

MONITRAF - Work Package 8 results

Collecting, calculating, modelling past and actual values of indicators

Analyses of forecasting scenarios

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INTRODUCTION

This document presents the results of the activities foreseen within the WP8 of the MONITRAF project, the elaboration of the set of Monitraf indicators and the building of a scenario on the effects of heavy transborder traffic on the environmental conditions of the Alpine area crossed by the Brenner, Gotthard, Mont Blanc and Fréjus infrastructural axes.

The results of WPs 6 and 7 make up the knowledge base for this work. WP7 selected one initial list of indicators capable of illustrating the main characteristics of a transport system as the one involving international Alpine transit and also capable of measuring its main effects and impacts on the territory concerned; the main objective is that of assessing the sustainability of the system.

WP7 did not formulate new indicators for this purpose, since there are many appropriate ones already available both at scientific and at institutional level; rather, a method to select the existing indicators has been identified, allowing to define a set of indicators that were suitable for MONITRAF's objectives.

WP6 defined how to collect data from Partner country data banks that would be useful in implementing MONITRAF indicators in a sufficiently homogeneous manner so as to allow for the necessary elaborations without producing misleading distortions.

The evaluation of the available information coming from Partner countries on the scale of a single MONITRAF transalpine traffic corridor imposed a rather strict selection of the first set of indicators perfected by WP7. Precisely the disparity of data in terms of time scale and space and of method of collection or of types of parameters considered, has led the PPs to choose a rather limited number of 25 indicators. The latter selection should, however, allow to depict a global picture of the interactions and the relations between the transport system, the social system, the economy and the territory in view of sustainable mobility.

It is appropriate to point out that many MONITRAF indicators have been elaborated with high levels of detail, having as reference the territories crossed by the transalpine infrastructural corridor included within the Alpine borders as defined in the Alpine convention. This approach allows to highlight the relations between international traffic, in particular freight traffic, and certain territorial parameters such as the concentration of pollutants recorded in the various monitoring stations, the populations along the corridors, noise etc. However we shouldn't conceal the fact that in some cases information was not complete enough to guarantee adequate elaboration of the indicator. This has highlighted the need to enhance the collection of basic data, as that on noise, for example, and to manage to establish common protocols for collection and elaboration.

In the second part of the WP, the traffic and the air quality indicators underwent more in-depth elaboration for the construction of emission scenarios up till 2025 both in the perspective of "business as usual" and in that of actual corrective measures being taken on traffic flows and on vehicle technology improvements. These elaborations were then made available for the definition of sets of measures to support the sustainable development of transalpine traffic proposed by WP 10.

Work was done with the collaboration of all the PPs which supported the Aosta Valley ARPA by participating in the selection of the sets of indicators, in the collection of the data required and in the critical review of the indicators processed and of the scenarios. In particular, EURAC took part in the definition of the Fact Sheet and took care of GIS data processing and INFRAS supplied assiduous methodological support.

1 PART ONE

MONITRAF SET OF INDICATORS

Methodology

After identifying the most appropriate indicators for the purpose of the project and the ones that are most significant and that can be filled with the available data, we can now say that the set of MONITRAF data is composed of 25 indicators grouped together in thematic groups which facilitate their interpretation. The following table lists the 25 indicators of the MONITRAF set, grouped together by themes, and highlights the ones that contain enough data to be elaborated.

N°	Category	Name	Elaboration
1	Traffic	Traffic volume all vehicles	done
2	Traffic	Traffic volume heavy duty vehicles	
3	Traffic	Composition vehicle fleet (EURO classes)	
4	Traffic	Modal split freight transport (road and rail)	
5	Traffic	Yearly transalpine total tonnage	
6	Environment	Air concentration NO2: Hourly limit value for the protection of human health	done
7	Environment	Air concentration NO2: Daily limit value for the protection of human health	
8	Environment	Air concentration NO2: Annual limit value for the protection of human health	
9	Environment	Air concentration PM10: Annual limit value for the protection of human health	
10	Environment	Air concentration PM10: 24-hour limit value for the protection of human health	
11	Quality of life	Noise indicator	done
12	Quality of life	Cardiovascular and respiratory morbidity (Health indicator)	∅
13	Quality of life	Transport accidents	done
14	Quality of life	Investments in noise protection infrastructure	∅
15	Infrastructure	Investments in transport infrastructure	∅
16	Pricing and regulation	Toll prices	done
17	Pricing and regulation	Fuel prices	done
18	Economy	GDP per inhabitant	done
19	Society	Population	done
20	Society	Unemployment rate	done
21	Economy	Number of employees in transport sector	∅
22	Economy	Number of tourist beds	done
23	Economy	Overnight stays	done
24	Society	Migration balance	done
25	Society	Birth balance	done

The implementation and elaboration of the set of indicators was done in two steps:

- Data collection,
- Indicator elaboration

The main data sources are the National Statistics Offices and, at regional-cantonal level, the national and local administrations in charge, the rail and road infrastructure managing bodies and the local environment monitoring agencies

So as to organise data collection in the best possible manner, a fact sheet was prepared, that would contain any useful information for the PPs who had to search and produce the sets of data. All the PPs therefore filled in the spreadsheet handed out to them, in the same manner.

A file containing the following information was prepared for each indicator:

- The metadata indicator, so as to accurately guide data collection within a form, as the one below:

Indicator:				
	Number:		Name:	
	WP7 Codification:	Main category:		Unit:
	Level:			
	Objective:			
	Definition of indicator:			
	Calculation:			
Data:				
	Name:		Unit:	Periodicity:
	Period:		Reference period:	
	Definition of data to be collected:			
	Data source (citation basis):			
	Other Comments:			
	Please indicate zero and missing values as: 0 = value 0 x = no value existent nv = data existent, but not available for this request na = data not applicable for this request			

- The references of the measurement and counting stations which are useful for the purpose of knowing their location and the method of data collection with the production of three different forms: on traffic data, on air quality and on noise emissions, organised as follows:

TRAFFIC: Metadata counting stations	
Counting station xxxxx	
DB-Code-Nr.:	
Municipality:	
Coordinates:	latitude:
	longitude:
Responsible for counting station:	
	Motorway exit:
Form of collection:	Automatic counting station:

AIR QUALITY: Metadata measurement stations

Measurement station xxxxx

DB-Code-Nr.:

Municipality:

Coordinates:

latitude:

longitude:

height:

ellipsoid:

Responsible for measurement station:

Type of measurement station:

T= traffic; I = industrial; B= background

Type of site:

U = urban; S = syburban; R =country, rural area

Method of measurement

g = gravimetric measures;
b = beta attenuation; m = oscillating microbalance ;
n = nephlometric measures

Collected data (with unit and frequency):

NOISE: Metadata measurement stations

Measurement station XXX

DB-Code-Nr.:

Municipality:

Coordinates:

latitude:

longitude:

height:

ellipsoid:

Responsible for measurement station:

Type of measurement station:

T= traffic; I = industrial; B= background

Type of site:

U = urban; S = suburban; R =country, rural area

Method of measurement

g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephlometric measures

Collected data (with unit and frequency):

- Excel spreadsheets so as to organise all the data collected in a homogeneous manner for all Partners, as you can see from the example herein on indicator 6.

