- Ms Zoe PAPASIOPI
Head of Planning, Project Finance
and Project Controls Division of
EGNATIA ODOS A.E.

- Mr Vassilys Fourkas
Head of Observatory Unit, EGNATIA ODOS A.E.

# Spatial Impact Observatory of the Egnatia Motorway

## Greece


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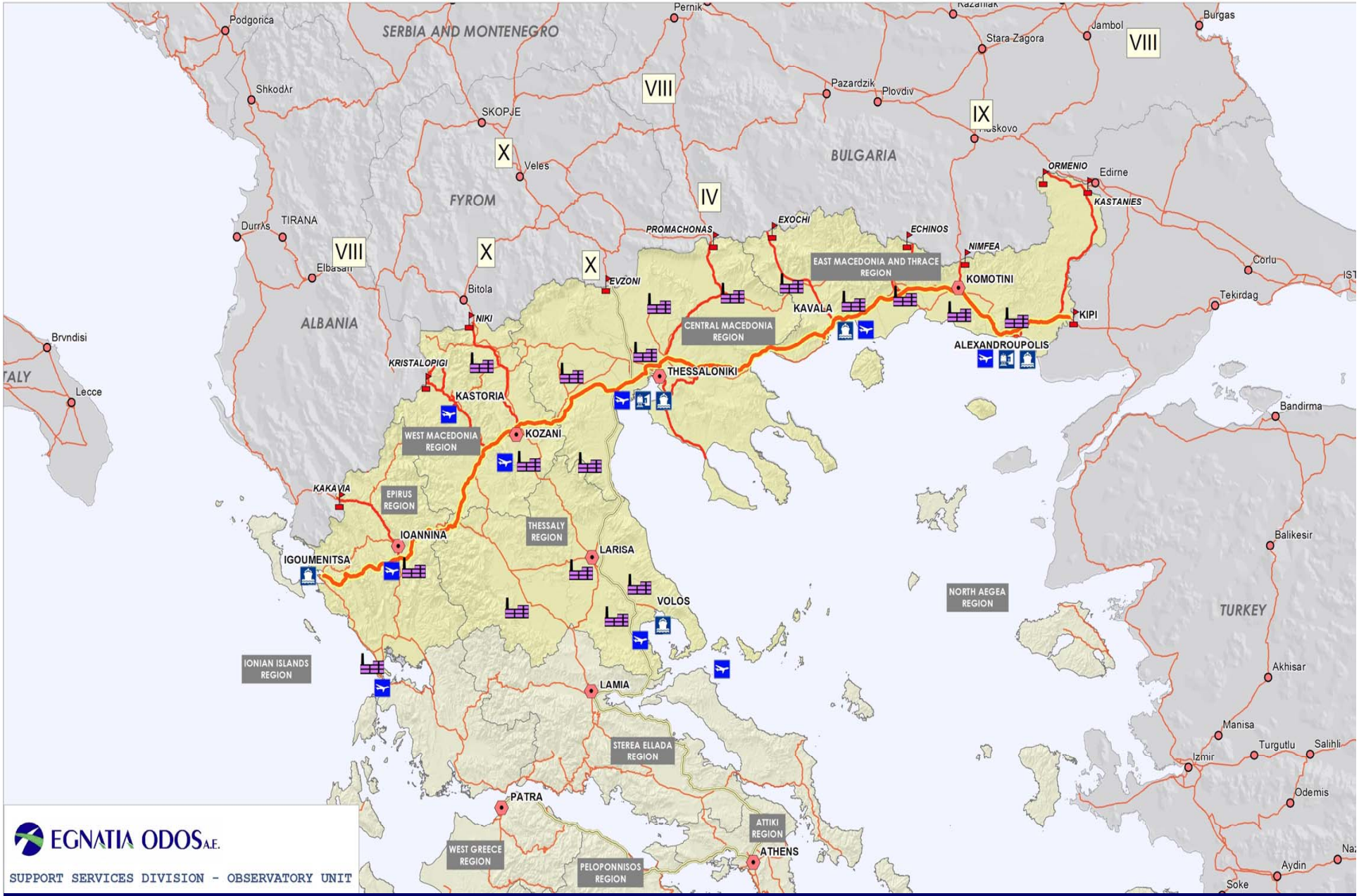
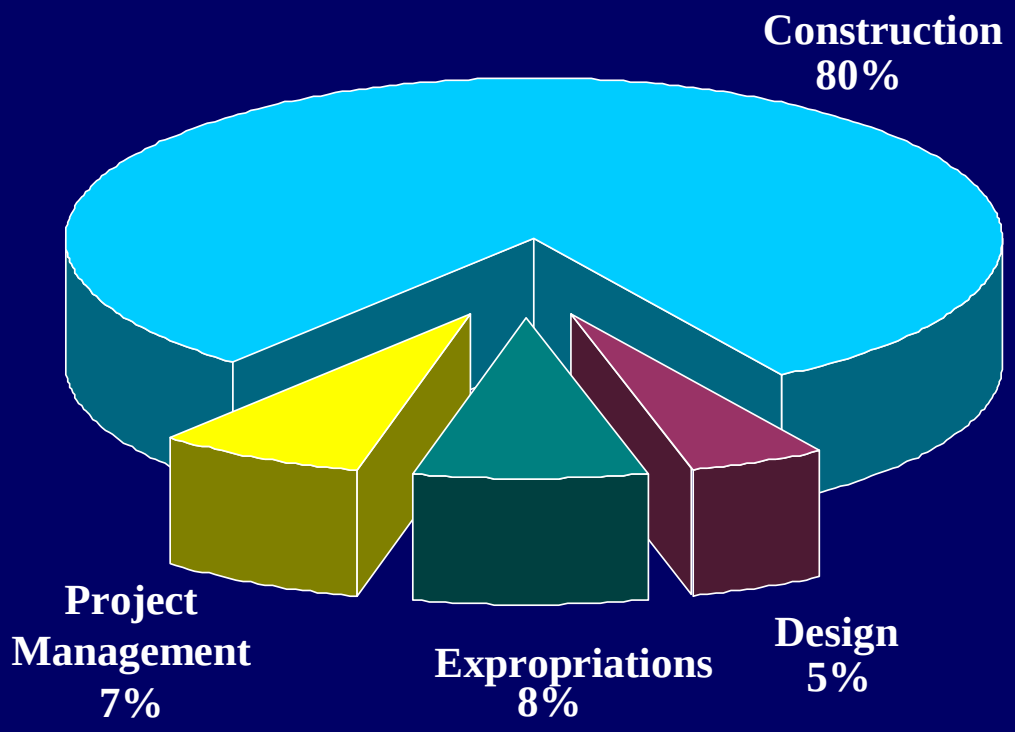
Egnatia Odos Observatory


SERBIA AND MONTENEGRO
FYROM
ALBANIA
BULGARIA
TURKEY
Podgorica
Shkodër
SKOPJE
Veles
Pernik
Pazardzik
Plovdiv
Stara Zagora
Jambol
Burgas
Durrës
TIRANA
Elbasan
Bitola
Brvndisi
Lecce
VIII
X
IV
IX
PROMACHONAS
EXOCHI
ECHINOS
ORMENIO
Edirne
KASTANIES
NIMFEA
KOMOTINI
KAVALA
KIPI
ALEXANDROUPOLIS
EAST MACEDONIA AND THRACE REGION
CENTRAL MACEDONIA REGION
EVZONI
NIKI
KRISTALOPIGI
KASTORIA
THESSALONIKI
KOZANI
WEST MACEDONIA REGION
KAKAVIA
EPIRUS REGION
IOANNINA
IGOUMENITSA
THESSALY REGION
LARISA
VOLOS
NORTH AEGEA REGION
IONIAN ISLANDS REGION
LAMIA
STEREA ELLADA REGION
PATRA
WEST GREECE REGION
PELOPONNISOS REGION
ATTIKI REGION
ATHENS
Corlu
Tekirdag
Bandirma
Balikesir
Akhisar
Manisa
Turgutlu
Salihli
Izmir
Odemis
Aydin
Soke
EGNATIA ODOS A.E.
SUPPORT SERVICES DIVISION - OBSERVATORY UNIT

