A Spatial Planning Tool for Local Authorities: Strategic Environmental Assessment

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Area: 814.578 km²
Population: 73,722,988 (December, 2010)
There are 81 administrative province
Strategic Environmental Assessment (SEA)

• SEA can be defined as a systematic process, evaluating the environmental, economic and social results of any suggested policy, plan or programme.

• SEA is developed as a more comprehensive evaluation system as a result of arising concerns related with the insufficiency of EIA carried at project level.
There are four phases in the governmental activities related to the decision-making procedure.

The development plans in Turkey include all these four phases. Among these phases, environmental assessment is only practiced at the project level. This solely constitutes one part of the Integrated Environmental Management.
The Current Status of SEA in Turkey

EIA is legal

Environmental Impact Assessment (EIA) has been applied to individual investments in Turkey since 1993

SEA is not legal

- Discussions and preparations was started about SEA regulation in 2000
- SEA draft regulation was prepared in 2005 and was prepared depending on the EU directive (SEA Directive 2001/42/EC)
- This draft is including only physical plans and programs.
- The Ministry is planning to enact this regulation end of this year.
- The scientific approach into the subject is very new in Turkey, it take time to answer the questions about how and in what fields to practice the subject
• The practices of SEA are closely related to the administration system, planning system and decision making procedure in central or local government in the countries.

• SEA practices and SEA procedures may change from country to country.

• The subjects that required strategic decision-making process have been gathered in five groups for Turkey by taking into consideration national and international SEA systems.
The subjects that required strategic decision making process have been gathered in five groups for Turkey

**National Development Plans (FYDPs) and Sectoral Plans:** Socio-economic plans including macro economic targets and sectoral development policies prepared by Prime Ministry State Planning Organization (SPO).

**Regional Development Plans:** Plans, aiming to improve the socio-economically underdeveloped regions, to provide the effective use of sources in the region and to improve income distribution in the country such as Southeastern Anatolia Project-SAP, Eastern Anatolia Project-EAP.

**Legal Regulations:** Laws and international convention for especially effective uses of natural sources such as the Forest Law, Tourism Encouragement Law, Coast Law.

**Privatization Policies:** Privatization activities have been in progress with the effect of laissez-faire economy since 1985 in Turkey. Especially privatization policy in the energy and tourism sectors are effective on the environment.

**Physical Plans:** Urban developmental plans and other land use plans, Environmental plans prepared by the Ministry of Environment and Forestry, urban master plans by municipalities, Infrastructure plans, tourism plans.
It is required to answer primarily two basic questions in order to approach SEA practice on urban development plans.

- **When?**
  - In which phase to practice SEA?

- **How?**
  - How to conduct SEA?

This research project aims that analyzing,
WHEN - -SEA integration into the decision-making process of urban planning.
HOW- -The practicability of SEA into the Urban Development Plans prepared by local governments
The research is based on two parts.

In the first part:

A procedure about how to practice SEA at the institutional level according to the urban development plans is offered.

The basic steps were determined in legal process for SEA applications.

In the second part:

SEA practice model for urban development plans is developed in the case of Adana City Plan.

In the direction of the results of studies conducted in the first part, a proposal model was developed.
THE METHOD OF THE FIRST PART

1. Stage

Theoretical Framework and Scope of SEA

Current situation of SEA

Importance and necessity of SEA for Turkey

Subjects will be scoped by SEA

2. Stage

Urban Planning System in Turkey

The process of preparation of urban development plans

Policies in decision-making process

3. Stage

Implementation Opportunities of SEA on Development Plans

Examing the relationship between the SEA and development plans

the principles of SEA for development plans
FIRST PART: SEA Integration to Urban Planning System

• Our findings related to first part of project are presented as follows subjects:
  – The phases of the SEA process on Urban Development Plans
  – The issues to be solved for SEA process
  – Tools to be used on SEA process

• The main issues taken into account to reach these results:
  – The theoretical frame of SEA
  – The administrative system in Turkey
  – Planning hierarchy
  – The perspectives of the institutions responsible for the planning (questionnaire-interview)
  – The content of the urban development plans
  – Draft SEA Regulation in Turkey.
  – The SEA Directive of the European Union
The phases of the SEA process

1. SCREENING
   - Responsible: Ministry of Environment and Forest (MEF)
   - According to the screening method (appendix II), the Ministry of Environment and Forest decides whether SEA will be applied on a plan or program
   - Consultation of the related institutions
   - Information of the public

2. SCOPING
   - The scoping document is prepared by considering the suggestions about public participation
   - The scope determination meeting is held in order to get views about the format of the SEA report (Observer: Public, MEF)
   - Consultation of the MEF
   - Consultation of the related institution

3. SEA-REPORT
   - The format of the SEA report is determined
   - According to this format, the authorised institution prepares the SEA report.