Measurement station XXXX							
NO2 concentration	1995	2000	2001	2002	2003	2004	2005
hourly average							
median							
98° percentile							
peak (maximum daily average of the year)							
Number of hours with a NO2 concentration of more than 200 µg/m³ as hourly average							
% time covering for data collect							
Number of hours with a NO2 concentration of more than 200 µg/m³ as hourly average	1995	2000	2001	2002	2003	2004	2005
January							
February							
March							
.....							
Total							

After checking the adequacy and the comparability of the information, the compiled spreadsheets were assembled in a summary table containing the data organised by corridor, by measurement station, (if required by the indicator) and by time period as shown below. Furthermore, for every set of data a brief evaluation form on the quality of the information in terms of their completeness and of the time and space sets was filled, with the indication of the percentage of data supplied compared to the standard required.

Example of a summary table showing basic data

Air quality station	Country	1995	2000	2001	2002	2003	2004	2005
REIDEN	CS	x	x	x	x	0	0	0
ERSTFELD	CS	x	x	x	x	0	0	0
ALTDORF	CS	x	x	x	x	x	x	x
BIOGGIO	TIC	0	0	0	0	0	0	0
BODIO	TIC	0	0	1	0	0	0	0
CHIASSO	TIC	2	30	5	0	0	0	0
MOLENO	TIC	x	x	x	x	0	0	0
VOMP	TYR	x	0	0	0	1	1	8
MUTTERS	TYR	x	0	0	0	0	0	0
BRESSANONE (BX1)	S_TYR	x	0	0	0	0	0	0
VIPITENO (ST1)	S_TYR	x	2	0	0	0	0	0
BOLZANO 5	S_TYR	x	0	0	1	0	0	0
VELTURNO	S_TYR	x	x	x	x	x	0	0
CHAMONIX	RA	x	x	x	0	0	0	0
PLOUVES	VDA	x	23	57	16	0	1	42
LA THUILE	VDA	x	0	0	0	0	0	0
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	x	12
CHAMBERY	RA	x	0	2	0	0	0	0
ST JEAN	RA	x	0	0	0	0	0	0
SUSA	PI	x	x	x	0	0	0	0

The data sets were used to calculate the actual indicators. To make for easy reading, graphs have been made of the most significant data, with special attention paid to representing the time sets which best explain the trends, or to highlighting the differences between the four corridors.

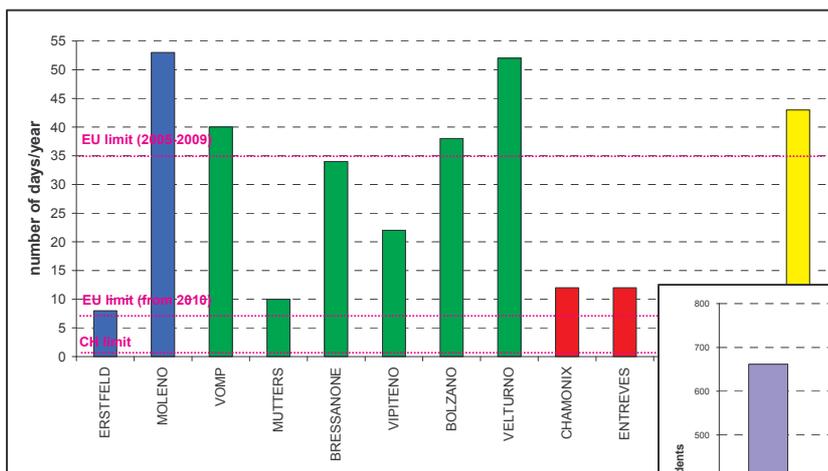


Chart per corridor

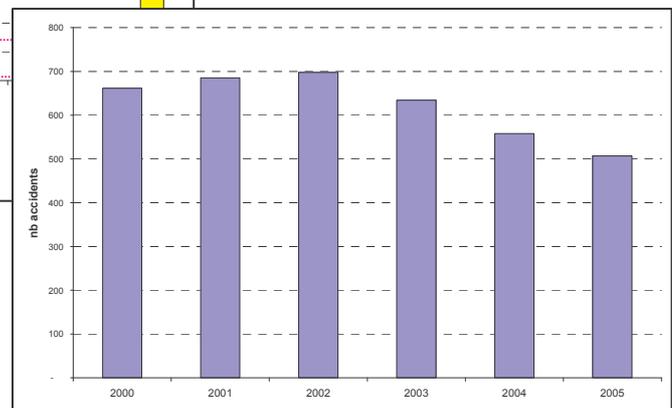
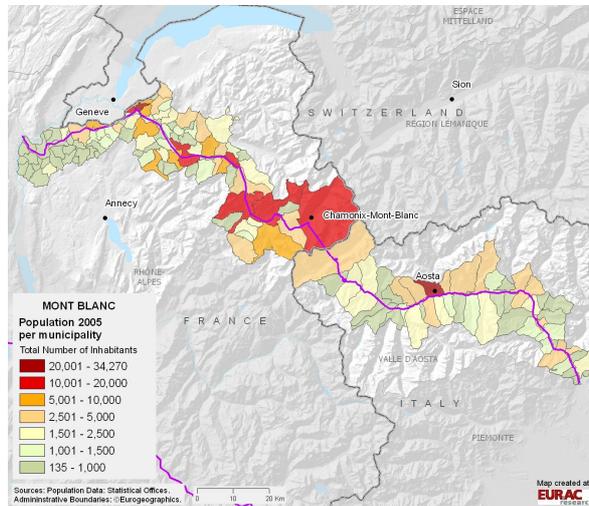


Chart per year

Maps were used as a backup in the case of indicators where details on a municipal scale were particularly relevant.



Country level mapping

The analysis of the elaborations was mainly on the comparison between the four MONITRAF corridors and, in some cases, between the latter and situations outside the corridors, (other corridors, similar values on a more general scale etc.) the timescale of the phenomena and possible relations between indicators.

In some cases, the lack of a few sets of data or the lack of data homogeneity because of the different country sampling methods, have not allowed to adequately assess the indicator.

As shown in the first chart in this chapter, four are the indicators that could not be elaborated because of scarcity of data or because of the impossibility to interpret them homogeneously along the entire MONITRAF area. Indicator 12 on the morbidity rate due to cardiovascular and respiratory diseases was kept within the set of indicators because of its fundamental importance in depicting an exhaustive framework for an evaluation of sustainability of transalpine traffic, but in actual fact at the moment we do not have information that can be elaborated into reliable quantitative indicators.

