



***RAIL BALTICA***



# Rail Baltica Corridor Study

Rail Baltica Final Conference

Riga, 10 January 2008



# Objectives

The objective of the Rail Baltica Corridor Study is to assess spatial planning, regional development and social and economic aspects in order to evaluate most favorable corridor alternatives of the Rail Baltica railway.



# Specific tasks of the study

- Specify methodology to be used
- Acquire data and information
- Compare 3 rail corridor alternatives
  - As defined by COWI pre-feasibility study
- Comparison based on following aspects:
  - Social
  - Economic and regional development
  - Spatial planning
  - Environmental
- Conclusions & recommendations



# Scope and constraints

- Analysis of conditions in 4 countries
- Constrained data availability
- Data differences among countries
- Different administrative division
- Comparison of regions within the country
- Limited time and finance budgets



***RAIL BALTICA***



# Rail Baltica corridor alternatives

- Rail Baltica corridor alternatives as defined by COWI pre-feasibility study, 2007



Alternative 1



Alternative 2



Alternative 3



# Alternative 1: Design speed of min. 120 km/h

- Minimum design speed of 120 km/h Tallinn – Warsaw
- Russian gauge standard
  - in Estonia, Latvia and Lithuania until Kaunas.
- European gauge standard
  - Kaunas to the Lithuanian/Polish border
  - Poland
- Corridor
  - ESTONIA: Tallinn, Tape, Jogeva, Tartu, Valga
  - LATVIA: Valka, Valmiera, Riga, Jelgava
  - LITHUANIA: Joniskis, Radviliskis, Kaunas,
  - POLAND: Trakiszki, Suwalki, Elk, Bialystok, and Warsaw
  - This alternative requires a re-loading logistics centre to be established in the Kaunas region.
- New line between Joniskis and Kaunas, OR
- Upgrade existing line Joniskis - Kaunas via Siauliai & Guziunai



# Alternative 2:

## Design speed of min. 160 km/h

- Minimum design speed of 160 km/h
- Russian gauge standard
  - in Estonia, Latvia and Lithuania until Kaunas.
- European gauge standard
  - Kaunas to the Lithuanian/Polish border
  - Poland
- Corridor
  - ESTONIA: Tallinn, Tape, Jogeva, Tartu, Valga
  - LATVIA: Valka, Valmiera, Riga, Jelgava
  - LITHUANIA: Joniskis, Radviliskis, Kaunas,
  - POLAND: Trakiszki, Suwalki, Elk, Bialystok, and Warsaw
  - This alternative requires a re-loading logistics centre to be established in the Kaunas region.
- New European standard line Kaunas - Lithuanian/Polish border
- New line between Joniskis and Kaunas, OR
- A new line Riga - Bauska - Panevezys - Kaunas