# PROJECT IDENTITY

- **AXIS LENGTH:** 670 km
  (From Igoumenitsa through to Kipi)
- **TECHNICAL FEATURES:** Dual carriageway with a central reserve.
  Two traffic lanes per carriageway plus a hard shoulder.
- **STANDARD CROSSSECTION:** 24.5 m
- **MAIN ENTRANCE– EXIT JUNCTIONS:** 50
- **OVERBRIDGES / UNDERPASSES:** 353
- **SERVICE ROADS** 720 km
- **TOTAL BRIDGE LENGTH** 40 km
- **TOTAL TUNNEL LENGTH** 2x45 km

# COST ANALYSIS




***TOTAL COST OF MAIN AXIS : 5,900 M€ (with VAT)***

***Construction Cost : 5,000 M€***



EGNATIA ODOS A.E.

Egnatia Odos Observatory

# EGNATIA MOTORWAY
# PROJECT STATUS – COST

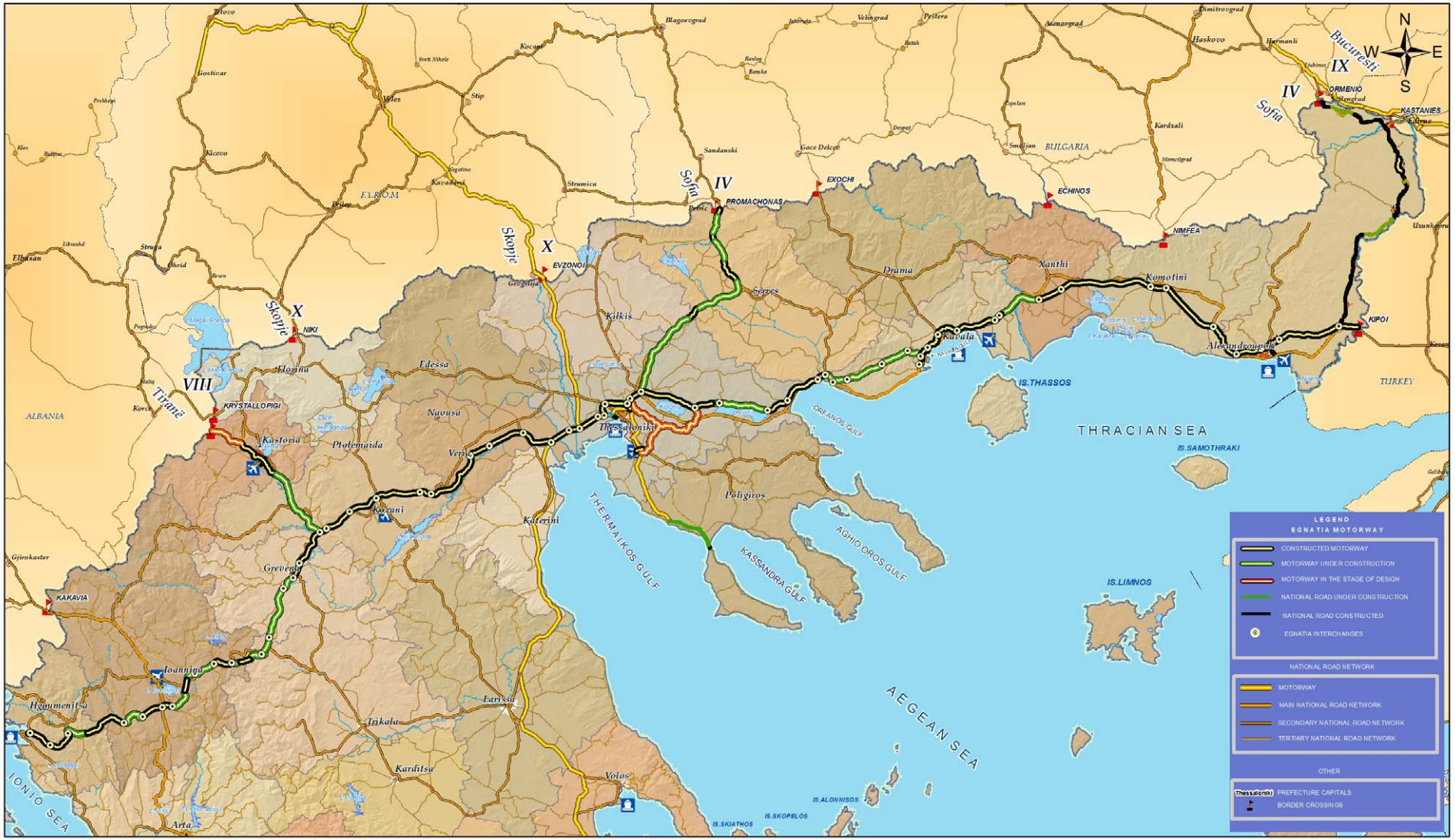
| | Length | Construction Cost | Total Cost |
|---|---|---|---|
| | (km) | M€ (VAT incl.) | M€ (VAT incl.) |
| Sections constructed during previous periods before **1994** | 25 | | |
| **PROJECTS AFTER 1997** | | | |
| • Completed and **opened to traffic** (September 2006) | 428 | 2,354 | 2,800 |
| • Under construction (to be open to traffic during 2006) | 46 | 2,646 | 3,100 |
| • Other sections under construction | 171 | | |
| **TOTAL AXIS** | 670 | 5,000 | 5,900 |

# VERTICAL AXES

# PROJECT STATUS - COST

| | Length (Kms) | Total Cost M€ (VAT incl.) |
|---|---|---|
| **PROJECTS COMPLETED BEFORE 1994** | | |
| • Open to traffic | 24 | |
| • Open to traffic – to be upgraded / 4th CSF | 50 | 170 |
| **PROJECTS AFTER 1997 - Egnatia Odos A.E.** | | |
| • Completed and **opened to traffic** (December 2005) | 83 | 235 |
| • Under construction | 143 | 585 |
| **TOTAL** | 300 | 990 |