TERRITORIAL PARAMETERS

THE TERRITORIAL UNITS TAKEN INTO ACCOUNT

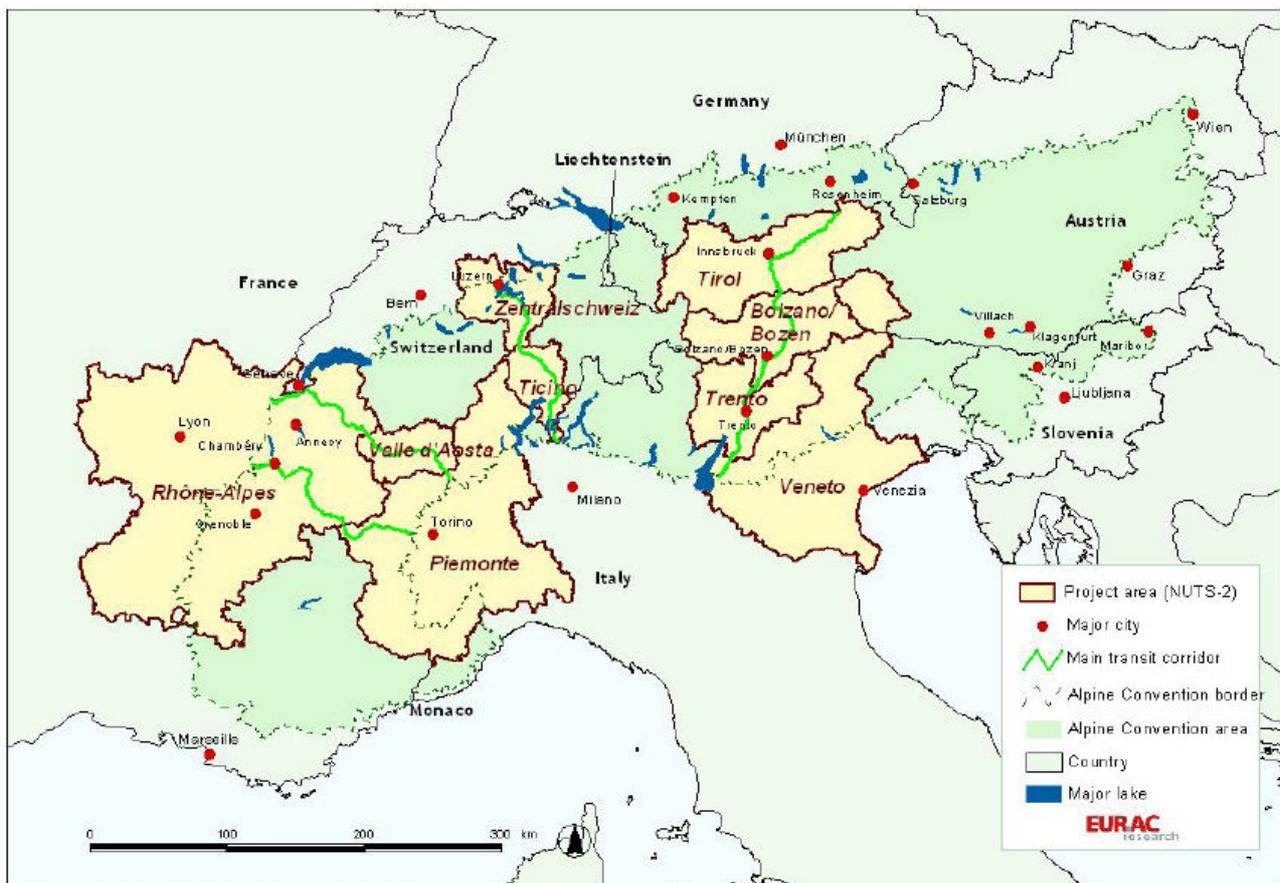
The data used to produce the MONITRAF indicators are organized into three sets of Territorial Units

UE	AUS	CH	FRA	ITA
NUTS2	<i>Bundesländern</i> Federal States	<i>Grossregionen</i> Economic Regions	<i>Régions</i> Regions	<i>Regioni</i> Regions
NUTS3	<i>Bezirks</i> Districts	<i>Kantone</i> Cantons	<i>Départements</i> Departments	<i>Provincie</i> Provinces
NUTS5 / LAU2	Comuni (tedesco) Municipalities	Comuni (tedesco) Municipalities	<i>Communes</i> Municipalities	<i>Comuni</i> Municipalities

Table A: Correspondence table on “Nomenclature of Territorial Units for Statistics” (NUTS) used in the MONITRAF analysis.

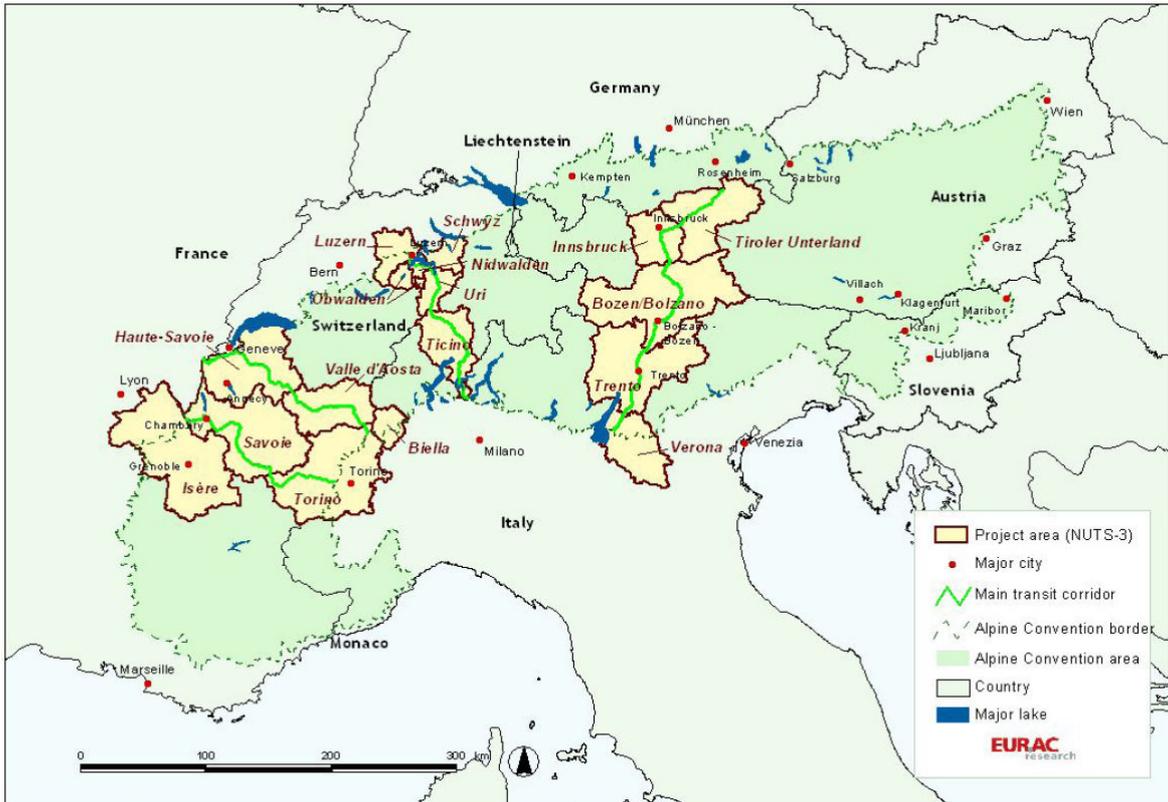
Municipalities located nearby motorway axes, the most influenced by transalpine freight traffic, were chosen for level NUTS5 (corresponding to level LAU2 Local Administrative Unit since 2004)

