FLOOD RISK ASSESSMENT, HAZARD AND RISK MAPPING AND FLOOD MANAGEMENT PLANS

Işıl SAKIN
Expert
Flood and Drought Management Department
DG WATER MANAGEMENT

16 April 2015

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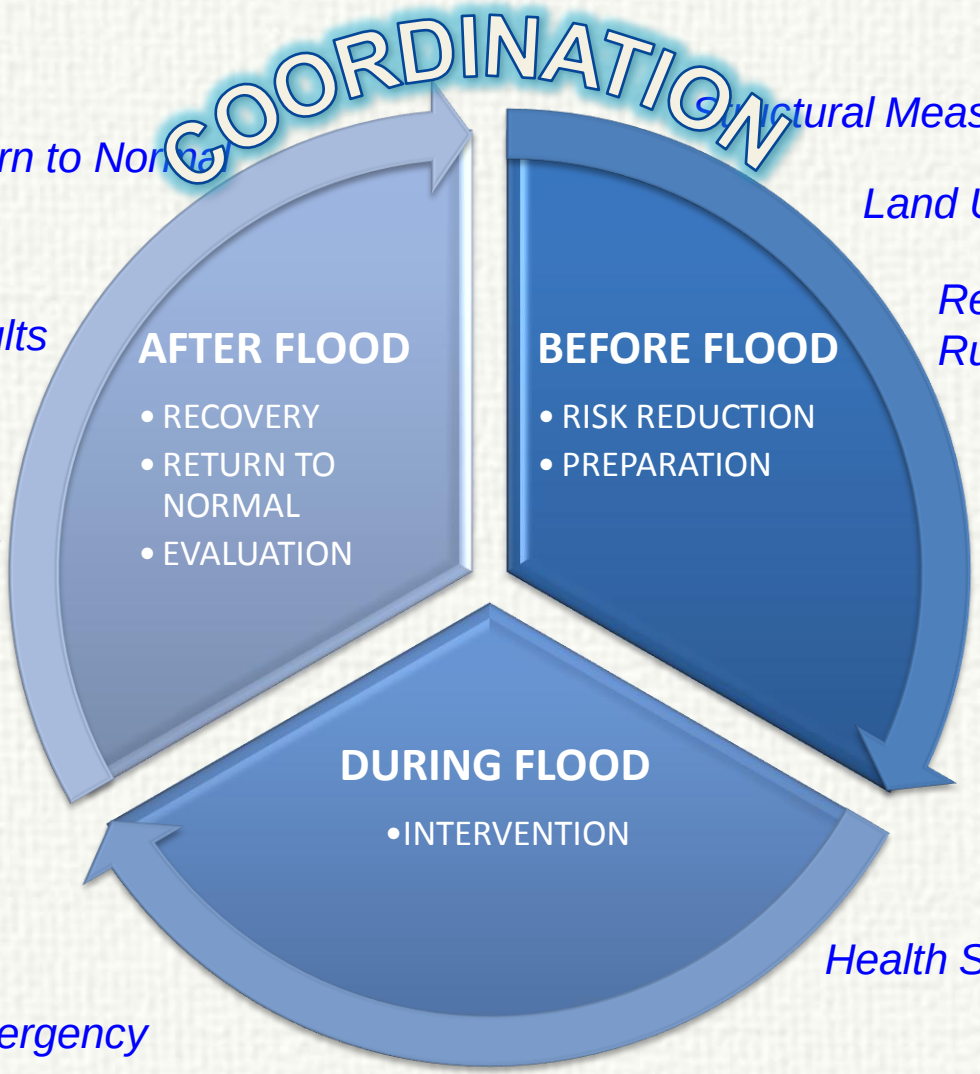
Flood Management in Turkey



Recovery and Return to Normal

Assessment of causes and results of the event

Inventory of flood event

Structural Measures

Land Use Planning

Reservoir Operation Rules

Preparation of Intervention Plans

Flood Forecasting and Early Warning

Health Services

Disaster and emergency intervention

Search & Rescue

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Flood Management at the Basin Scale

First Step:

EU Twinning Project on Floods Directive

- France and Romania Consortium
- Duration: 29 Months
- Activities under 3 Components

Second Step:

Flood Management Plans Preparation for all Basins in Turkey

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Flood Management at the Basin Scale