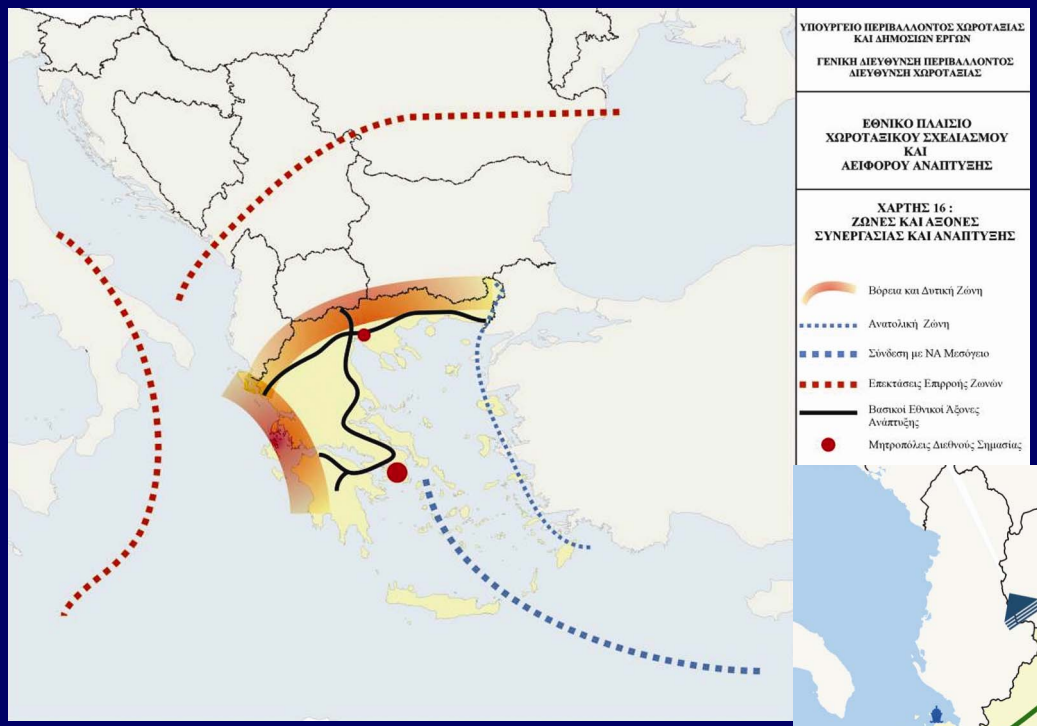
# EGNATIA MOTORWAY & VERTICAL AXES
# Project status, September 2006

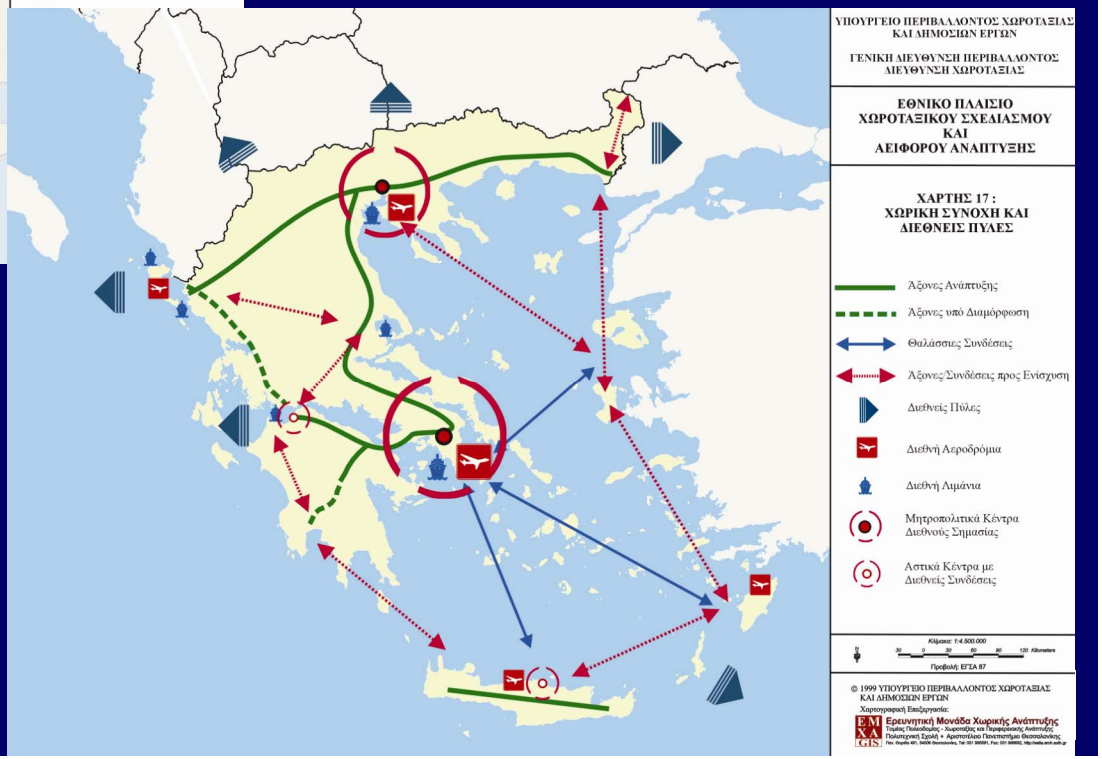



EGNATIA ODOS A.E.
CONTRACTS AND PROJECT SERVICES DEPARTMENT
G.I.S. UNIT

REPORT DATE : 1/9/2006

# Egnatia Odos Motorway:
## *axis of growth and collaboration*




EGNATIA ODOS A.E.

# Egnatia Odos Observatory

*monitoring and assessing the spatial impacts of the motorway*

The Observatory develops a methodological and operational framework, which applies well-documented scientific methods and modern GIS & Internet infrastructure, in order to collect and provide reliable and updated information and data for the monitoring and assessment of the Egnatia Odos Motorway's spatial impacts. This information concerns:

- the mobility in and accessibility to regions, urban centres, markets, and services,
- the development level, the cohesion degree, the competitiveness, and the intraregional inequalities,
- the building development and the networking of urban centres,
- the properties of the transport system and the operation of the road network, and
- the quality of the environment.

# Egnatia Odos Observatory

• The **INDICATORS OF SPATIAL IMPACTS** monitored by the Observatory fall into three major groups:

(a) *Socio-Economic*,

(b) *Environmental, and*

(c) *Transport*.

In total, there are approximately 50 indicators that are updated and appropriately adapted according to the scientific and operational requirements.

• **IMPACT ZONES**

# Egnatia Odos Observatory


| Socio-economic indicators |
|---|
| **Basic** |
| Benefited population |
| Market size (GDP) |
| City gravity |
| Growth and prosperity level (GDP per head) |
| Unemployment rate |
| **Framework** |
| Accessibility of transport modes |
| Accessibility of industrial areas |
| Accessibility of sites of cultural & tourist interest |
| Population change within impact zones |
| Urban population changes |
| Hierarchy of urban centres |
| Population density |
| **Special** |
| Composition of production by industry sector (GVA) |
| Labour force |
| Composition of employment by industry sector |
| Business location |
| Foreign trade |

| Environmental indicators |
|---|
| **Basic** |
| Noise pollution |
| Tunnel air quality |
| Cohesion - fragmentation of settlements |
| **Framework** |
| Population no longer exposed to noise pollution |
| Landscape restoration |
| Fragmentation of natural areas |
| Pressure for land use change |
| Proximity to conservation areas |
| **Special** |
| Air pollution |
| Crossings with surface waters |
| Pattern of use of combined modes of transport |

| Transport indicators |
|---|
| **Basic** |
| Traffic volumes (AADT) |
| Traffic composition |
| Average occupancy rate |
| Travel speed |
| Travel time |
| Human movements and commuting |
| Commercial transportaion |
| Time distance between towns and terminal stations |
| Generalized cost of transport |
| Road safety |
| **Framework** |
| Traffic capacity |
| Level of service |
| Induced traffic |
| Patterns of mobility at border stations |
| Combined transport modes |
| Service Stations |
| Changes in residential areas |
| Changes in the spatial patterns of industrial development |
| Change in the value of road side plots |
| **Special** |
| Trip generation rates due to special land uses |
| Change in the choise of locations for dwelling purposes (residential) and occupational purposes (workplace) |
| Changes in the modal split |