Below are maps with the indication of the territorial units considered in the indicators



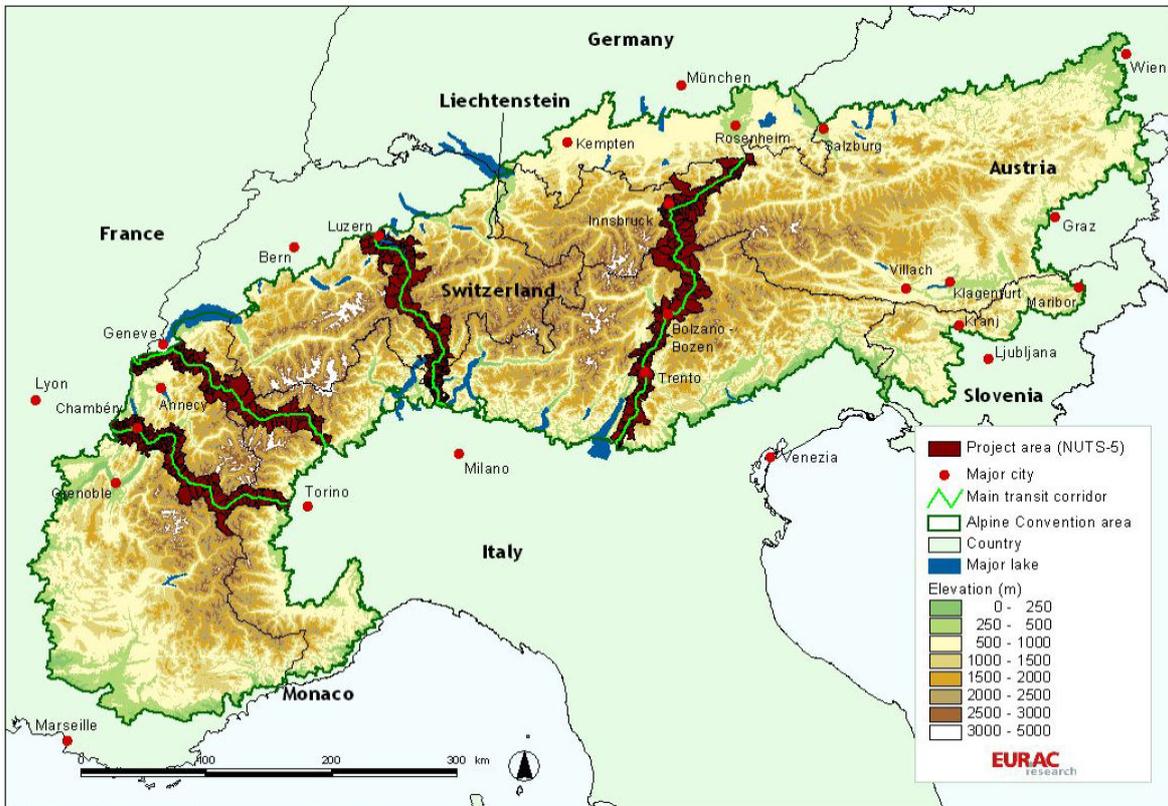
EURAC Research, Institute for Regional Development and Location Management, 2000
This map includes data licensed from the European National Mapping Agencies. © EuroGeographics. Country boundaries, Water, DCW, 1999. Cities, ArcWorld Supplement, 1999. DBM Mona Pro Europe © EO 5/3

Figure 1: territorial units NUTS 2 in the MONITRAF corridors



EURAC Research, Institute for Regional Development and Location Management, 2006
 This map includes data licensed from the European National Mapping Agencies, ©EuroGeographics. Country boundaries, Water, DCW, 1999; Cities, ArcWorld Supplement, 1999; DEM Mona Pro Europe ©GEOSYS.

Figure 2: territorial units NUTS 3 in the MONITRAF corridors



EURAC Research, Institute for Regional Development and Location Management, 2006
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Figure 3: territorial units NUTS 5 in the MONITRAF corridors