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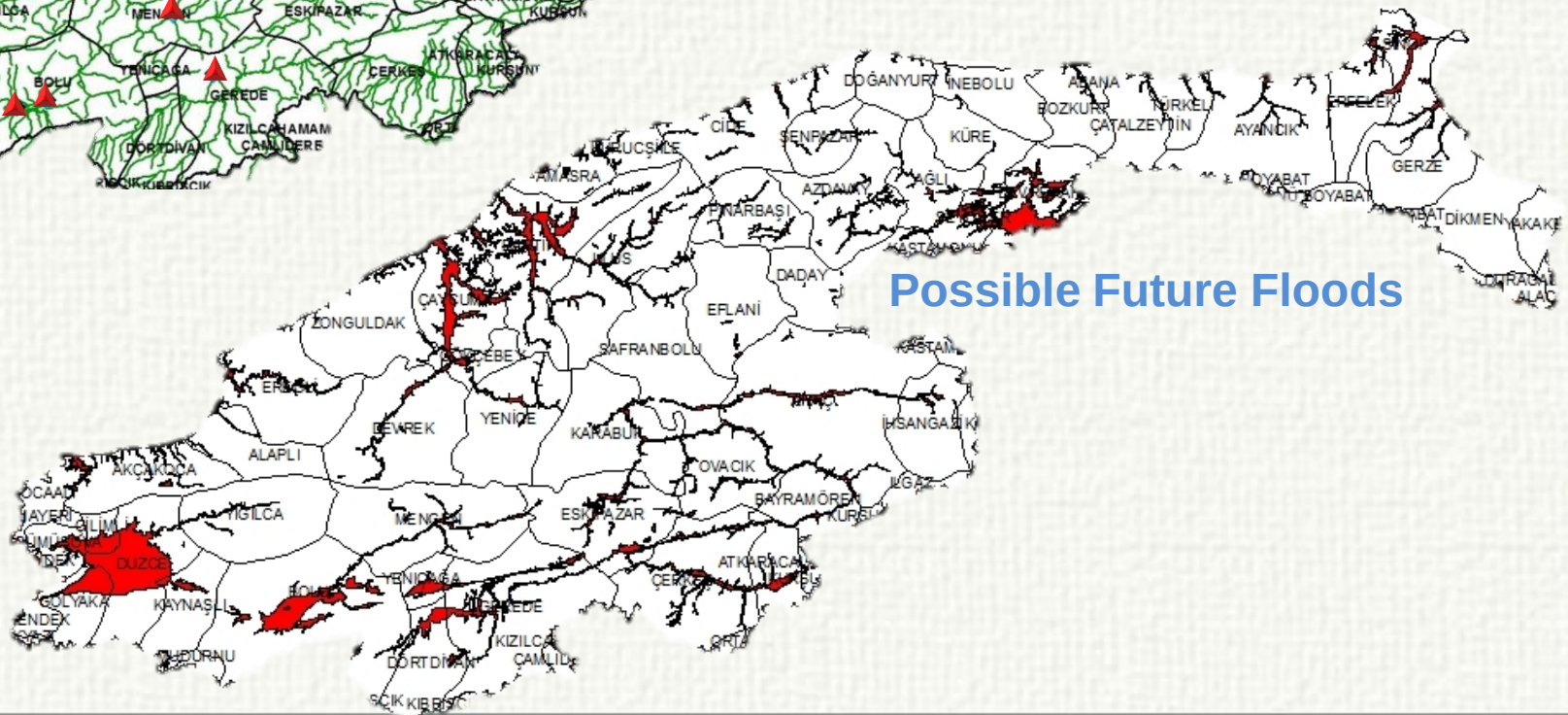
Preliminary Flood Risk Assesment

SU YÖNETİMİ GENEL MÜDÜRLÜĞÜ

Significant Past Floods



Possible Future Floods

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Preliminary Flood Risk Assesment
«Indicators Under Possible Flood Risk»