# Egnatia Odos Observatory: RESULTS

***Current conditions and the initial spatial impacts in the Regions on the path of Egnatia motorway***

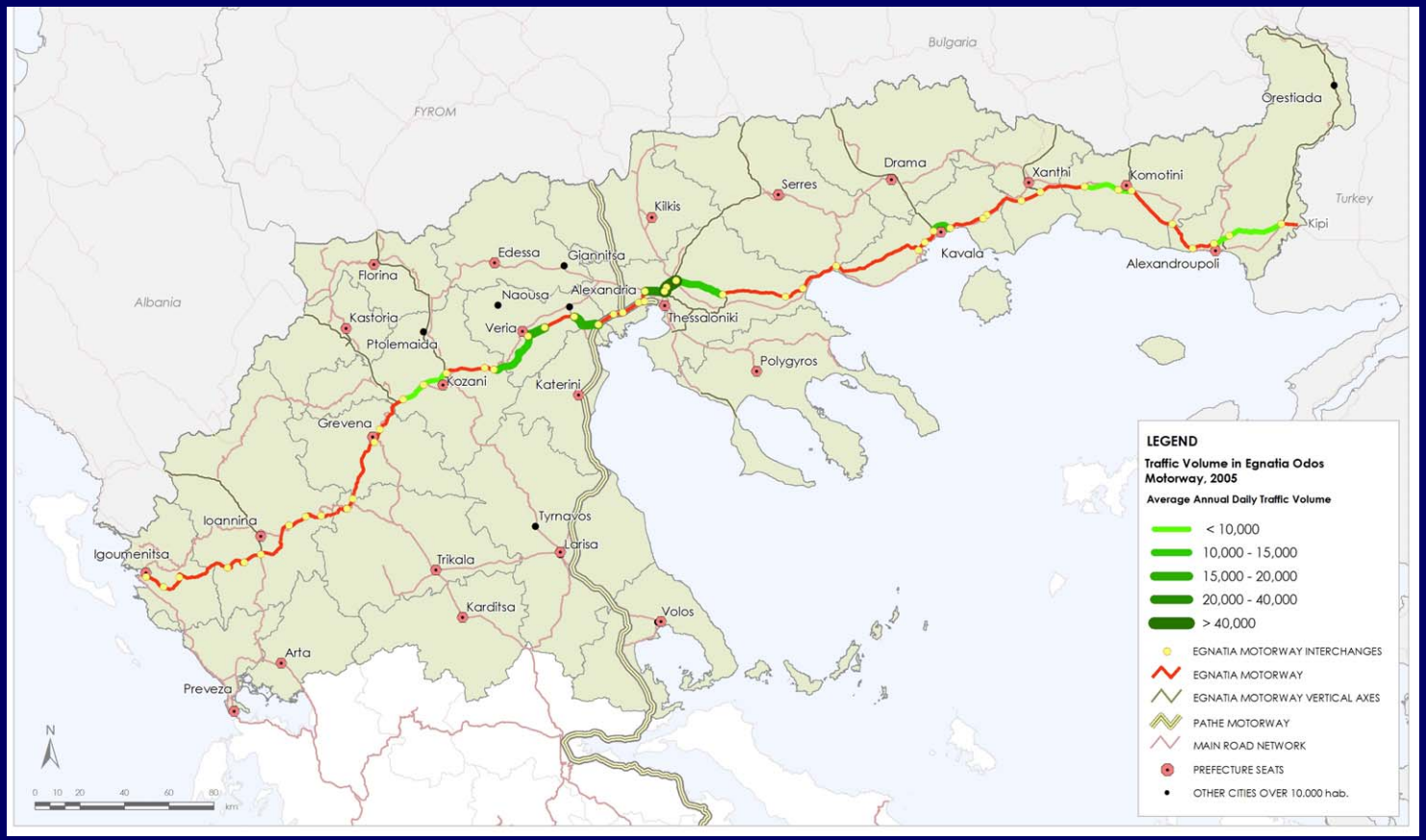
The Impact Zone of interest consists of five of the Regions of Greece (Epirus, Thessaly, Western Macedonia, Central Macedonia, Eastern Macedonia & Thrace) crossed by the motorway and its vertical axes, and represents:

- 50% of the Greece's total area,
- 36% of the Greek population,
- 33% of the country's total GDP,
- 72% of EU25 average GDP per head,.
- 35% of the country's workforce,
- 32% of the country's production (GVA),
- 41% of the country's exports,
- 60% of the country's total energy production.

# Egnatia Odos Observatory: RESULTS

mobility - accessibility

- The highest traffic volumes (54.100 AADT) were recorded along the sections in the outer area of Thessaloniki.