4. QUALITY-CONTROL
   - The second public participation meeting is held to get views about the prepared report (Observer: Public, MEF)
   - Authorised institution completes the report by taking into account the views in the meeting and presents it to MEF
   - The MEF analyses the report and shares the views with the authorised institution
   - The authorised institution completes the missing points.

5. DECISION-MAKING
   - The authorised institution decides on the plan or program

6. MONITORING
   - The authorised institution presents the confirmed report to the MEF with the viewing and acknowledgement report

In this project the content of this 6 phases were formed according to
- the responsibility of municipalities,
- the urban plan preparation process and
- the draft regulation on SEA

Taking into account the suggestions about public participation, the scoping document is prepared by considering the suggestions about public participation.

According to the screening method (appendix II), the Ministry of Environment and Forest decides whether SEA will be applied on a plan or program.

The format of the SEA report is determined.

The second public participation meeting is held to get views about the prepared report.

Authorised institution completes the report by taking into account the views in the meeting and presents it to MEF.

The MEF analyses the report and shares the views with the authorised institution.

The authorised institution decides on the plan or program.

The authorised institution presents the confirmed report to the MEF with the viewing and acknowledgement report.
THE SECOND PART: The Case Study

Adana Urban development plan approved by municipality in April 2008 cover 32,500 ha area

Location:
36030′-38023′
kuzey enlemleri ile 34046′-36026′
doğu boyamları

Population:
1,530,257 plan area
2,006,650 adana city
THE METHOD OF SECOND PART

Status of Project Area (Plan Area)

<table>
<thead>
<tr>
<th>Natural Factors</th>
<th>Socio-Economic</th>
<th>Land Uses</th>
<th>Current Pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Topography</td>
<td>-Demographic structure</td>
<td>-Housing</td>
<td>-Air pollution</td>
</tr>
<tr>
<td>-Soil</td>
<td>-Education</td>
<td>-Agriculture</td>
<td>-Water pollution</td>
</tr>
<tr>
<td>-Water</td>
<td>-Economic status</td>
<td>-Recreation</td>
<td>-Noise pollution</td>
</tr>
<tr>
<td>-Climate</td>
<td>-User preferences</td>
<td>-Industry</td>
<td>-Visual pollution</td>
</tr>
<tr>
<td>-Flora-Fauna</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Map of sensitive areas

Map of population density

Distribution of pollutant factors

Pollution maps

Determination of risky areas

Expectations-predictions

Population

Land Uses

Effects

Evaluation of Applicability

- Assessment Results
- Basic Planning Criteria
- Planning Instruments

SECTORS
- Housing
- Transportation
- Industry
- Agriculture

POLÍTICAL
- Administrative structuring
- Related national and international legislation

LOCAL
- Regional investments
- The selection of the appropriate fields belonging to investment
- Local government
- Provincial agencies

- Statistical analysis
- Single and multiple regression analysis
- GEO statistic
- IPCC method
- Proposal plans

TOOLS
- Topographic structure
- Climatic data
- Emission measurements
- Statistical information
- GIS
- Legal regulations and limit values
- Questionnaire work
- Natural increase correlation method
Risk Classification

Major Soil Group

Land Capability Classes

Slope Groups

Elevation Groups

Soil Risk Classification

Topography Risk Classification

Ecology

Risk Classification
Natural Structure
Risk Classification of Natural Structure

Current Land Use Risk Classification
Creating Risk Result Map and Overlay of Maps and GIS analyzing

- Multy criteia analysis
- Weighting risk pointing has been realized according to each effect level and risk degree
- Questionnaire was made for weighting risk pointing with experts and
- For final point, AHP (Analitik Hiyerarşi Prosesi) was used
To create the result map, risk degrees and effect levels of all inputs multiplied. With adding all factors risk degrees in database ArcView 9.2, obtained results divided in 3 groups.