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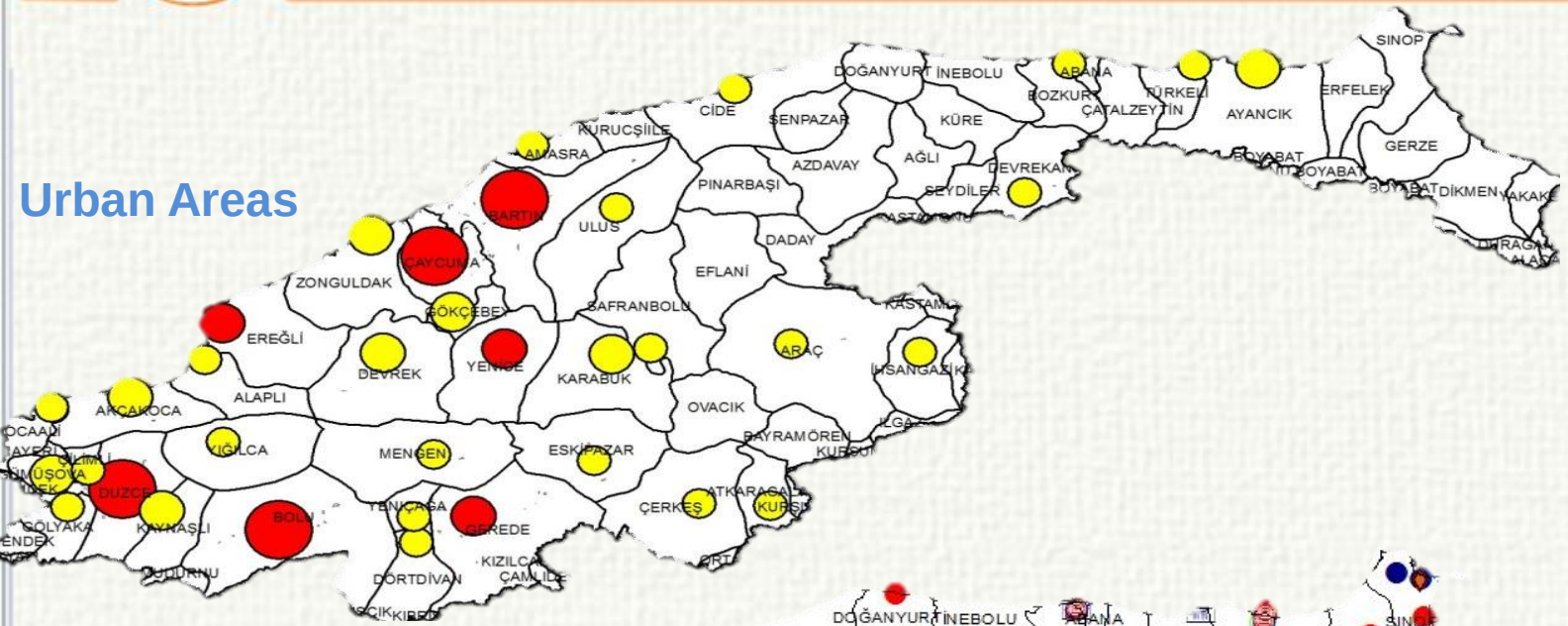
Urban Areas