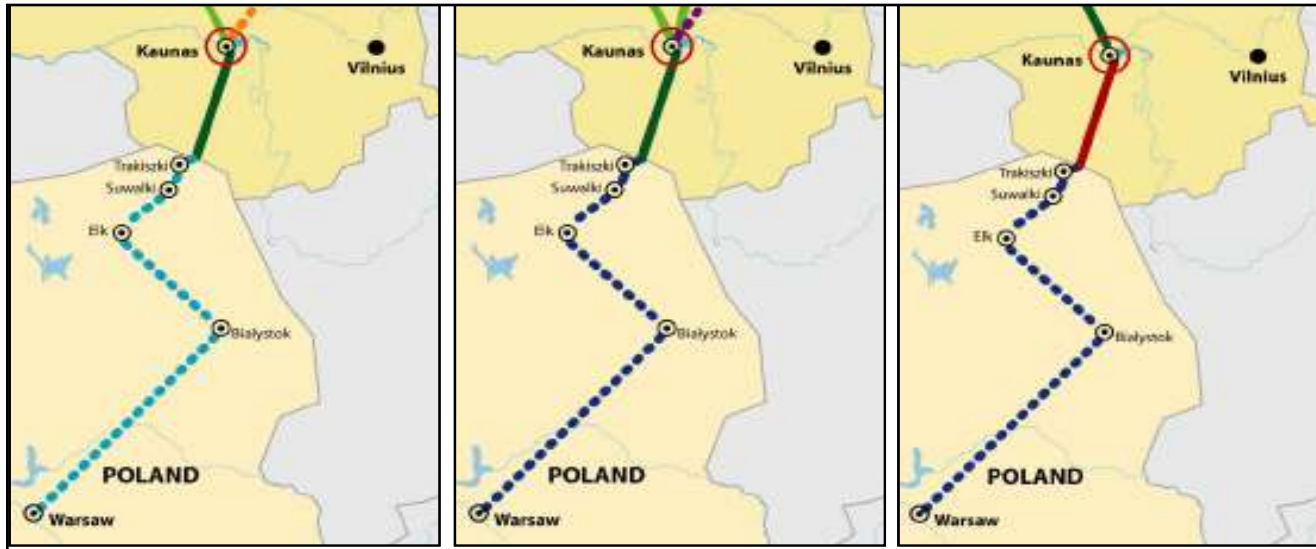


# Alternative 3: European gauge standard

- Design speed 160 km/h, Kaunas - Polish boarder 200 km/h
- European gauge standard
  - Tallinn – Warsaw
- Corridor
  - ESTONIA: Tallinn, Pärnu (Lelle)
  - LATVIA: Riga
  - LITHUANIA: Joniskis, Radviliskis, Kaunas,
  - POLAND: Trakiszki, Suwalki, Elk, Bialystok, Warsaw
- New European line Kaunas - Polish border, 200 km/h
- New line Kaunas – Riga – Pärnu - Tallinn, 160 km/h, OR
- A new line Kaunas - Riga - Pärnu - Lelle - Tallinn



# Section 1: Warsaw - Kaunas



Alternative 1

Alternative 2

Alternative 3

- Rail corridor alignment stays the same
- Differences:
  - 120 or 160 or 200 km/h
  - degree of upgrade of existing line in Poland
  - type of a newly built line Kaunas – Polish border



# Section 2: Kaunas - Riga



Alternative 1

Alternative 2

Alternative 3

- Rail corridor differs among alternatives
- Differences:
  - degree of upgrade of existing line, km/h
  - type of a newly built line, km/h
- Kaunas – Latvian border: separate analysis
- Lithuanian border – Riga: separate analysis



# Section 3: Riga - Tallinn



Alternative 1

Alternative 2

Alternative 3

- Rail corridor differs in 3rd alternative
- Differences: existing vs. newly built line
- Riga – Estonian border: separate analysis
- Latvian border – Tallinn: separate analysis



# Comparing corridor alternatives



# Methods used

- Assessment / comparison of criteria
- Case comparisons
- Interviews & focus groups
- Review of planning documents



# 4 groups of criteria

- Economic & regional development
- Spatial planning
- Social
- Environmental



# Economic & Regional Development Indicators

- Assessment of criteria
  - Economic growth of the area
  - Business activity of the area
  - Activity of transport & logistics firms
  - Registered trucks and buses
- Other aspects
  - assessed via interviews & case comparisons
  - e.g. added econ. value, impact on other modes of transport, reduced congestion





# Social Indicators

- Assessment of criteria
  - Size & composition of population affected
  - Employment / unemployment trends
  - Household income levels
  - Population served by other modes of transport
- Other aspects
  - assessed via interviews & case comparisons
  - e.g. population mobility, travel time savings, quality of life



# Spatial Planning Indicators

- Assessment of criteria
  - Density of existing transport infrastructure
  - Number and size of railway stations
  - Land usage transformations
  - New crossings with roads & highways
- Other aspects
  - assessed via interviews & case comparisons
  - e.g. forest or agricultural land affected, landscape design & preservation



# Environmental Indicators

- Assessment of criteria
  - Natura 2000 territories affected
  - Newly built river crossings
  - Entire length of the railroad
  - Length of newly built railroad
- Other aspects
  - assessed via interviews & case comparisons
  - e.g. impact on noise, air, soil and water conditions



# Analysis of Indicators

- Data for each indicator is acquired for the smallest administrative division where the data is being available (e.g. district level and “state” cities in Latvia)
- Each indicator is assessed in the entire length of the corridor alternative in the given country



# Analysis of Indicators

- Where possible, data is displayed on maps to enable visual comparison of the affected regions or districts
- Besides maps, charts, graphs and tables provide additional mode of displaying and analyzing the data



Example:

Comparing economic development  
of Latvian regions  
affected by Rail Baltica corridor