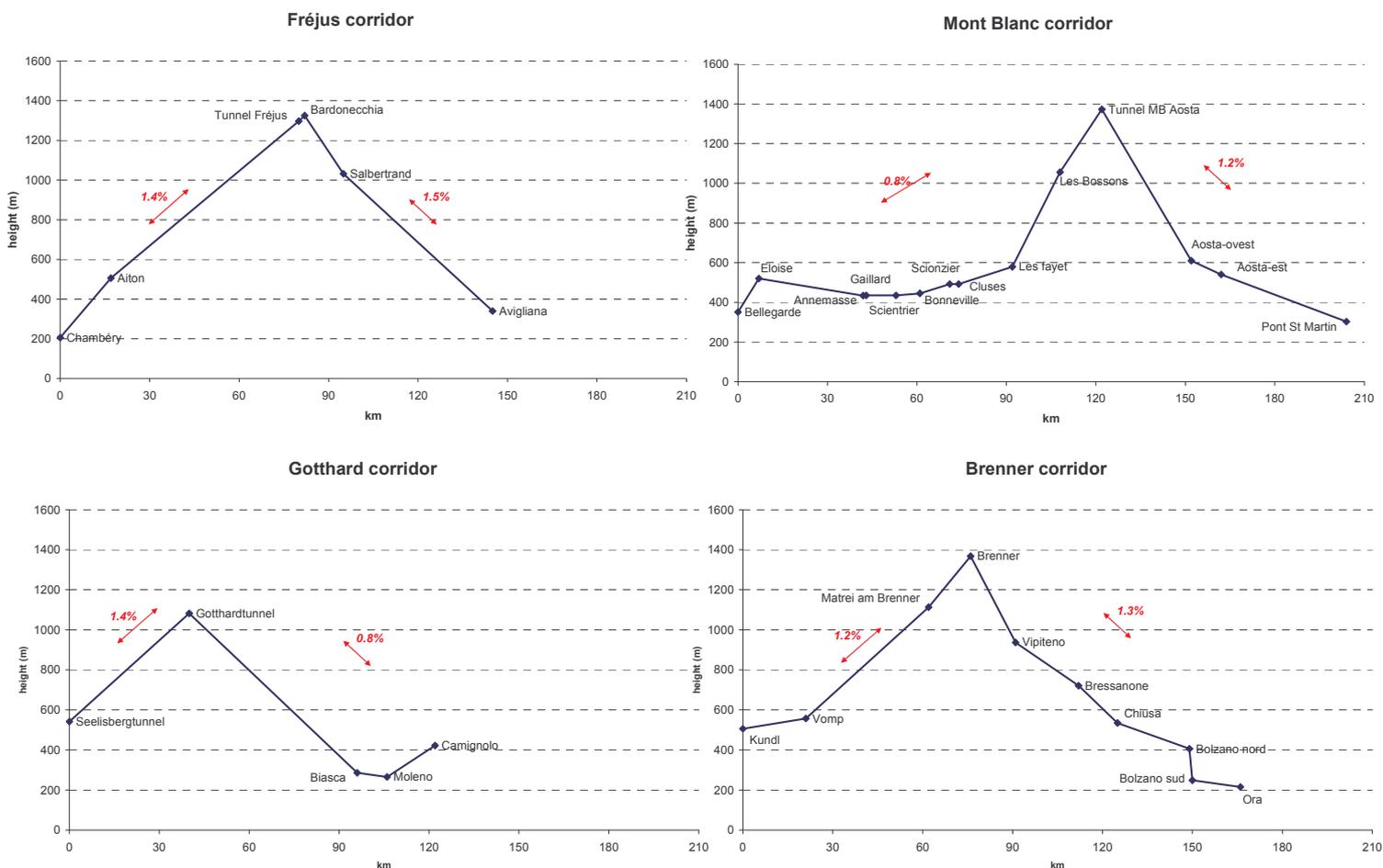
LENGTH OF MONITRAF ROAD CORRIDORS

MONITRAF corridors were identified based on the transalpine road sections along the stretch included within the perimeter as defined in the Alpine convention. The following table shows their lengths, based on GIS.

Corridor side	km
GOTTHARD	193.09
BRENNER	316.17
MONT BLANC	223.64
FREJUS	209.37

ALTIMETRIC PROFILES OF MONITRAF ROAD CORRIDORS

The altimetric diagrams below were created by assessing, for each corridor, the distance between two adjoining traffic measurement stations and reporting the respective altimetry. In red are the percent inclines of the stretches ranging from the entry point of the slopes to their peaks.



Inclines vary considerably as one may see from the table below which reports the percentage of slope between the measurement stations considered.

Fréjus	slope (%)
Chambéry - Albertville	1.8
Albertville - Tunnel Fréjus	1.3
Tunnel Fréjus - Bardonecchia	1.4
Bardonecchia - Salbertrand	2.3
Salbertrand - Avigliana	1.4
M. Bianco	slope (%)
Bellegarde - Eloise	2.4
Eloise - Annemasse	0.2
Annemasse - Gaillard	0.1
Gaillard - Scientrier	0.0
Scientrier - Bonneville	0.1
Bonneville - Scionzier	0.5
Scionzier - Cluses	0.0
Cluses - Les fayet	0.9
Les fayet - Les Bossons	3.0
Les Bossons - Tunnel MB	2.3
Tunnel MB - Aosta-ouest	2.5
Aosta-ouest - Aosta-est	0.7
Aosta-est - Pont St Martin	0.6
Gotthard	slope (%)
Seelisbergtunnel - Tunnel Gotthard	1.4
Tunnel Gotthard - Biasca	1.4
Biasca - Moleno	0.2
Moleno - Camignolo	1.0
Brenner	slope (%)
Kundl - Vomp	0.2
Vomp - Matrei am Brenner	1.4
Matrei am Brenner - Brennero	1.8
Brennero - Vipiteno	2.9
Vipiteno - Bressanone	1.0
Bressanone - Chiusa	1.4
Chiusa - Bolzano nord	0.5
Bolzano nord - Bolzano sud	15.7
Bolzano sud - Ora	0.2

CAPACITY OF MONITRAF ROAD CORRIDORS

		Monte Bianco		Fréjus		Gottardo	
vehicle block parameters	traffic yearly average situation:	2 cars + 1 HDV		0.45 cars+0.55 HDVR		0.84 auto+0.16TIR	
	length HDV	12	m	12	m		m
	interdistance HDVs	150	m	150	m		m
	length car	4	m	4	m		m
	interdistance cars	150	m	150	m		m
	max speed	70	km/h	70	km/h		km/h
	length vehicles block:	470	m	316	m		m
calculus parameters	length tunnel:	11600	m	12895	m		m
	blocks in the tunnel:	49	blocchi	82	blocchi		blocchi
	per types of vehicle:	98	cars	82	auto		auto
		49	HDV	82	tir		tir
	time passing with a speed of 70 km/h:	10	min	11	min		min
tunnel capacity	per hour:	588	cars/h	541	auto/h		auto/h
		294	HDV/h	541	tir/h		tir/h
	per day:	14112	cars/day	12989	auto/gg	29000	auto/gg
		7056	HDV/day	12989	tir/gg	4000	tir/gg

Corridor capacity was calculated based on the estimated maximum number of vehicles a day transiting in the three tunnels, account taken of the constraints imposed by the tunnels' regulations.

These are maximum flows calculated assuming a continuous flow of vehicles. For the Gotthard, declared capacity values were adopted.

This kind of evaluation is of quite some interest in that the traffic limitations determined by the different tunnels' safety regulations impose structural limits on transits along the corridors with tunnels, penalizing the corridors without infrastructures that come with limitations.

In order to compare the information from the different corridors, with reference to tunnels, data can be standardised by mileage (in kilometres) as shown in the following table

Corridor	Cars/day*km	HDVs/day*km
GOTTHARD	1716	237
MONT BLANC	1217	608
FREJUS	1007	1007

The information highlights the importance of the various tunnel regulations on traffic flow intensity in the case of infrastructures operating full load.

MONITORING NETWORK

The following monitoring networks were used to collect most of the data collected by MONITRAF partners in the four corridors of the study:

- the network measuring traffic flows (motorways and tunnels)
- the network measuring air quality to analyse the air pollution produced by transalpine traffic
- stations measuring the noise produced by vehicles in transit.

In the following picture are the locations of the measurement stations divided by type of station.