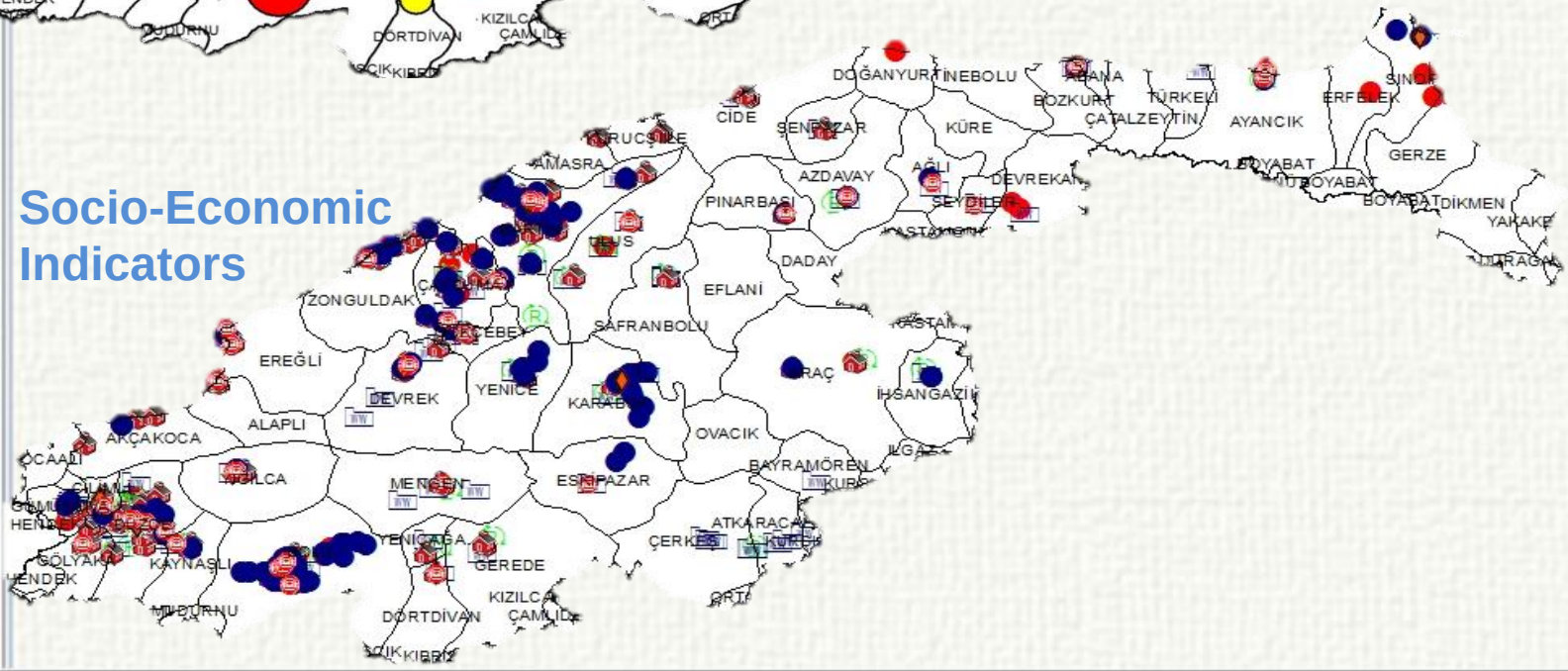
Gösterim / Legend

Kentsel Alanlar / Urban Areas

Alanlar/ Areas (Ha)

- 0 - 100
- 100 - 200
- 200 - 500
- >500

Socio-Economic Indicators



Gösterim / Legend

- Okullar / Schools
- Sağlık Tesisleri / Medical Facilities
- Kamu Binaları / Public Facilities
- Kültürel Tesisler / Cultural Facilities
- Kentsel Deşarj / Urban Discharges
- Katı Atık Tesisleri / Solid Waste Facilities
- Endüstriel Deşarj / Industrial Discharges

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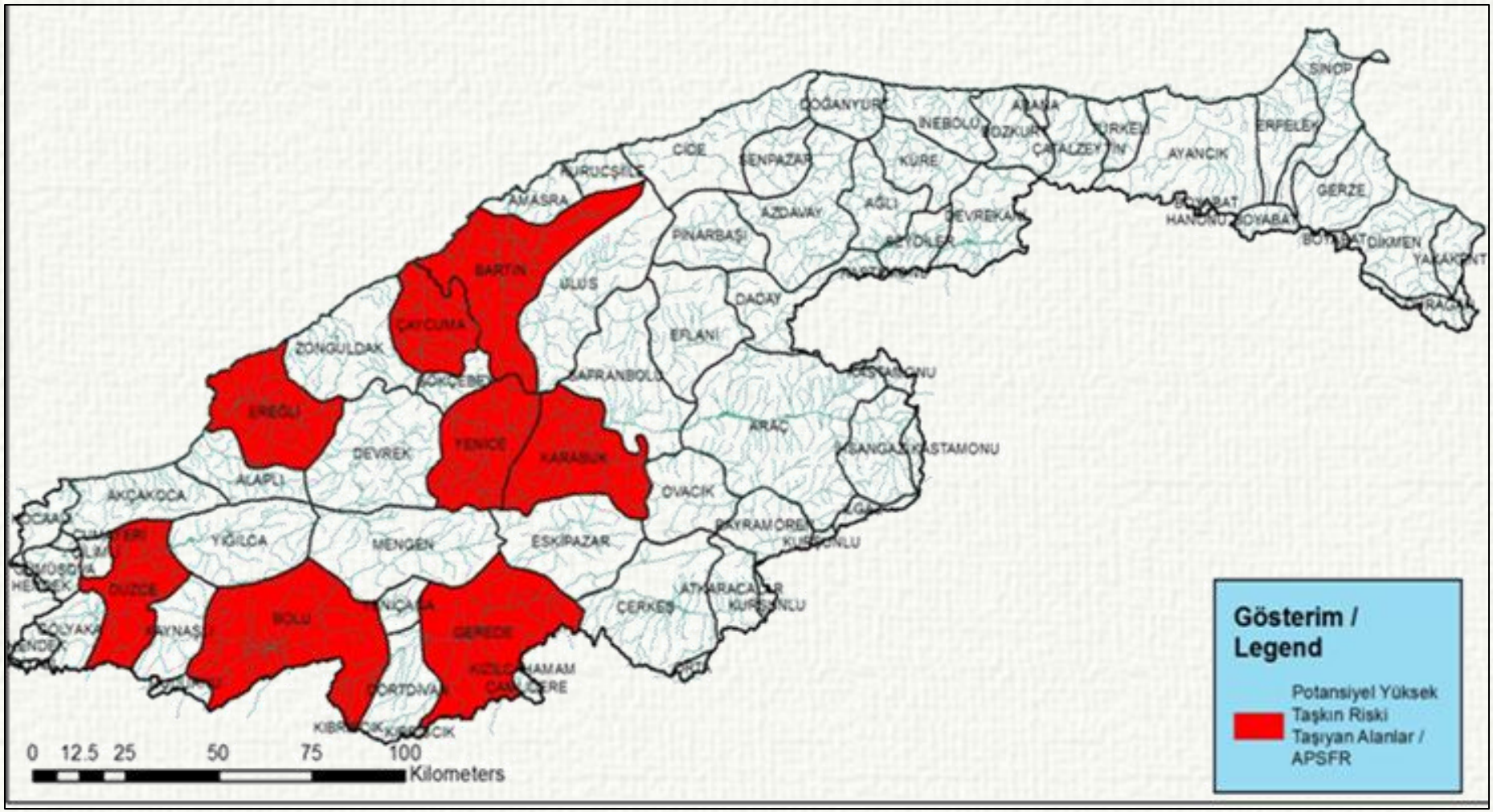
Areas With Significant Flood Risk