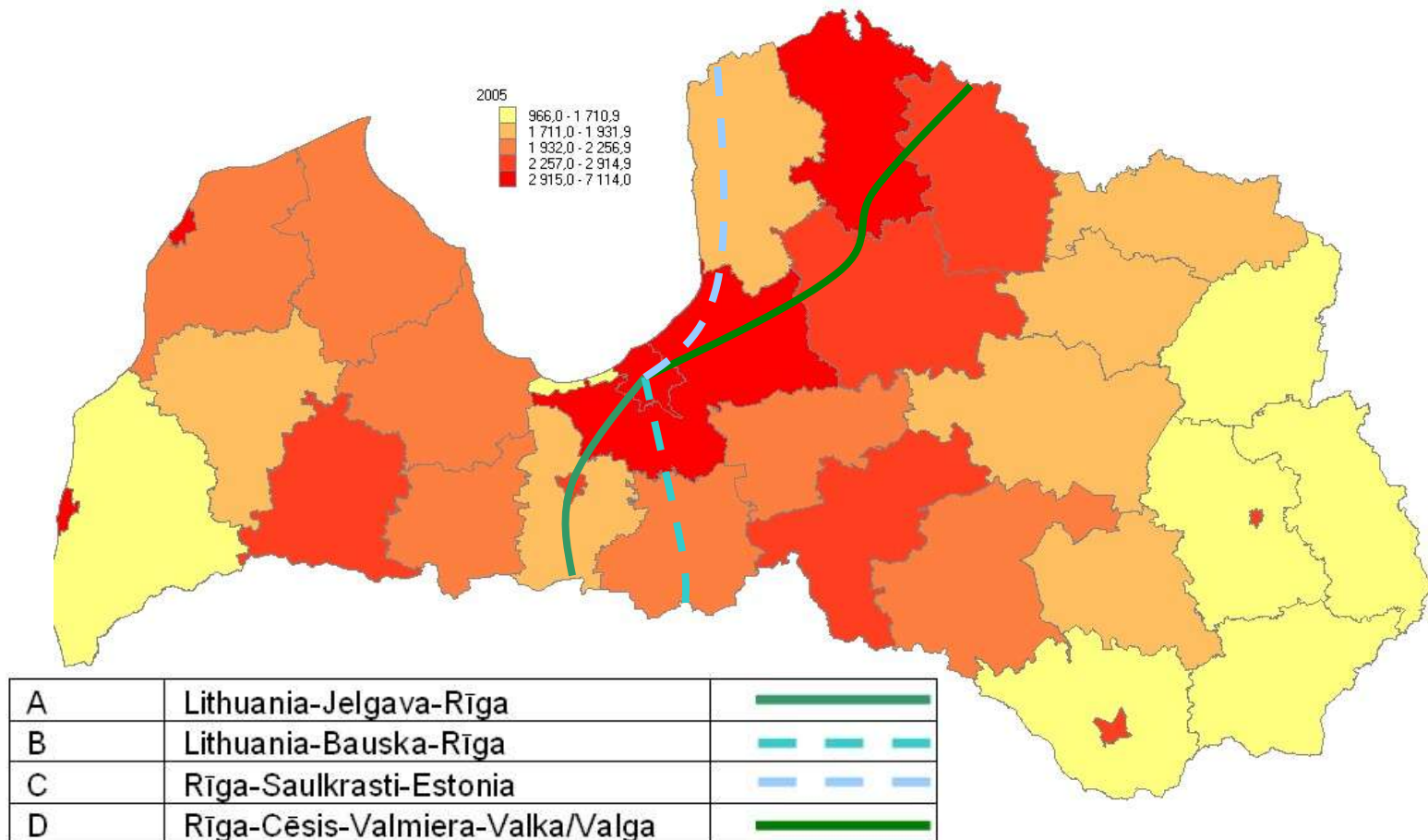
# Economic & Regional Development Indicators

- Assessment of criteria
  - Economic growth of the area
  - Business activity of the area
  - Activity of transport & logistics firms
  - Registered trucks and buses