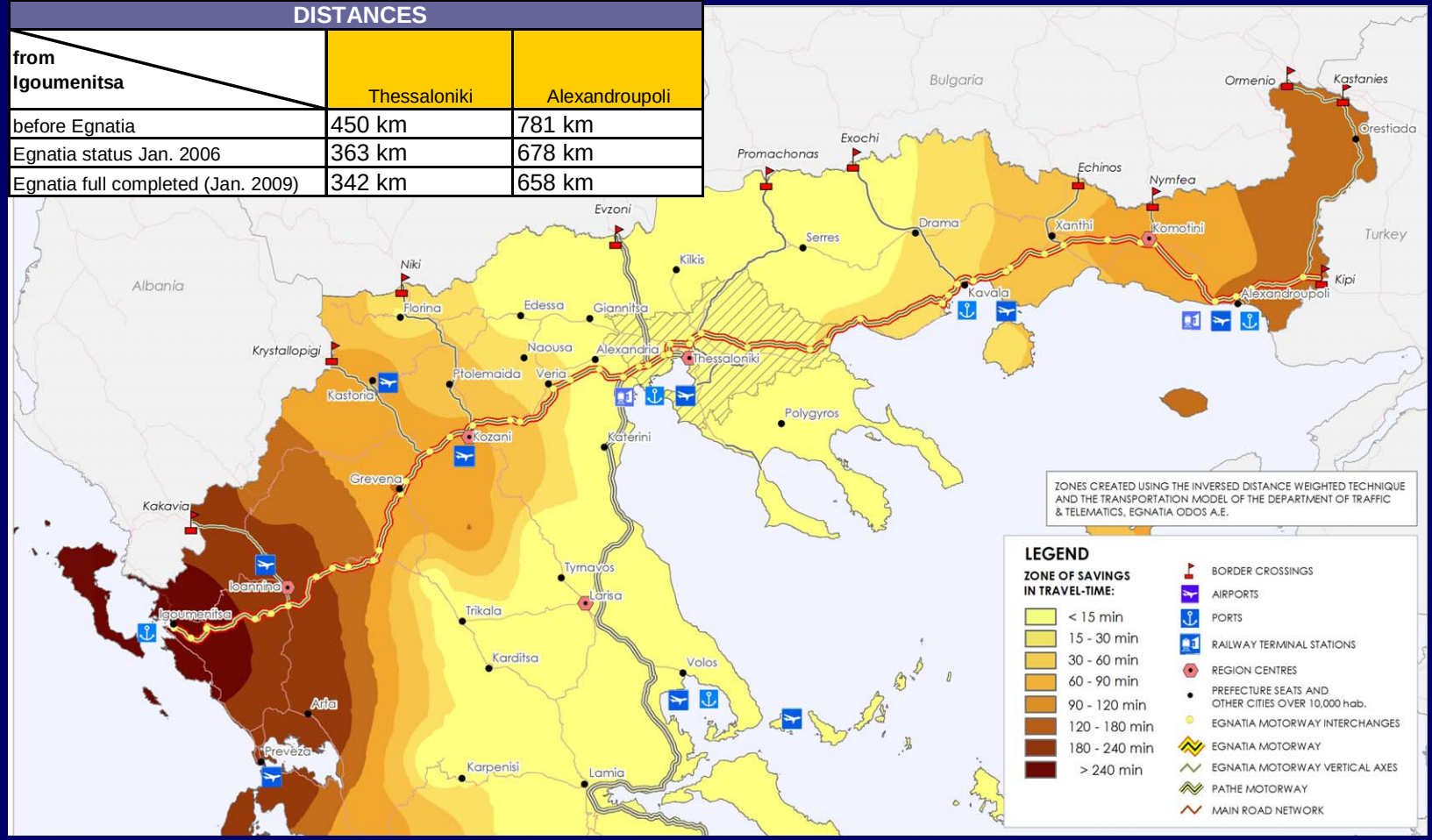

- Composition of traffic: 80-90% are passenger cars or similarly sized vehicles.

# Egnatia Odos Observatory: RESULTS

mobility - accessibility

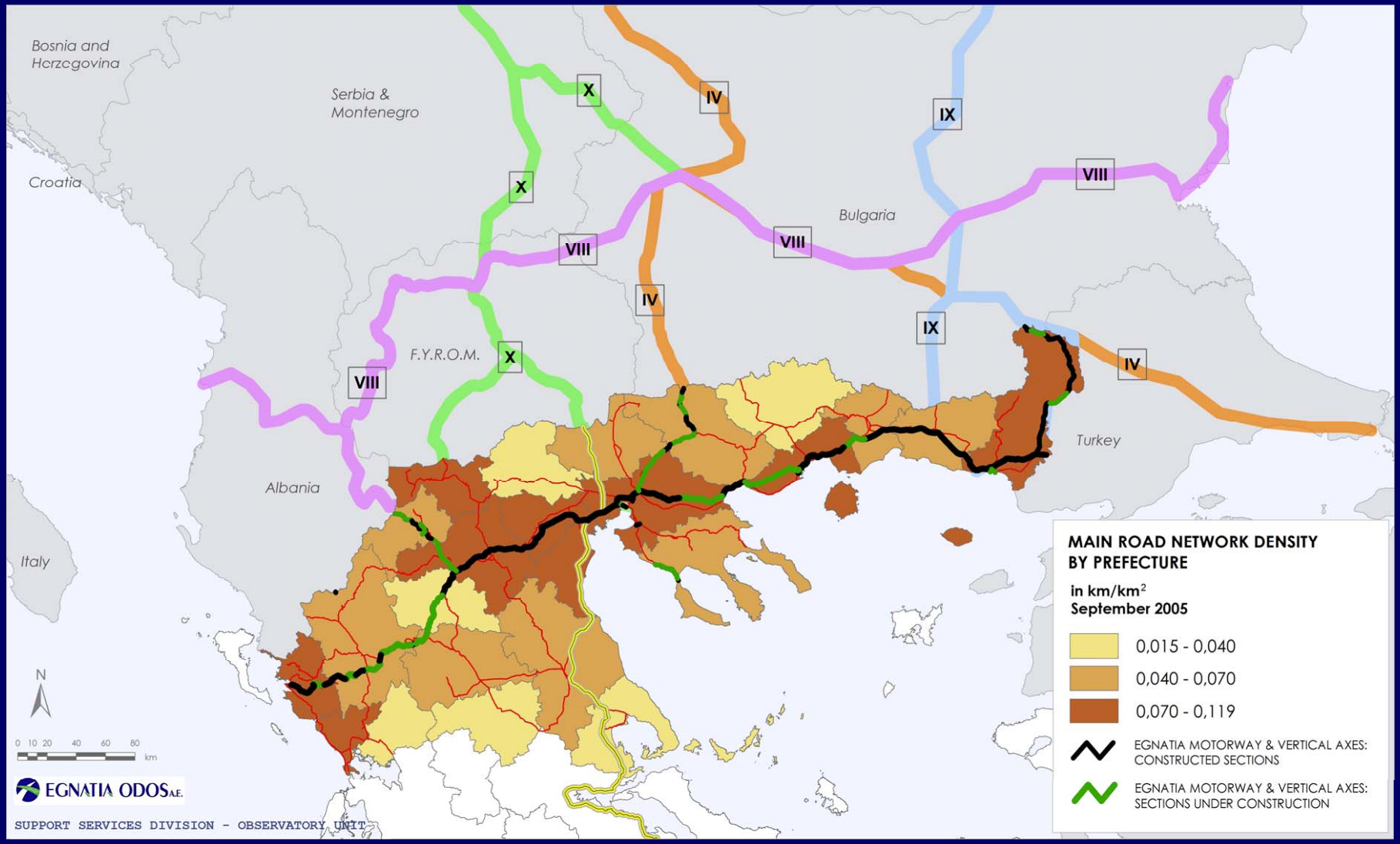
## travel-time savings

| DISTANCES | | |
|---|---|---|
| from Igoumenitsa | Thessaloniki | Alexandroupoli |
| before Egnatia | 450 km | 781 km |
| Egnatia status Jan. 2006 | 363 km | 678 km |
| Egnatia full completed (Jan. 2009) | 342 km | 658 km |