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Flood Hazard Maps
Q1000 Bartın

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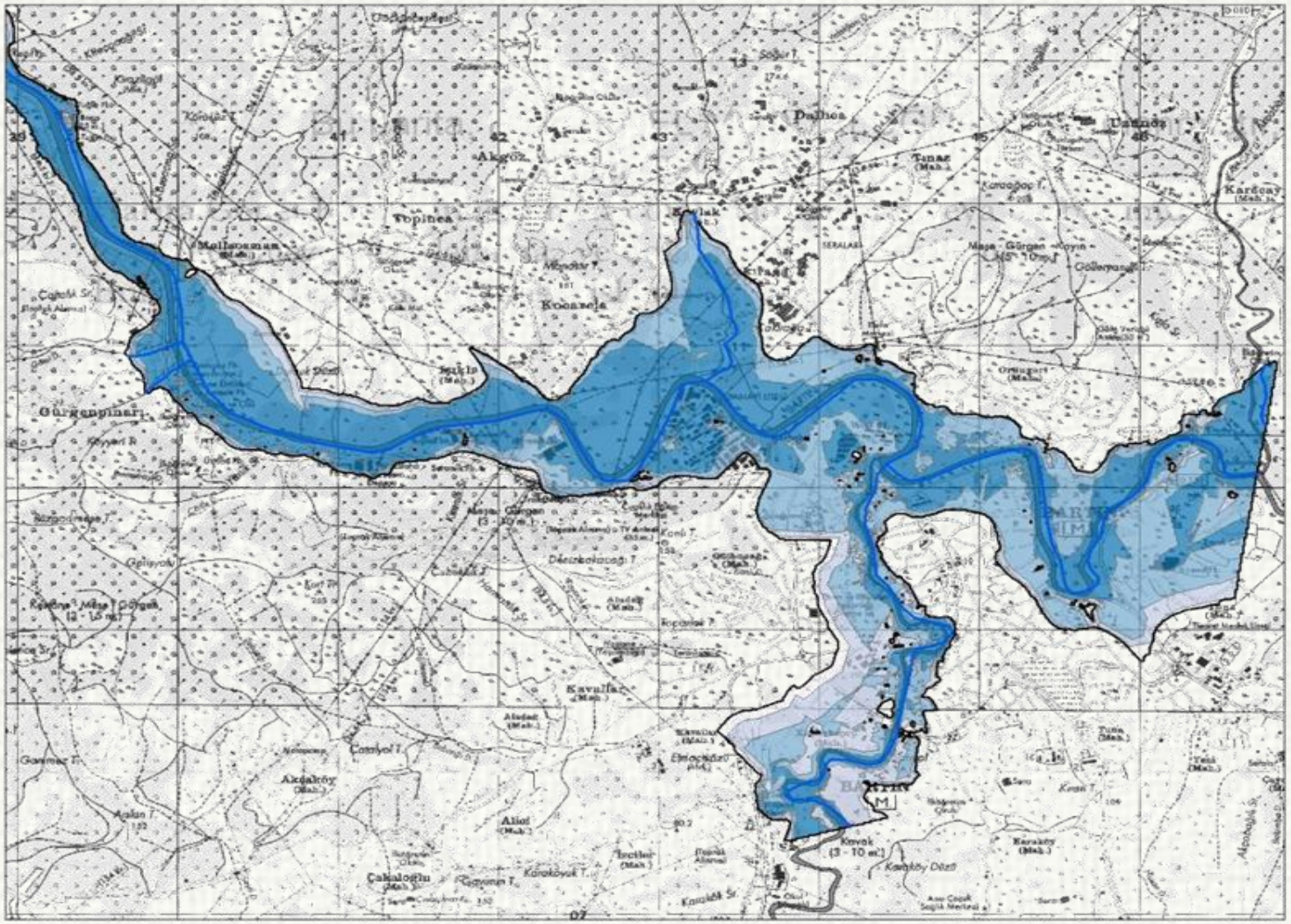
BARTIN RIVER.
FLOOD HAZARD MAP FOR
1000 YEARS RETURN PERIOD