# Economic growth

## GDP per capita per district

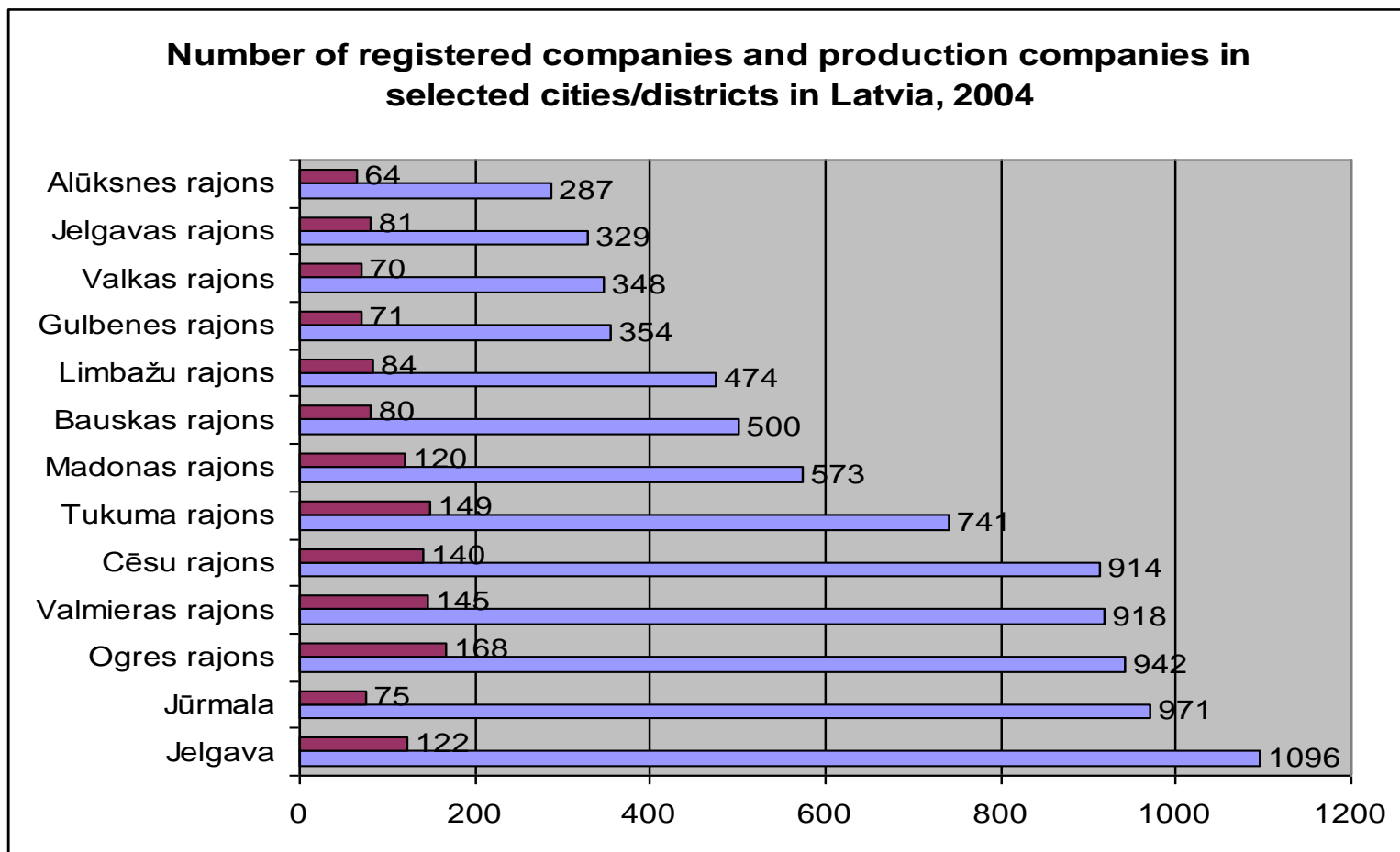






# Business activity

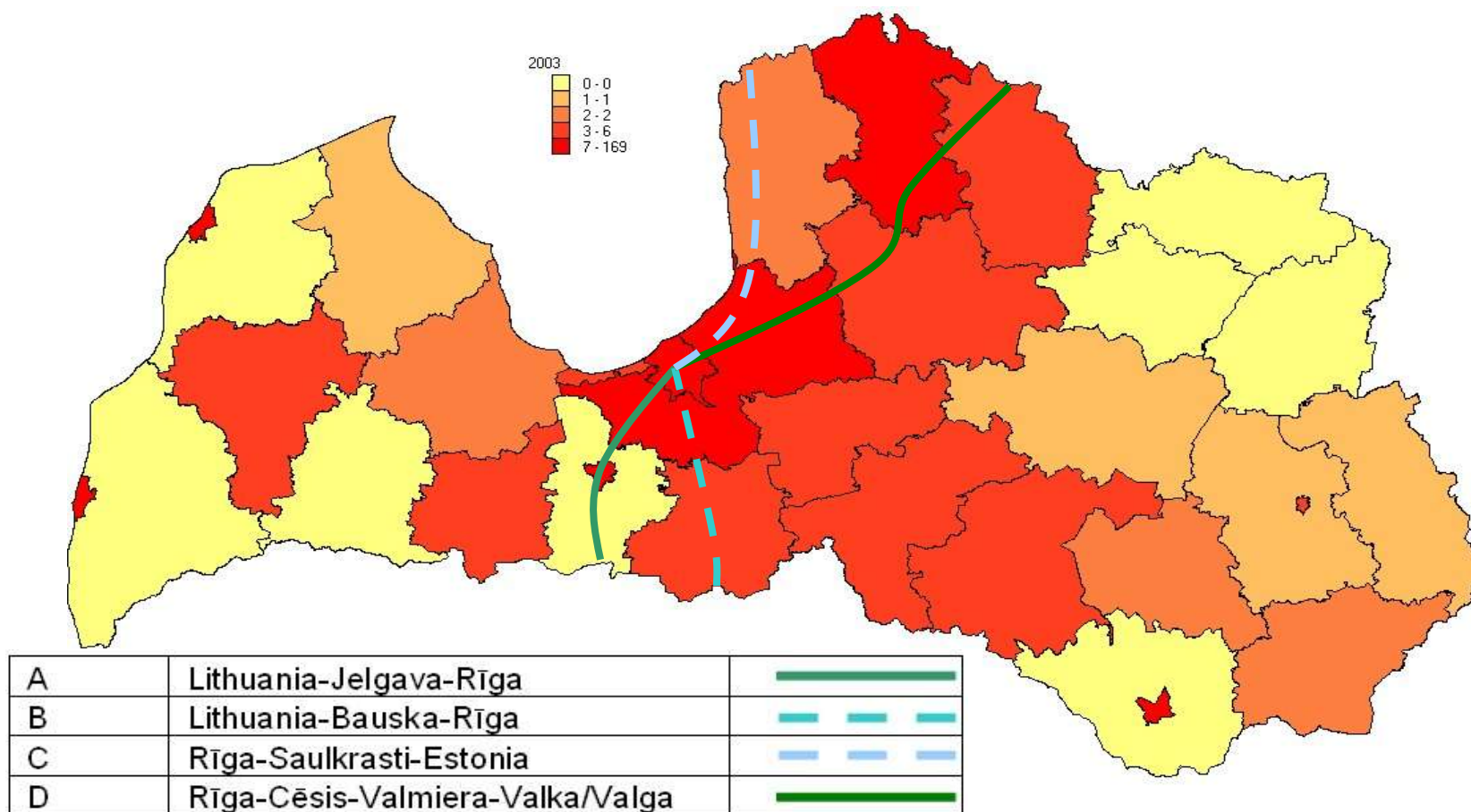
## Companies Selected cities & districts