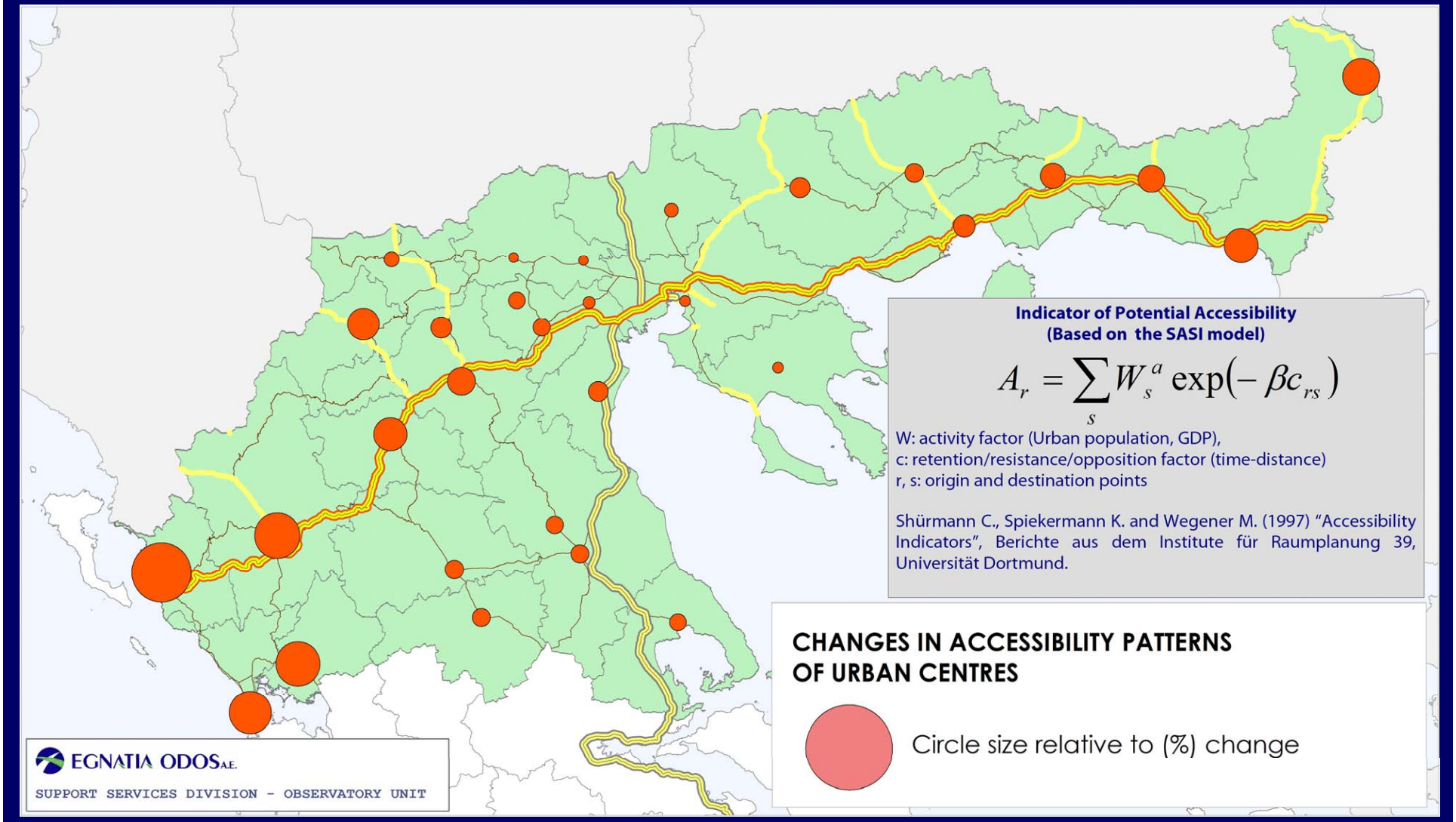
# Egnatia Odos Observatory: RESULTS

mobility - accessibility



# Egnatia Odos Observatory: RESULTS

mobility - accessibility



# Egnatia Odos Observatory: RESULTS

development - cohesion

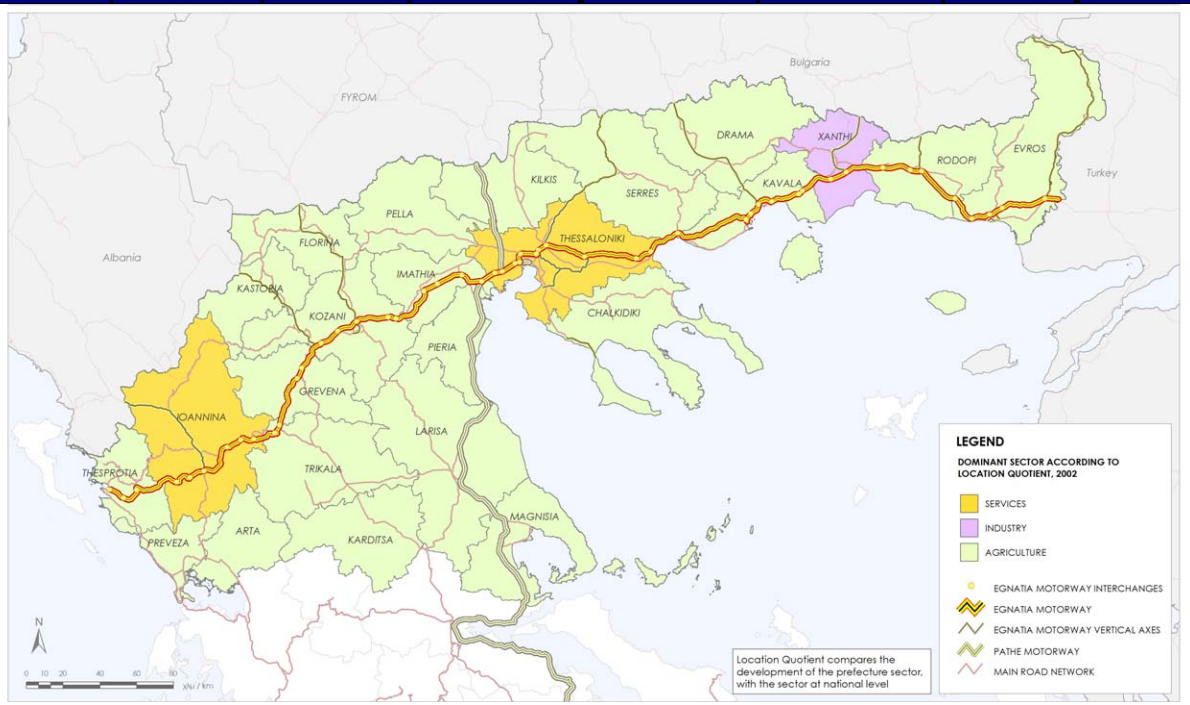

| | GDP per head in Euro | Convergence with the average GDP per head in EU 25 | Annual rate shift 2000-2003 |
|---|---|---|---|
| EU 25 | 21,740.60 | 100 % | 1,02% |
| Greece | 14,110.10 | 81% | 4,21% |
| *Impact Zone IV* | *12,575.02* | *72%* | *3,65%* |
| Evros (Alexandroupoli) | 11,897.20 | 68% | 3,07% |
| Thessaloniki | 15,710.30 | 90% | 2,49% |
| Thesprotia (Igoumenitsa) | 11,072.70 | 64% | 6,29% |

# Egnatia Odos Observatory: RESULTS

development - cohesion

**Composition of production (Gross Value Added – GVA), 2003**

| Region/ Prefecture | Agriculture | | | Industry | | | Services | | |
|---|---|---|---|---|---|---|---|---|---|
| | (%) in national GVA | (%) in regional GVA | Annual rate shift 2000-2003 | (%) in national GVA | (%) in regional GVA | Annual rate shift 2000-2003 | (%) in national GVA | (%) in regional GVA | Annual rate shift 2000-2003 |
| Greece | 100.00% | 6.77% | 2.11% | 100.00% | 22.00% | 5.74% | 100.00% | 71.23% | 4.65% |
| Impact Zone IV | 50.15% | 10.54% | 1.68% | 32.82% | 22.40% | 5.43% | 30.33% | 67.05% | 4.09% |
| Evros (Alexandroupoli) | 3.59% | 21.42% | -2.01% | 1.08% | 20.96% | 4.29% | 0.92% | 57.62% | 4.83% |
| Thessaloniki | 4.17% | 2.52% | 1.31% | 11.24% | 22.09% | 2.39% | 11.85% | 75.39% | 3.99% |
| Thesprotia (Igoumenitsa) | 0.52% | 11.35% | 0.94% | 0.08% | 5.84% | 8.38% | 0.36% | 82.81% | 6.83% |