TAŞKIN TEHLIKE HARİTASI



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Flood Risk Maps
Q1000 Bartın

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BARTIN RIVER.
FLOOD RISK MAP FOR
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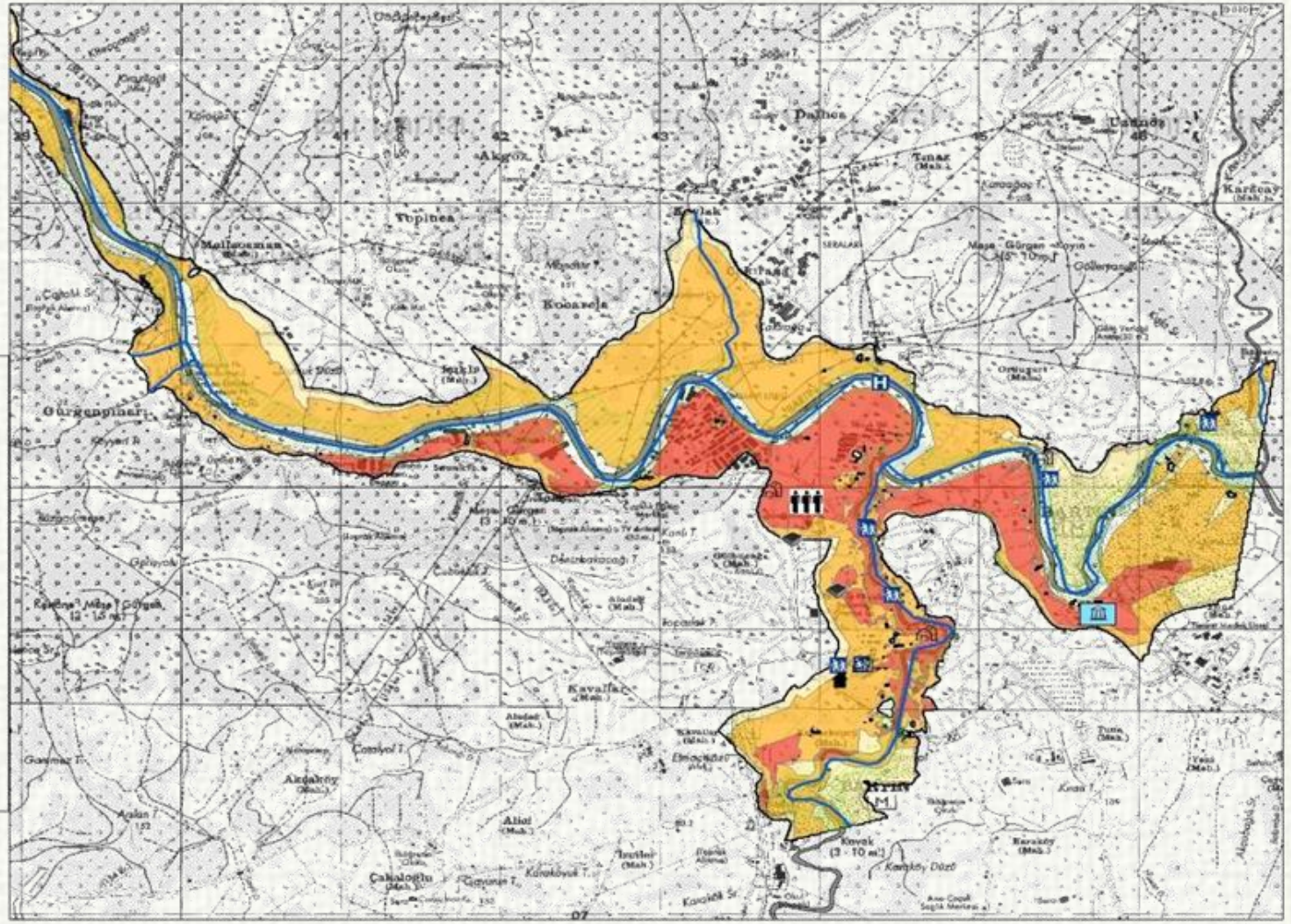
TAŞKIN RİSK HARİTASI