# Business activity

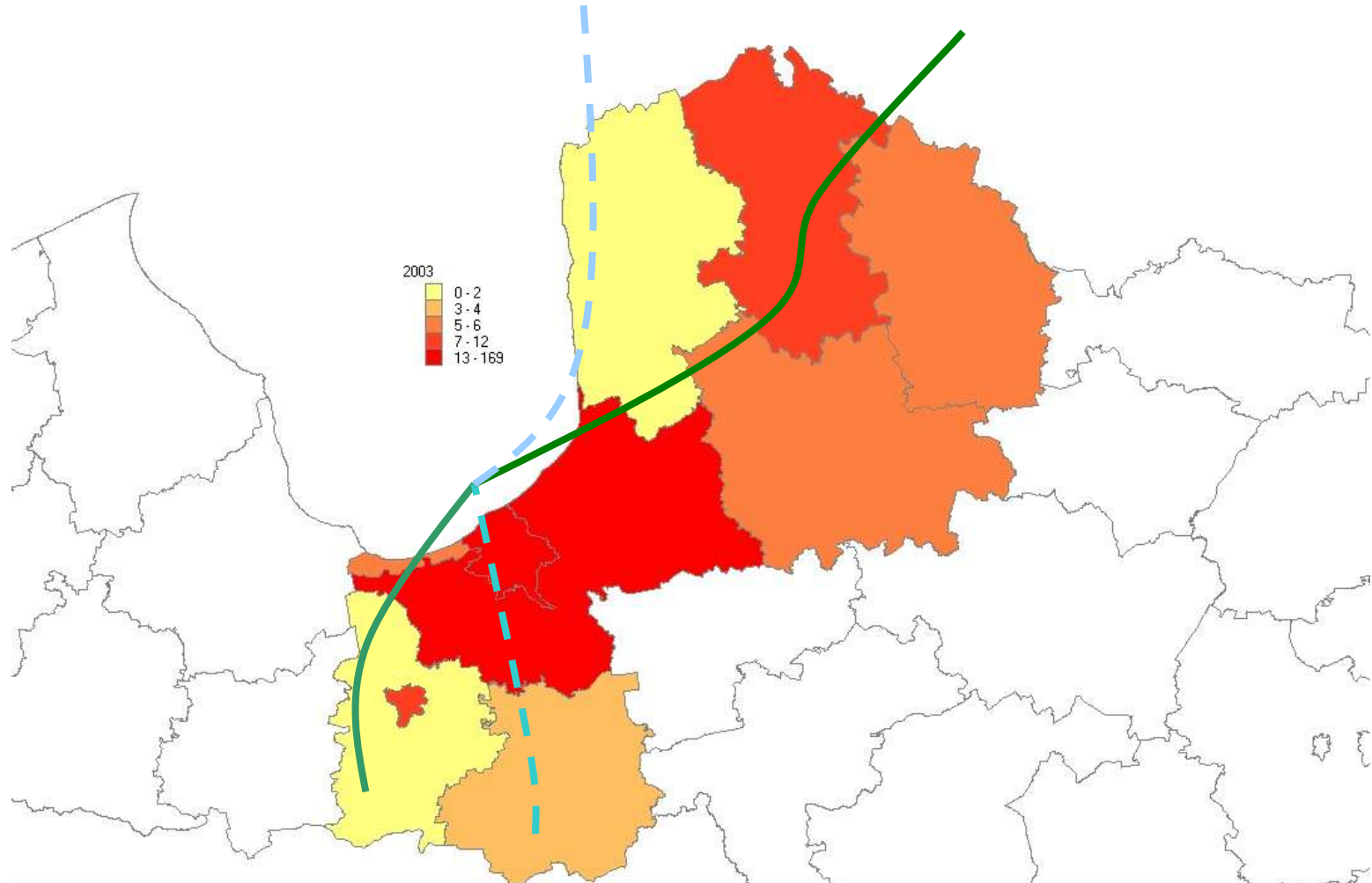
## Companies with more than 250 employees