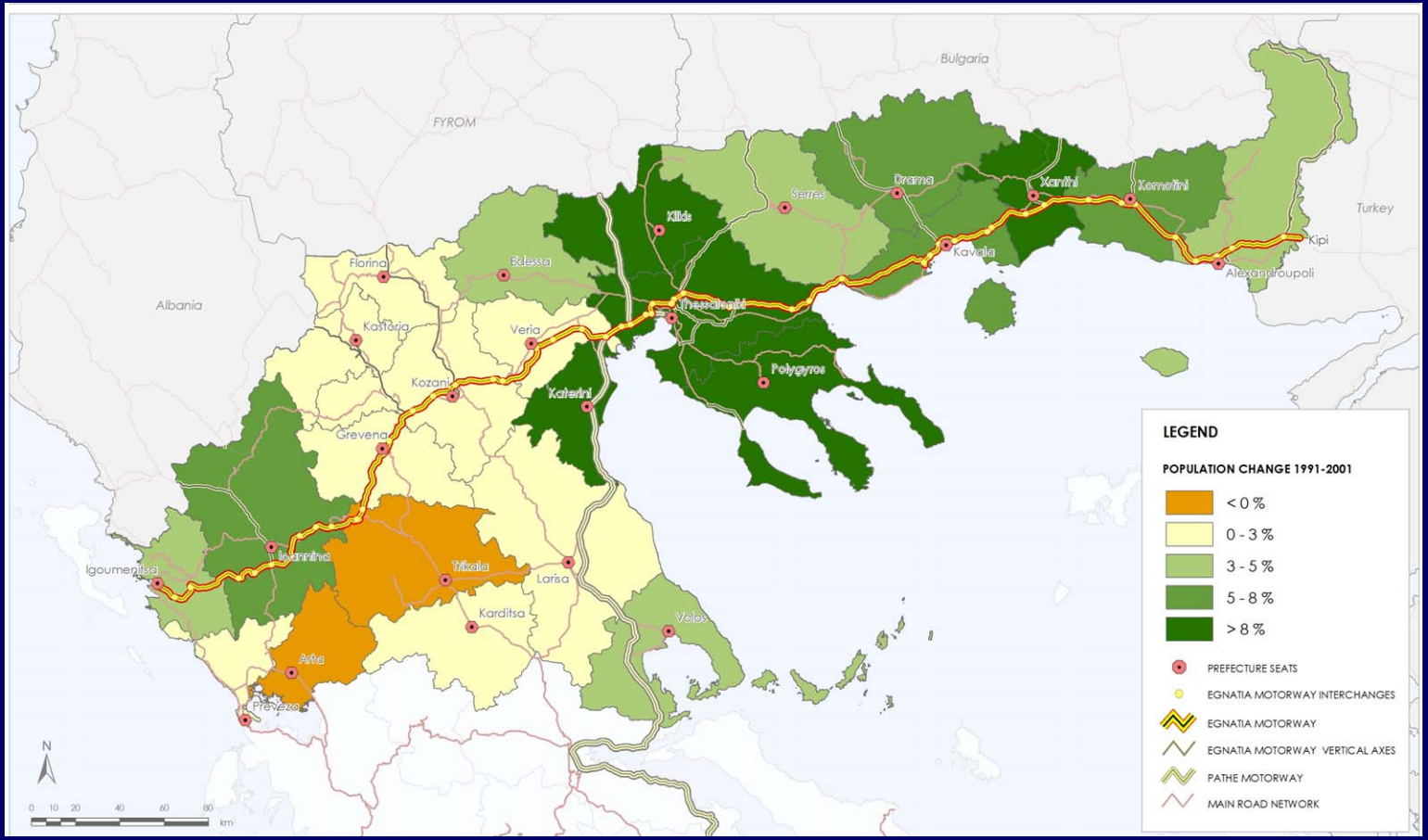

EGNATIA ODOS A.E.