How can be used this map in the SEA practice

Risk map can be used basic planning decisions
land use decision
density
direction of growth
transportation
<table>
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<tr>
<th>Phases</th>
<th>Ancillary Tools</th>
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<tr>
<td><strong>1-Determination of the Present Situation</strong></td>
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</tr>
<tr>
<td>Land uses</td>
<td>Statistical data</td>
</tr>
<tr>
<td>Sector production-consumption situation</td>
<td></td>
</tr>
<tr>
<td>Natural resources used by sector</td>
<td></td>
</tr>
<tr>
<td>Transportation, recreation, housing, trade</td>
<td></td>
</tr>
<tr>
<td>building..)</td>
<td></td>
</tr>
<tr>
<td>The pollution</td>
<td>Meteorological and topographic data</td>
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<tr>
<td>Pollution maps</td>
<td></td>
</tr>
<tr>
<td>The first category is based on the sector, sector practice and the analysis of the available situation of affected factors.</td>
<td></td>
</tr>
<tr>
<td>Population of research area</td>
<td>Statistical data</td>
</tr>
<tr>
<td>Population density, urban and rural population</td>
<td></td>
</tr>
<tr>
<td>Limit values</td>
<td></td>
</tr>
<tr>
<td>Sensitive Regions and Protected area in research area</td>
<td>Protection statutes</td>
</tr>
</tbody>
</table>
# SEA On Urban Development Plans

## 2- Proposed Scenarios for the Future

| Population | Population growth | Methods of population prediction |

The following phases include future suggestions and the scenarios.

**FUTURE**

| Land uses | Effects | Impacts caused by sector |

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### 3- Evaluation applicability

**The Results**  Co-evaluation of subjects in the 1. and 2.phases

**Basic Evaluation**  Criteria determining the general frame of the policy

**Activity determination for the practice of criteria**

**Policy Tools**  Sectoral, Political, Local  Local governments and their policies

Administrative structuring

National and international law

Lastly, the findings from these two phases are evaluated and planning criteria are set.
Thank you
nursay@cu.edu.tr
# Planning Hierarchy in the country

<table>
<thead>
<tr>
<th>Planning Type</th>
<th>Frame-Scale</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOCIAL-ECONOMIC PLANS</strong></td>
<td>Written statements-country plan</td>
<td>-Macro-economic targets, -Sectoral aims, objectives and policies, -Social development aims</td>
</tr>
<tr>
<td>National Development Plan <em>(Five-Year Development Plan)</em></td>
<td>Region - 1/500000, 1/100000 Metropolitan - 1/50 000</td>
<td>Superior physical plans or High-level physical plans</td>
</tr>
<tr>
<td><strong>PHYSICAL PLANS</strong></td>
<td></td>
<td></td>
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<tr>
<td>Regional Master Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Plan</td>
<td>Sub region, province - 1/2000, 50000, 100000 Urban-1/2000, 5000 Urban -1/1000</td>
<td>Local physical plans or Local development plans</td>
</tr>
<tr>
<td>Urban Master Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation Plan</td>
<td>Subregion-1/1000, 5000 Urban-1/5000 Rural-1/1000</td>
<td>Special aimed plans</td>
</tr>
<tr>
<td>Tourism development plan</td>
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<tr>
<td>Reclamation development plan</td>
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<tr>
<td>Rural development plan</td>
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## Main Stages of The Regulative Plus Practical Process of SEA

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</tr>
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**TODAY**

The first category is based on the sector, sector practice and the analysis of the available situation of affected factors.

**FUTURE**

The following phases include future suggestions and the scenarios.

2- Proposed Scenarios for the Future

<table>
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<th>Economic Development</th>
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<tr>
<td>The Development of the Sector</td>
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<td>Economic Development</td>
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</tr>
<tr>
<td>Projection of Population</td>
<td>Population growth</td>
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<tr>
<td>Impact Assessment</td>
<td>Impacts caused by sector</td>
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<td>Projected Parameters</td>
<td>Methods of population prediction</td>
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3- Evaluation applicability

<table>
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**PRECAUTION**

Lastly, the findings from these two phases are evaluated and planning criteria are set.