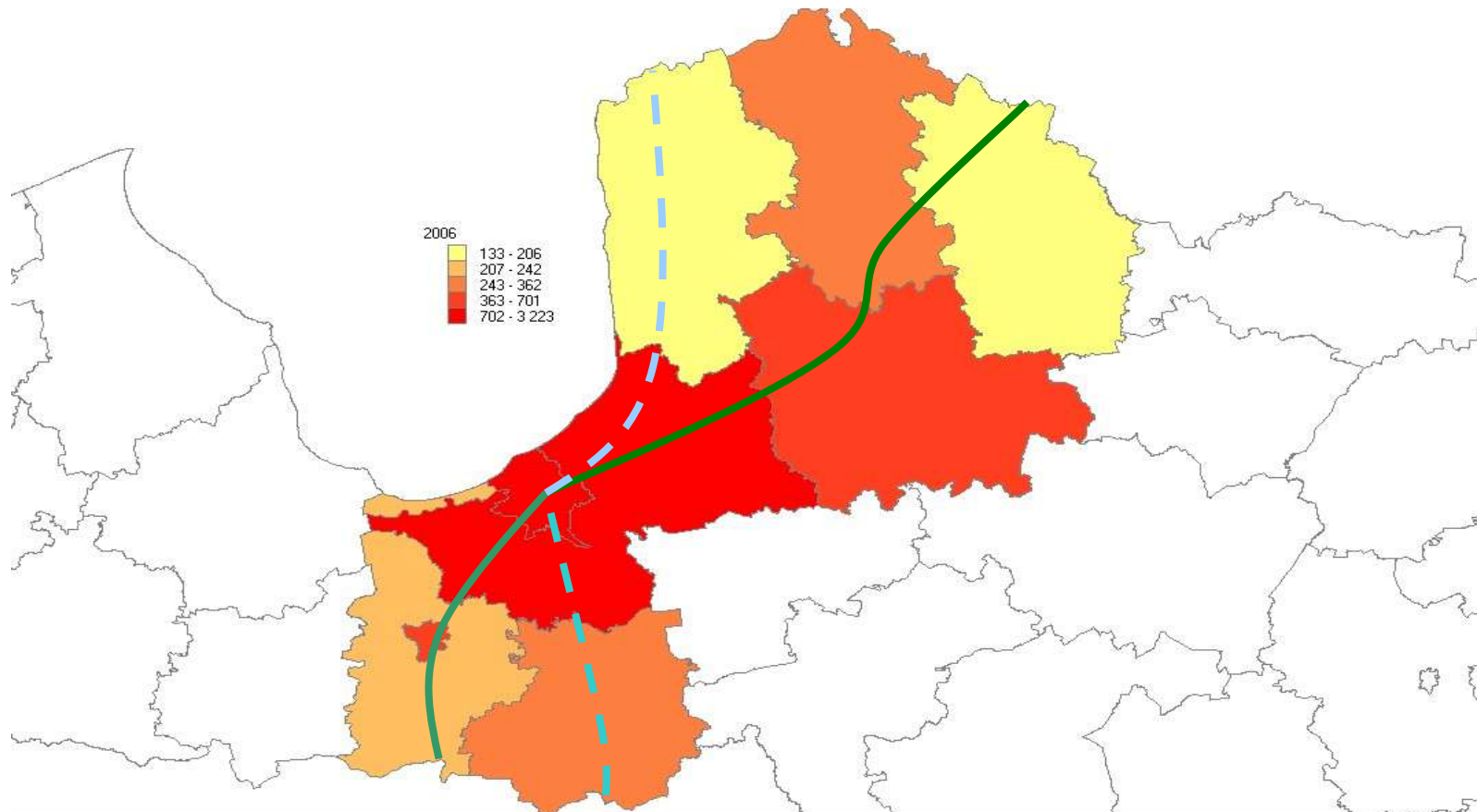
# Rail Baltica corridor impact zone

Companies with more than 250 employees



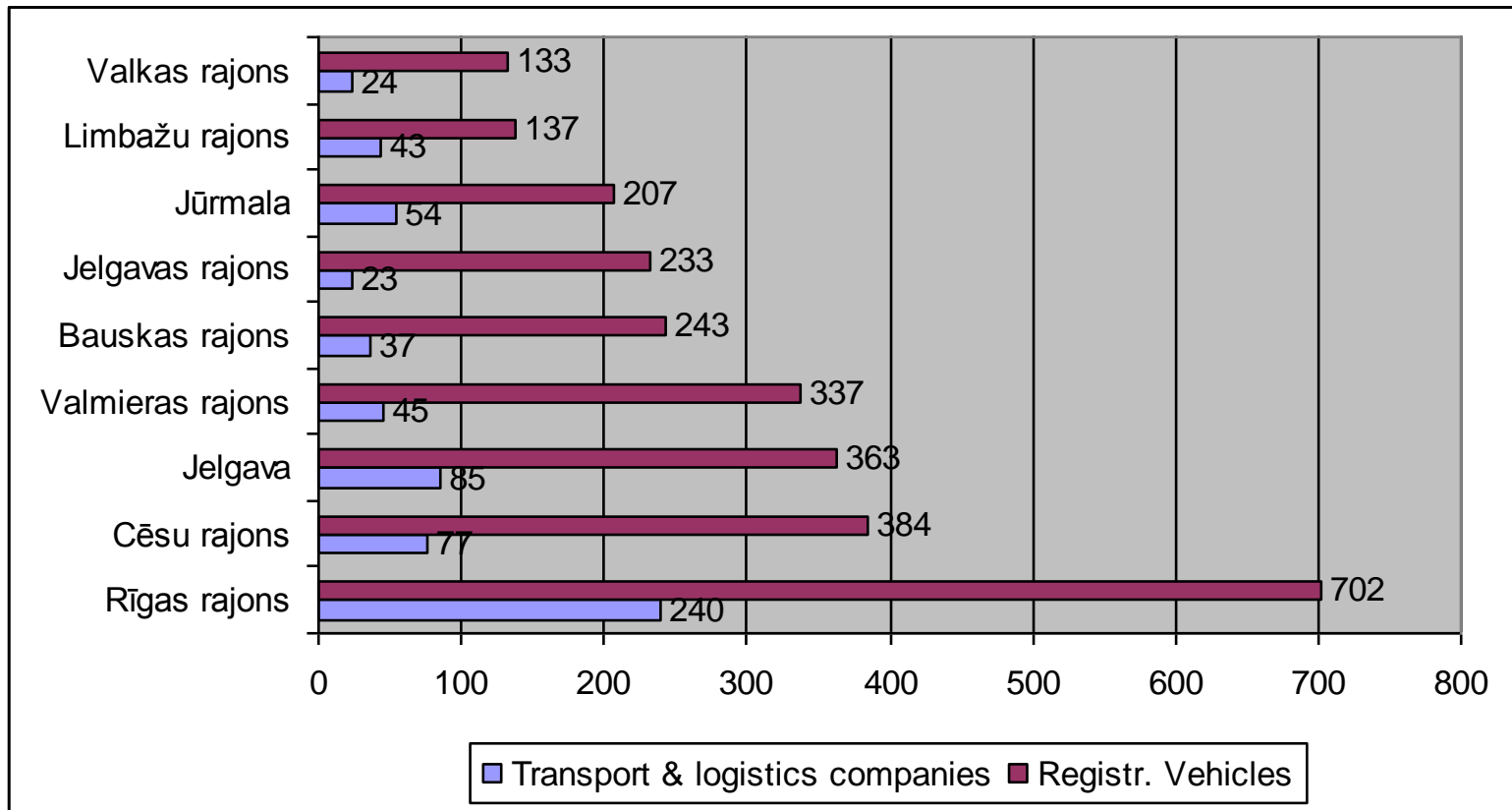


# Registered trucks in Rail Baltica corridor impact zone





# Registered vehicles and Transportation & Logistics firms, selected cities & districts





# Analysis of Indicators

- Each criterion is assigned a weight in %
  - Sum of all weights within the category is 100%
- Based on its value, each criterion is assigned to one of the 5 categories on the scale of measurements
- Each category receives from 0 to 80 points
  - 0 – indicator is insignificant in this region
  - 80 – indicator is strong in this region
  - each category increases marks by 20 points
- Results are summarized for each category
- Categories are weighed against each other based on % weight of each category
  - Sum of all weights of all categories is 100%



# Some Assumptions

- Riga City is excluded from comparison with other districts, as
  - All Rail Baltica corridor alternatives follow through Riga
  - Size differences between Riga City and other affected municipalities create disproportionate comparisons



# Weight of Economic Indicators

|                       |                             |      |
|-----------------------|-----------------------------|------|
| Economic growth       | Regional GDP                | 30%  |
| Business Activity     | Registered firms            | 10%  |
|                       | Production firms            | 10%  |
|                       | Firms w. > 250 employees    | 10%  |
|                       | Firms on 1000 population    | 10%  |
| Trucks                | Registered trucks           | 15%  |
| Transport & logistics | Transport & logistics firms | 15%  |
|                       | Total                       | 100% |