Egnatia Odos Observatory

# Egnatia Odos Observatory: RESULTS

balance - networking

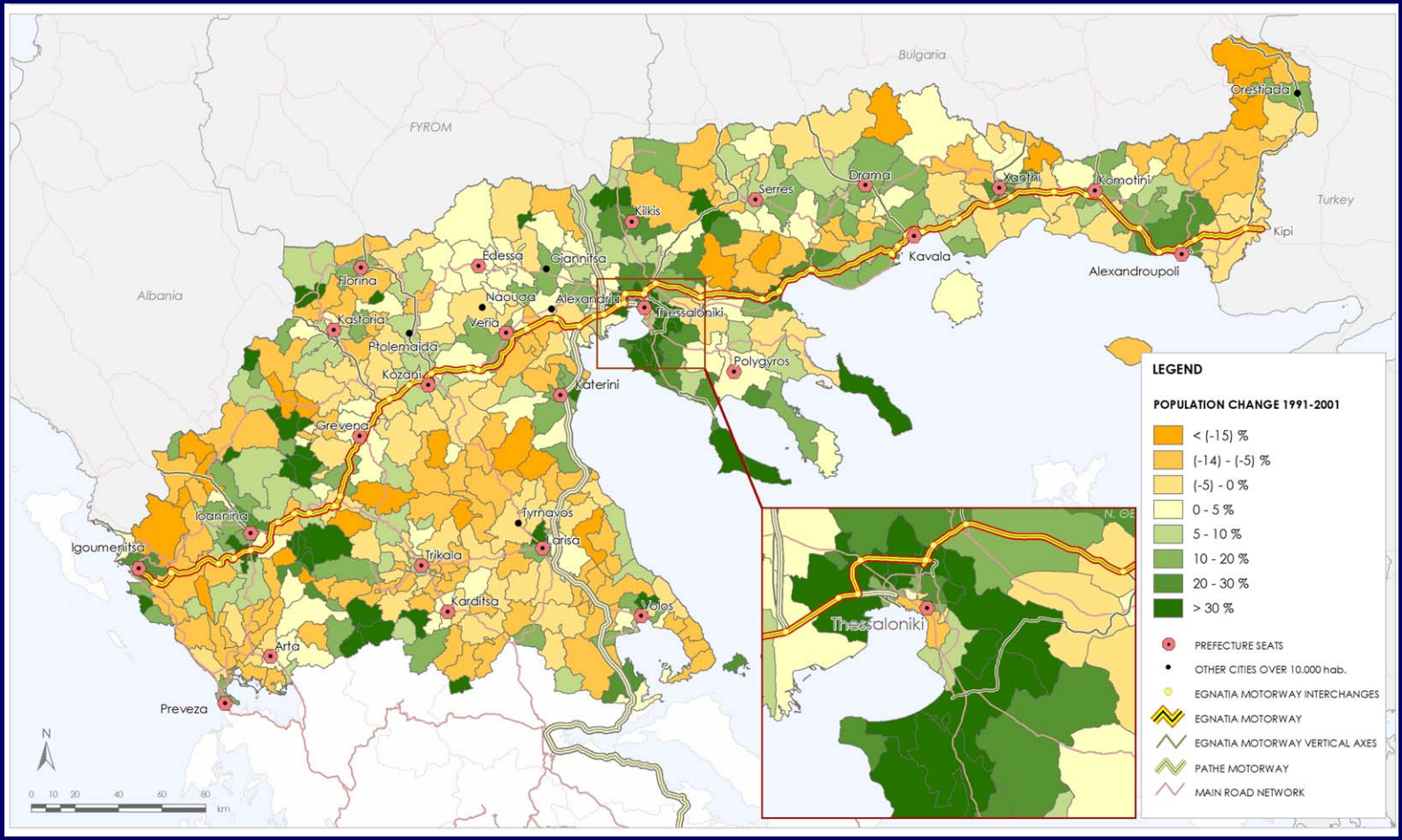
**population changes**



# Egnatia Odos Observatory: RESULTS

balance - networking

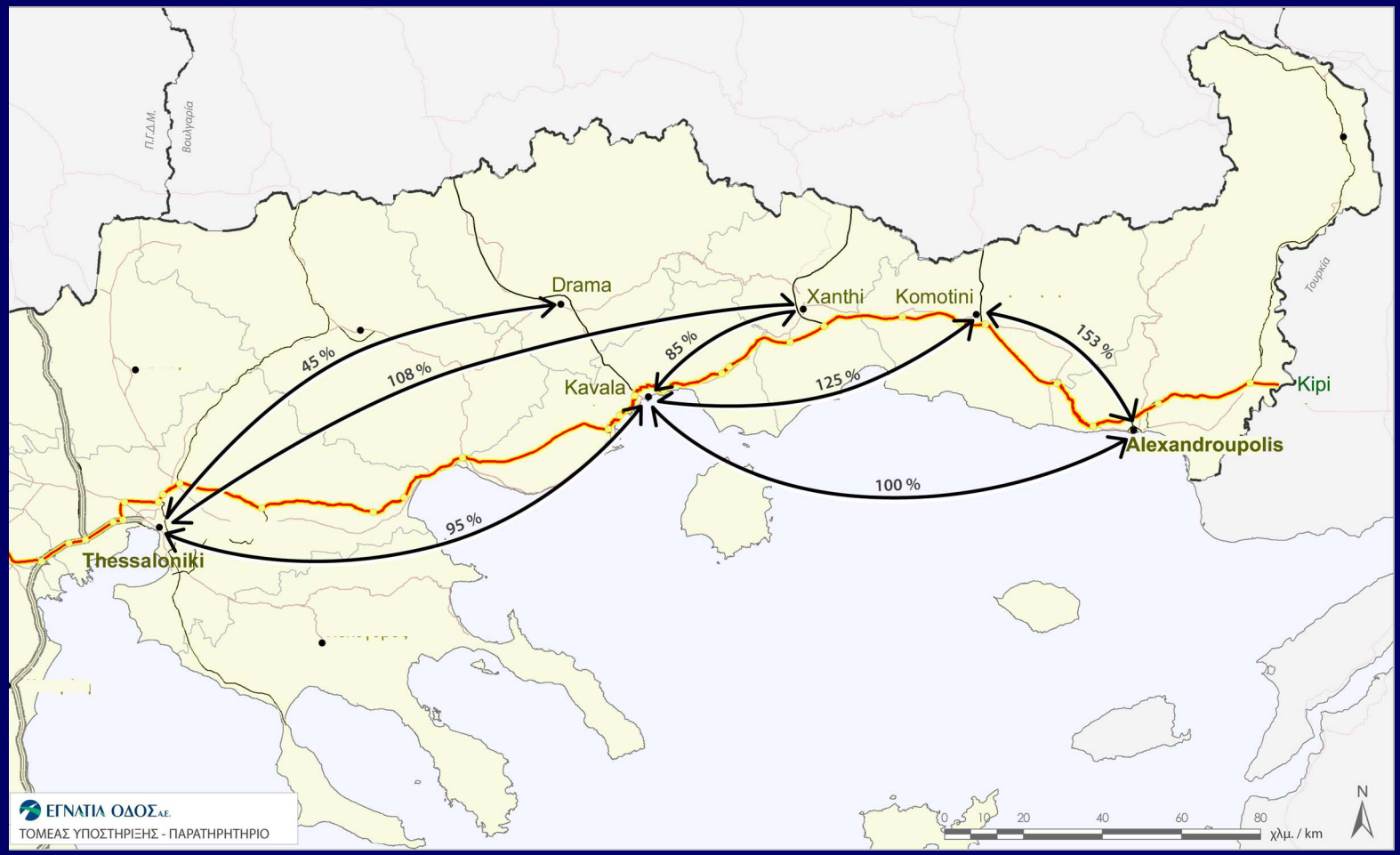
**population changes**



# Egnatia Odos Observatory: RESULTS

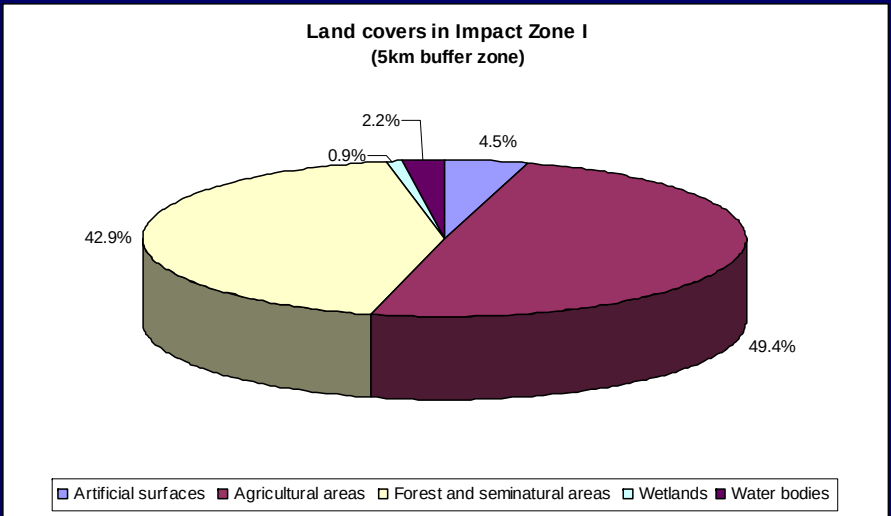
balance - networking

**networking of urban centres – increases (%) in mobility 1993-2002**



# Egnatia Odos Observatory: RESULTS

environment




Raw data source: CORINE Land Cover 2000

| Fragmentation of Natural Areas | | |
|---|---|---|
| **Prefecture** | **Indicator without Egnatia Motorway** | **Indicator with Egnatia Motorway** |
| Thesprotia | 4,35 | 4,47 |
| Ioannina | 2,83 | 2,87 |
| Grevena | 3,74 | 3,86 |
| Kozani | 3,57 | 3,60 |
| Imathia | 4,48 | 4,58 |
| Thessaloniki | 6,65 | 6,75 |
| Serres | 3,43 | 3,43 |
| Kavala | 3,39 | 3,60 |
| Xanthi | 3,24 | 3,22 |
| Rodopi | 3,20 | 3,23 |
| Evros | 4,42 | 4,43 |
| *Zone II* | *3,76* | *3,82* |

# Egnatia Odos Observatory: RESULTS

environment

**Fragmentation of settlements**

| Prefecture | *Indicator before Egnatia* | *Indicator after Egnatia* |
|---|---|---|
| **Evros (Alexandroupoli)** | **7.6** | **4.8** |
| Rodopi | 21.6 | 10.1 |
| Xanthi | 20.9 | 2.4 |
| Kavala | 20.2 | 12.2 |
| **Thessaloniki** | **32.5** | **11.3** |
| Serres | 0.7 | 0.3 |
| Imathia | 9.0 | 2.0 |
| Kozani | 13.1 | 1.7 |
| Grevena | - | 1.0 |
| Ioannina | 8.5 | 4.5 |
| **Thesprotia (Igoumenitsa)** | **8.5** | **4.4** |
| Trikala | - | 0.3 |

- The problems with noise and atmospheric pollution are mainly located in the suburban area of Thessaloniki.

# Egnatia Odos Observatory: CONCLUDING REMARKS

- Egnatia motorway:
  - main backbone of transport infrastructure
  - development axis
- Observatory:
  - Monitoring and information mechanism
- Direct and positive impacts:
  - traffic properties of the road network,
  - mobility,
  - networking of urban centres,
  - accessibility.
- Further investigation and monitoring:
  - spatial organisation
  - land use and value changes
  - gateways development
  - multimodal transport

Thank you for your attention!

http://www.egnatia.gr

http://observatory.egnatia.gr

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GREEK GOVERNMENT

EUROPEAN INVESTMENT BANK

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