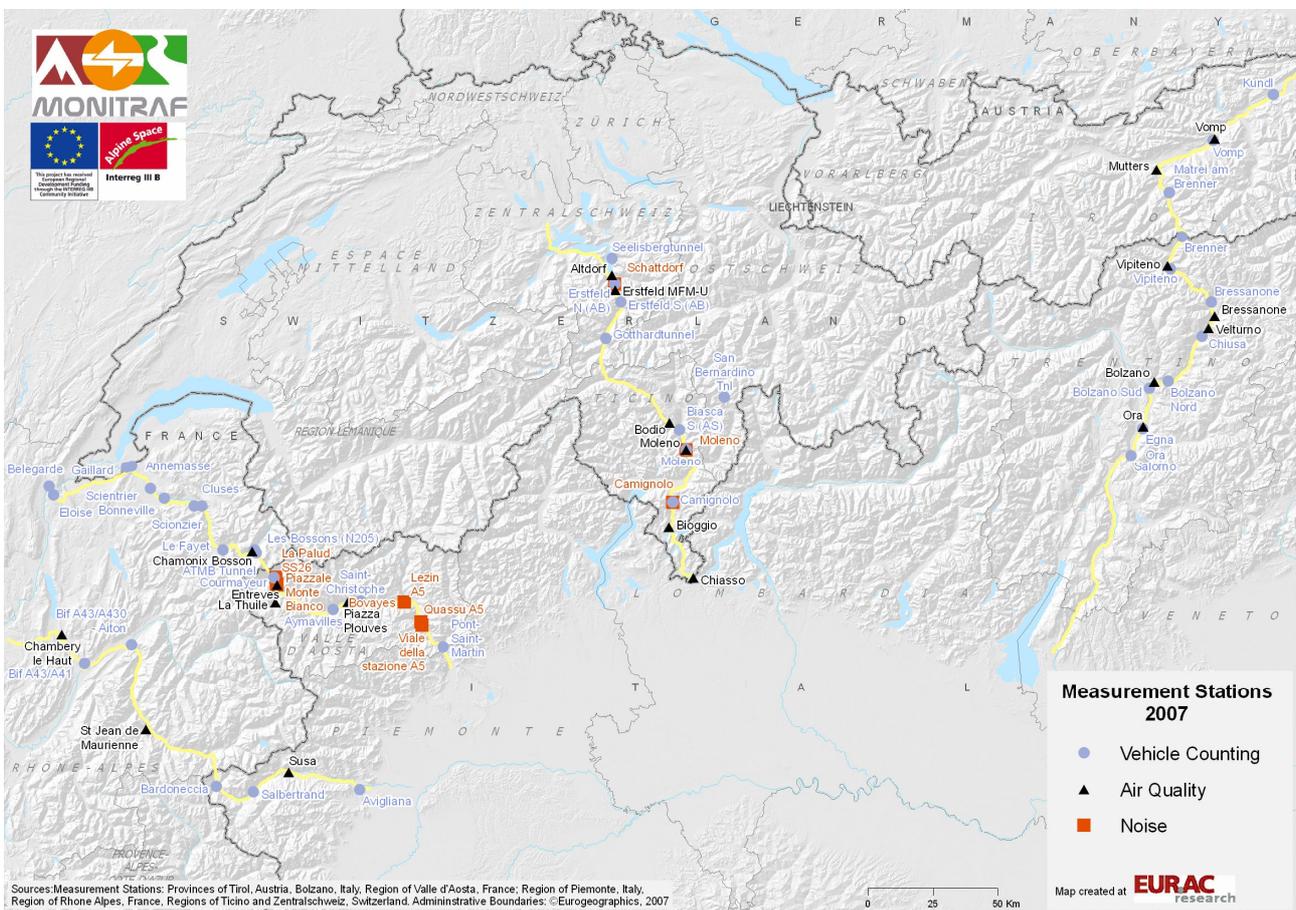


Figure 4: monitoring stations position in the MONITRAF corridors

Traffic flows and air quality are measured in all four MONITRAF corridors while noise is only monitored along the Gotthard and the Aosta Valley.

Below are the data of the single stations

TRAFFIC MEASUREMENT STATIONS

Counting station 150 Seelisbergtunnel		
DB-Code-Nr.:		156
Municipality:		
Coordinates:	Latitude (UTM):	471133
	Longitude (UTM):	5199141
Responsible counting station:	for	FEDRO
Form of collection:	Motorway exit:	
	Automatic counting station:	yes
Counting station 150 Gotthardtunnel		
DB-Code-Nr.:		150
Municipality:		
Coordinates:	Latitude (UTM):	468778
	Longitude (UTM):	5168299
Responsible counting station:	for	FEDRO
Form of collection:	Motorway exit:	
	Automatic counting station:	yes
Counting station 044 San Bernardino		
DB-Code-Nr.:		044
Municipality:		
Coordinates:	Latitude (UTM):	514243
	Longitude (UTM):	5145698
Responsible counting station:	for	FEDRO
Form of collection:	Motorway exit:	
	Automatic counting station:	yes
Counting station 166 Biasca S (AS)		
DB-Code-Nr.:		166
Municipality:		
Coordinates:	Latitude (UTM):	496992
	Longitude (UTM):	5133140
Responsible counting station:	for	FEDRO
Form of collection:	Motorway exit:	
	Automatic counting station:	yes
Counting station 195 Erstfeld S (AB)		

DB-Code-Nr.:		195
Municipality:		
Coordinates:	Latitude (UTM):	474434
	Longitude (UTM):	5182283
Responsible for counting station:	FEDRO	
Form of collection:	Motorway exit:	
	Automatic counting station:	yes
Counting station 251 Erstfeld N (AB)		
DB-Code-Nr.:		251
Municipality:		
Coordinates:	Latitude (UTM):	472126
	Longitude (UTM):	5189323
Responsible for counting station:	FEDRO	
Form of collection:	Motorway exit:	
	Automatic counting station:	Yes
Counting station Moleno		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	499584
	Longitude (UTM):	5125548
Responsible for counting station:	Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, +41 91 814 3817	
Form of collection:	Motorway exit:	
	Automatic counting station:	Yes
Counting station Camignolo		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	494494
	Longitude (UTM):	5104868
Responsible for counting station:	Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, +41 91 814 3817	
Form of collection:	Motorway exit:	
	Automatic counting station:	Yes
Counting station 8045 Matrei am Brenner		
DB-Code-Nr.:	8045	
Municipality:		
Coordinates:	Latitude (UTM):	685232