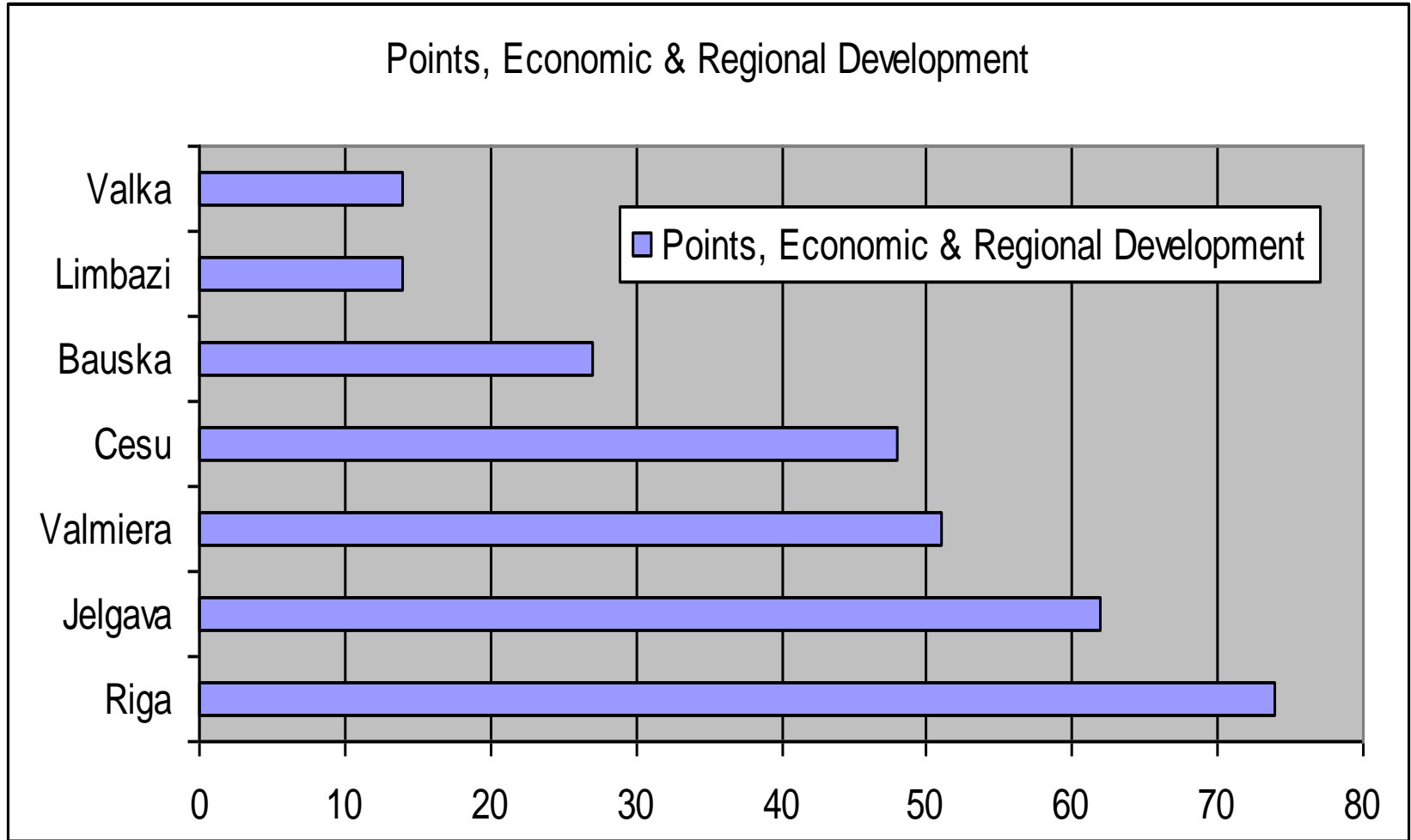


# Example: GDP indicator weighed

|                           | GDP | Weight | Subtotal |
|---------------------------|-----|--------|----------|
| Bauska district           | 40  | 30%    | 12       |
| Cesis district            | 40  | 30%    | 12       |
| Jelgava, Jelgava district | 60  | 30%    | 18       |
| Limbazi district          | 0   | 30%    | 0        |
| Riga district             | 80  | 30%    | 24       |
| Valka district            | 20  | 30%    | 6        |
| Valmiera district         | 60  | 30%    | 18       |



# Results Economic Indicators Latvia





# Comparing Indicator Groups

| <i>Indicator group</i>          | <i>Group weight</i> |
|---------------------------------|---------------------|
| Economic & regional development | 45%                 |
| Social                          | 25%                 |
| Spatial planning                | 20%                 |
| Environmental                   | 10%                 |



# Project progress

- Data is being analyzed to enable assessment and comparison of the above criteria
- Case comparison studies are performed
- Interviews and focus groups performed
- Final results, conclusions & recommendations
  
- Final report – End of January 2008