Lejant / Legend

Risk Sınıfları / Risk Classes

- Düşük Risk / Low Risk
- Orta Risk / Medium Risk
- Yüksek Risk / High risk
- Etkilenen Nüfus /Affected Population(5000-10000)
- Taşkın alçıde/Flood extent
- İbadethane/Sanctuary
- İdari Birim/Administrative Unit
- Yerel Kurumlar/Local Institutions
- Hastane/Hospital
- Eğitim Tesisleri/Educational Facilities
- Kültürel Miras/Cultural Heritage
- Sit Alanı/Protected Areas
- Sulama Alanı/Irrigated Areas
- Nehir/Rivers

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OBJECTIVES

Raising safety of public (prevention / protection)

Enhancing knowledge regarding flood hazard and flood risk

Objectives for Flood Risk Management have been defined on the axis of main principles of risk management (prevention, protection, preparation) and classified under 5 categories.

Controlling the cost of damage (prevention)

Defining governance for implementation of Flood Risk Management Plans

Increasing Resilience (preparation)

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MEASURES

ID_M	Name of the objective	Name of the sub-objective	Name of measure	Explanation of measure	Type of measure	Location	Responsible authority(ies)	Prioritisation	"Status" of the measure	Cost and benefits of the measure(s)-	Other National Act under which the measure has been implemented (where relevant)	Time of implementation Before, During, After event	Investment costs (TL)	O&M costs (TL/year)	Total annual costs	Comments, source of costs information and data
1	Increase the safety of people	Ensure the adapted protection against flood in sensitive areas	kirazlikopru dam		Structural −2.1	Gokirmak river	DSI	very high	on going	cost= 46331000 tl	law on the establishment of DSI no: 6200	before	46.331.000	2.316.550	6.356.786	Investment cost (feasability study); life duration 50 years; OM cost = 5% of Inv. Cost

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MEASURES

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5	Develop knowledge on flood hazard and flood risks	Share knowledge between stakeholders and between different levels	National Water Information System to be established		Organizational framework 1.2	National	MoFWA	moderate (2014-2016)	ongoing (feasibility completed)	++	(Decree no 645)	before, during, after	340.000	17.000	175.613	

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MEASURES

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12	Increase the safety of people	Take advantage of natural function and green infrastructures	Forest management and upper basin rehabilitation	soil conservation, ranch improvement, forestration, erosion control, rehabilitation of destroyed forest areas	Non-Structural -2.3	all of the forest areas in the basin	DG Forestry	moderate	ongoing	++++	GD of Forestry related legislation	before		90.000.000		the works in the basin is considered to be completed in 10 years

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Project on Impacts of Climate Change on Water Resources

1. Preparation of climate change projections for all river basins.
2. Determination of the changes in the surface water levels and the ground water budget for all river basins,
3. Water budget /potential modeling studies in all river basins,
4. Analysis of water impacts to sectors namely drinking and potable water, agriculture, industry and ecosystem in 3 river basins.

