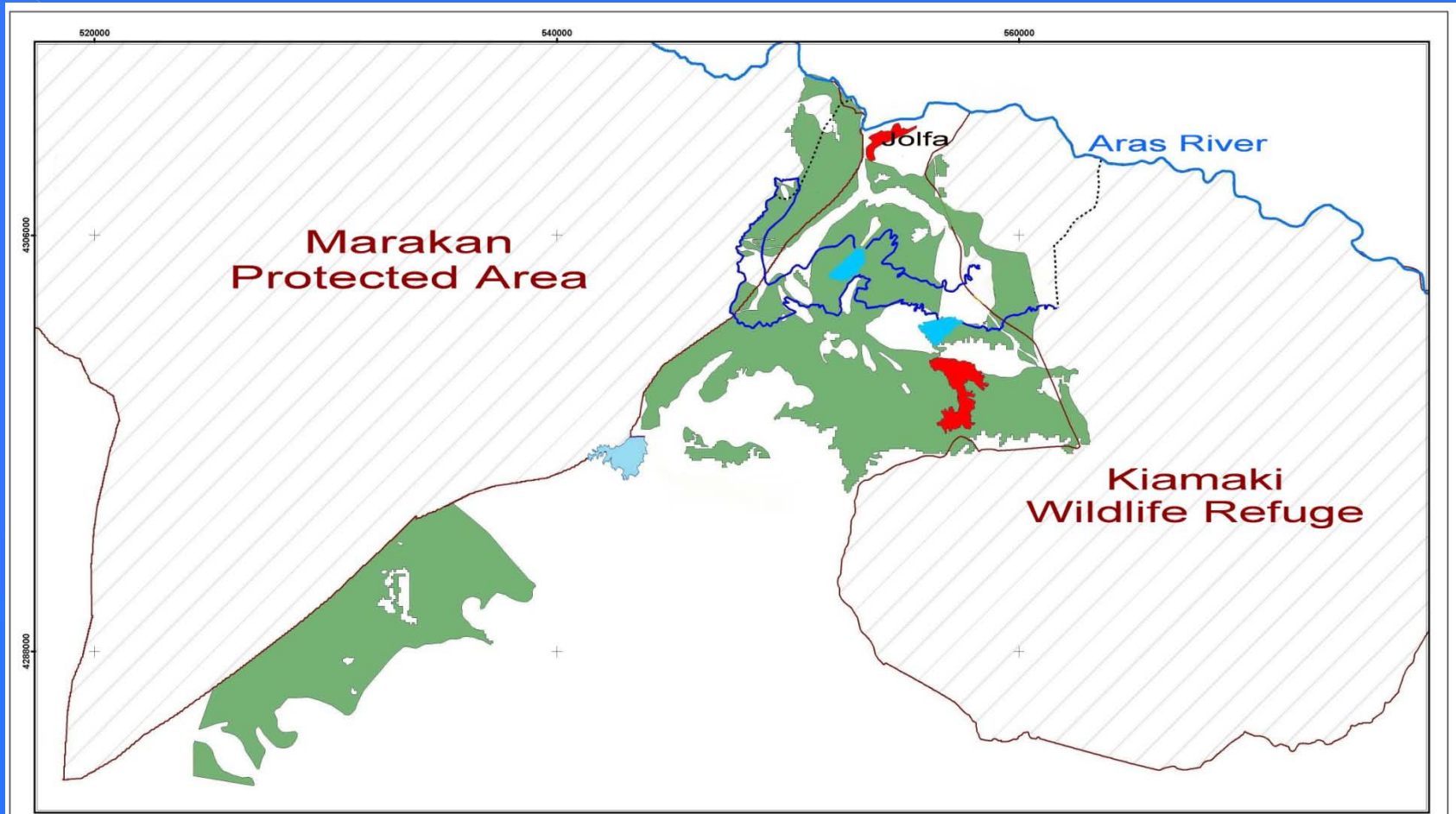
Future Critical Areas Based on the Synthesis of Impacts



Comparison of different zones in terms of the intensity of adverse impacts of the project



Zone	Result
1	✓
2	✓ Except for a part
3	Omitted
4	✓ Except for a part
5	Omitted
6	Omitted
7	Omitted



Approved Area for the Irrigation Plan in the EIA

Thank You For Your Attention