	Longitude (UTM):	5224987
Responsible for counting station:	Asfinag	
Form of collection:	Motorway exit:	
	Automatic counting station:	Induktionsschleife
Counting station 8046 Vomp		
DB-Code-Nr.:	8046	
Municipality:		
Coordinates:	Latitude (UTM):	702138
	Longitude (UTM):	5245119
Responsible for counting station:	Asfinag	
Form of collection:	Motorway exit:	
	Automatic counting station:	Induktionsschleife
Counting station 8173 Kundl		
DB-Code-Nr.:	8173	
Municipality:		
Coordinates:	Latitude (UTM):	725429
	Longitude (UTM):	5262836
Responsible for counting station:	Asfinag	
Form of collection:	Motorway exit:	
	Automatic counting station:	Induktionsschleife
Counting station Brenner		
DB-Code-Nr.:		
Municipality:		Brenner
Coordinates:	Latitude (UTM):	690153
	Longitude (UTM):	5207645
	Z-coord (height)	1381
Responsible for counting station:	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:	Exit
	Automatic counting station:	
Counting station Sterzing/Vipiteno		
DB-Code-Nr.:		
Municipality:		Vipiteno
Coordinates:	Latitude (UTM):	685704
	Longitude (UTM):	5195183
	Z-coord (height)	937

Responsible counting station:	for	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:		Exit
	Automatic counting station:		
Counting station Brixen/Bressanone			
DB-Code-Nr.:			
Municipality:			
Coordinates:	Latitude (UTM):		701466
	Longitude (UTM):		5182325
	Z-coord (height)		720.5
Responsible counting station:	for	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:		Exit
	Automatic counting station:		
Counting station Klausen/Chiusa			
DB-Code-Nr.:			
Municipality:			Chiusa
Coordinates:	Latitude (UTM):		697977
	Longitude (UTM):		5169199
	Z-coord (height)		535
Responsible counting station:	for	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:		Exit
	Automatic counting station:		
Counting station Bozen Nord/Bolzano Nord			
DB-Code-Nr.:			
Municipality:			Bolzano
Coordinates:	Latitude (UTM):		684808
	Longitude (UTM):		5151826
	Z-coord (height)		406
Responsible counting station:	for	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:		Exit
	Automatic counting station:		
Counting station Bozen Süd/Bolzano Sud			
DB-Code-Nr.:			
Municipality:			Bolzano
Coordinates:	Latitude (UTM):		677708
	Longitude (UTM):		5149217

	Z-coord (height)	248
Responsible for counting station:	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:	Exit
	Automatic counting station:	
Counting station Neumarkt-Auer/Egna-Ora		
DB-Code-Nr.:		
Municipality:		Ora
Coordinates:	Latitude (UTM):	675232
	Longitude (UTM):	5133729
	Z-coord (height)	215
Responsible for counting station:	Autostrada del Brennero S.P.A. / Brennerautobahn A.G.	
Form of collection:	Motorway exit:	Exit
	Automatic counting station:	
Counting station GEIE Tunnel Mont Blanc		
DB-Code-Nr.:1		
Municipality:	Courmayeur	
Coordinates:	Latitude (UTM):	341061
UTM 32	Longitude (UTM):	5075867
Responsible for counting station:	GEIE Tunnel del Monte Bianco	
Form of collection:	Motorway exit:	X
	Automatic counting station:	
Counting station SISEX Traforo del Grand St. Bernard		
DB-Code-Nr.:2		
Municipality:	Saint-Rhemy en Bosses	
Coordinates:	Latitude (UTM):	357382
	Longitude (UTM):	5079181
Responsible for counting station:	SISEX - Traforo del Gran San Bernardo	
Form of collection:	Motorway exit:	
	Automatic counting station:	X
Counting station SAV A5: Pont-Saint-Martin		
DB-Code-Nr.:3		
Municipality:	Pont-Saint-Martin	
Coordinates:	Latitude (UTM):	406278
	Longitude (UTM):	5049007
Responsible for counting station:	SAV	

Form of collection:	Motorway exit:	X
	Automatic counting station:	
Counting station SAV A5: Aosta EST		
DB-Code-Nr.:4		
Municipality:	Saint-Christophe	
Coordinates:	Latitude (UTM):	374450
	Longitude (UTM):	5066537
Responsible for counting station:	SAV	
Form of collection:	Motorway exit:	X
	Automatic counting station:	
Counting station SAV A5: Aosta OVEST		
DB-Code-Nr.:5		
Municipality:	Aymavilles	
Coordinates:	Latitude (UTM):	363837
	Longitude (UTM):	5063502
Responsible for counting station:	SAV	
Form of collection:	Motorway exit:	X
	Automatic counting station:	
Counting station ATMB Tunnel		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	334274
	Longitude (UTM):	5085423
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Les Bossons (N205)		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	333709
	Longitude (UTM):	5086460
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Le Fayet - Cluses		
DB-Code-Nr.:		

Municipality:		
Coordinates:	Latitude (UTM):	321674
	Longitude (UTM):	5086333
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Cluses – Scionzier		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	313483
	Longitude (UTM):	5103328
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Scionzier - Bonneville		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	310413
	Longitude (UTM):	5103420
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Bonneville - Scientrier		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	299112
	Longitude (UTM):	5106403
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Scientrier – Gaillard		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	293618
	Longitude (UTM):	5110160
Responsible for counting station:		

Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Annemasse – Eloise		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	286513
	Longitude (UTM):	5119021
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Eloise – Bellegarde		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	256581
	Longitude (UTM):	5107607
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Bellegarde - Limite Concession		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	254777
	Longitude (UTM):	5111001
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Station A 43 (Section Bif A43/A41S - Bif A43/A430)		
DB-Code-Nr.:		
Municipality:	Chambéry	
Coordinates:	Latitude (UTM):	268454
	Longitude (UTM):	5042504
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Station A 43 (Section Bif A43/A430 - Aiton)		
DB-Code-Nr.:		
Municipality:	Alberville	

Coordinates:	Latitude (UTM):	286552
	Longitude (UTM):	5049806
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Station SFTRF Tunnel		
DB-Code-Nr.:		
Municipality:		
Coordinates:	Latitude (UTM):	
	Longitude (UTM):	
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Bardonecchia		
DB-Code-Nr.:		
Municipality:	Bardonecchia	
Coordinates:	Latitude (UTM):	318988
	Longitude (UTM):	4994781
Responsible for counting station:	Salvatore SERGI	
Form of collection:	Motorway exit:	
	Automatic counting station:	
Counting station Salbertrand		
DB-Code-Nr.:		
Municipality:	Salbertrand	
Coordinates:	Latitude (UTM):	333368
	Longitude (UTM):	4992536
Responsible for counting station:		
Form of collection:	Motorway exit:	
	Automatic counting station:	Barriera sull'autostrada
Counting station Avigliana		
DB-Code-Nr.:		
Municipality:	Avigliana	
Coordinates:	Latitude (UTM):	374078
	Longitude (UTM):	4993453
Responsible for counting station:		

Form of collection:	Motorway exit:	
	Automatic counting station:	Barriera sull'autostrada

AIR QUALITY MEASUREMENT STATIONS

Air quality measurement stations supply punctual data which must be assessed based on the positioning of the stations compared to the sources of pollution. Stations are classified based on their position in the territory and based on the main sources of pollution, as defined by European Commission Decision of 17/10/2001 (752/2001).