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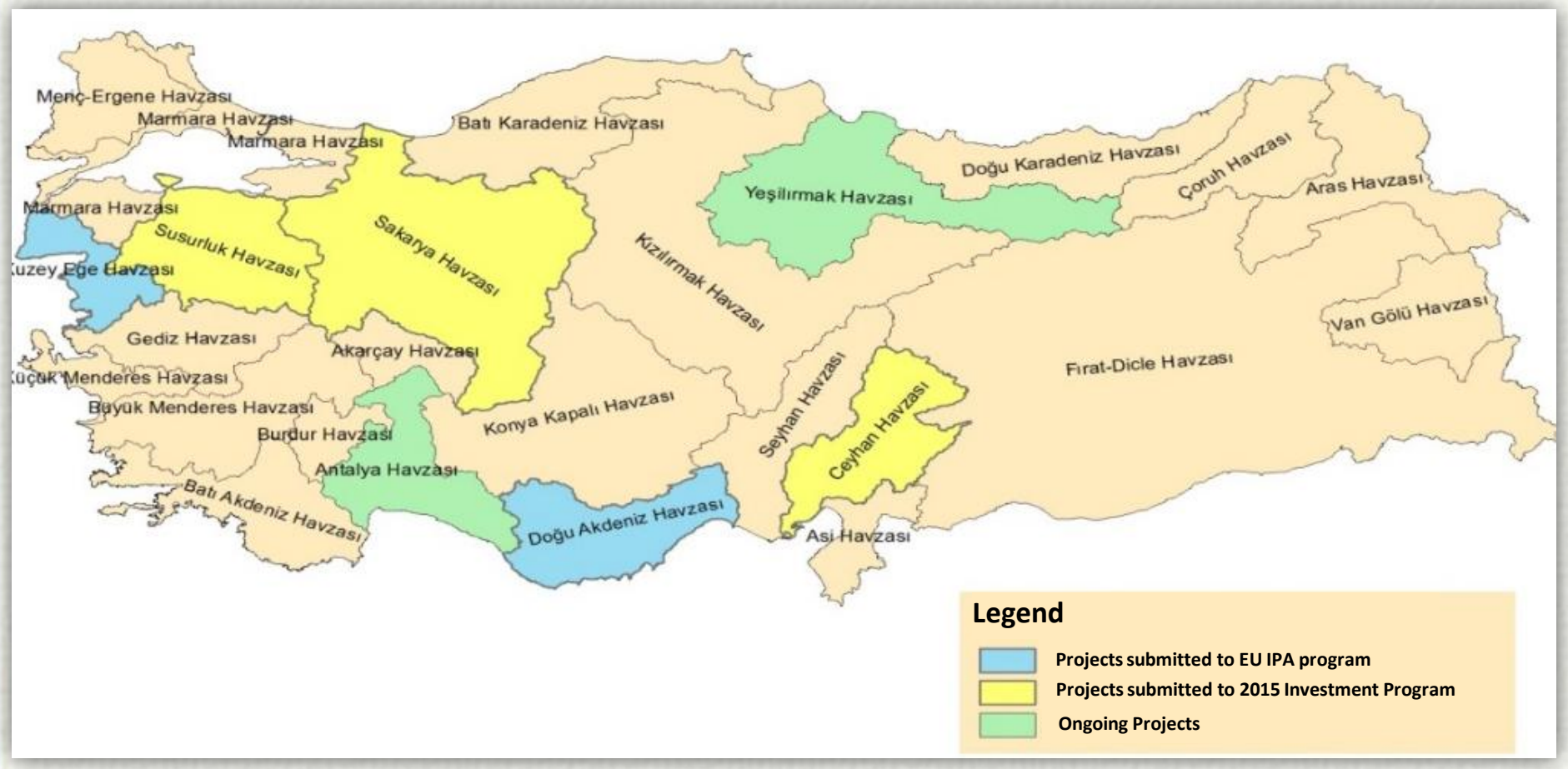
FLOOD MANAGEMENT PLANS

Preparation of Flood Management Plans are ongoing.



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Conclusion

Approach:

- Managing flood risks, not controlling floods
- Planning taking into consideration hydrological boundaries, not administrative
- Providing coordination of all activities and related institutions
- Providing active participation of all related institutions and also public
- Taking into account effects of climate change

Result:

- More effective use of financial and human resources
- More effective and sustainable Flood Risk Management

Thank You

Işıl SAKIN
Expert
DG WATER MANAGEMENT
Flood and Drought Management Department
isakin@ormansu.gov.tr