Location	<u>Urban</u> (built-up area) <u>Suburban</u> (spread built-up area integrated with non built-up areas) <u>Rural</u> (zones which do not meet the former criteria)
Source	<u>Traffic</u> (location where pollution is influenced by neighbouring roads) <u>Industry</u> (location where pollution is influenced by individual industrial sources or neighbouring industrial zones) <u>Background</u> (location where pollution is influenced neither by road traffic nor by industrial activities)

For the purpose of the MONITRAF analysis, the stations positioned along the motorways crossed by Alpine traffic rather than the ones located in town centres or in rural areas, were selected for data processing, in that they allow for a more direct evaluation of the impact on air quality.

Notice that in the Fréjus corridor, both the Italian and French stations are positioned far away from the roads leading to the tunnel.

Erstfeld MFM-U		
DB-Code-Nr.:		
Municipality:	Kanton Uri	Erstfeld
Coordinates:	Latitude (UTM):	472412
	Longitude (UTM):	5186934
	height:	506
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	R
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	Chemoluminescence
Collected data (with unit and frequency):		
Altdorf, Gartenmatt		
DB-Code-Nr.:		
Municipality:	Kanton Uri	Altdorf
Coordinates:	Latitude (UTM):	471188
	Longitude (UTM):	5192670

	height:	487
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	R
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	Chemoluminescence
Collected data (with unit and frequency):		
Bioggio		
DB-Code-Nr.:		
Municipality:		Bioggio
Coordinates:	Latitude (UTM):	493098
	Longitude (UTM):	5095430
	height:	290 (meters above sea level)
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):		
Bodio		
DB-Code-Nr.:		
Municipality:		Bodio
Coordinates:	Latitude (UTM):	493329
	Longitude (UTM):	5136009
	height:	320 (meters above sea level)
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	

Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):		
Chiasso		
DB-Code-Nr.:		
Municipality:		Chiasso
Coordinates:	Latitude (UTM):	502354
	Longitude (UTM):	5075813
	height:	230 (meters above sea level)
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	
Type of site:	U = urban; S = suburban; R =country, rural area	U
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):		
Moleno MFM-U		
DB-Code-Nr.:		
Municipality:		Moleno
Coordinates:	Latitude (UTM):	499584
	Longitude (UTM):	5125548
	height:	250 (meters above sea level)
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	
Type of site:	U = urban; S = suburban; R =country, rural area	S (near highway; approximately 10 meters from the road)
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	

Collected data (with unit and frequency):		
Vomp - Raststätte - A12		
DB-Code-Nr.:	2821	
Municipality:	Vomp	
Coordinates:	Latitude (UTM):	702724
	Longitude (UTM):	5245699
	height:	550m
	ellipsoid:	WGS84
Responsible for measurement station:	waldschutz@tirol.gv.at	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	R (rural living area)
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	NO	µg/m ³
	NO ₂	µg/m ³
	PM ₁₀ continuously	µg/m ³
	PM ₁₀ gravimetric	µg/m ³
	wind direction, wind velocity, temperature, humidity, global radiation,	
Mutters - Gärberbach A13		
DB-Code-Nr.:	2223	
Municipality:	Mutters	
Coordinates:	Latitude (UTM):	680400
	Longitude (UTM):	5233849
	height:	680
	ellipsoid:	WGS84
Responsible for measurement station:	waldschutz@tirol.gv.at	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	R (rural living area)

Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	NO	$\mu\text{g}/\text{m}^3$
	NO ₂	$\mu\text{g}/\text{m}^3$
	PM ₁₀ continuously	$\mu\text{g}/\text{m}^3$
Vipiteno		
DB-Code-Nr.:	402111	
Municipality:	Vipiteno	
Coordinates:	Latitude (UTM):	684784
	Longitude (UTM):	5196322
	height:	959
	ellipsoid:	
Responsible for measurement station:	Laboratorio di Chimica Fisica	
Type of measurement station:	T= traffic; I = industrial; B= background	B
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	b
Collected data (with unit and frequency):	CO	1 hour in mg/m^3
	NO ₂	1 hour in $\mu\text{g}/\text{m}^3$
	O ₃	1 hour in $\mu\text{g}/\text{m}^3$
	SO ₂	1 hour in $\mu\text{g}/\text{m}^3$
	PM ₁₀	1 hour in $\mu\text{g}/\text{m}^3$
Bressanone		
DB-Code-Nr.:	402101	
Municipality:	Bressanone	
Coordinates:	Latitude (UTM):	702871
	Longitude (UTM):	5176947
	height:	564
	ellipsoid:	
Responsible for measurement station:	Laboratorio di Chimica Fisica	
Type of measurement station:	T= traffic; I = industrial; B= background	T

Type of site:	U = urban; S = suburban; R =country, rural area	U
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	b
Collected data (with unit and frequency):	CO	1 hour in mg/m ³
	NO2	1 hour in µg/m ³
	O3	1 hour in µg/m ³
	PM10	1 hour in µg/m ³
Velturno		
DB-Code-Nr.:	402121	
Municipality:	Velturno	
Coordinates:	Latitude (UTM):	700347
	Longitude (UTM):	5172320
	height:	550
	ellipsoid:	
Responsible for measurement station:	Laboratorio di Chimica Fisica	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	B
Collected data (with unit and frequency):	CO	1 hour in mg/m ³
	NO2	1 hour in µg/m ³
	O3	1 hour in µg/m ³
	PM10	1 hour in µg/m ³
	PM2.5	1 hour in µg/m ³
Measurement station AB 1 exists since May 2004		
Bolzano		
DB-Code-Nr.:	402114	
Municipality:	Bolzano	
Coordinates:	Latitude (UTM):	679587
	Longitude (UTM):	5151740
	height:	260

	ellipsoid:	
Responsible for measurement station:	Laboratorio di Chimica Fisica	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	U
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	B
Collected data (with unit and frequency):	CO	1 hour in mg/m ³
	NO2	1 hour in µg/m ³
	SO2	1 hour in µg/m ³
	PM10	1 hour in µg/m ³
	PM2.5	1 hour in µg/m ³
Ora		
DB-Code-Nr.:	2102124	
Municipality:	Ora	
Coordinates:	Latitude (UTM):	675370
	Longitude (UTM):	5134472
	height:	220
	ellipsoid:	
Responsible for measurement station:	Laboratorio di Chimica Fisica	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	B
Collected data (with unit and frequency):	CO	1 hour in mg/m ³
	NO2	1 hour in µg/m ³
	O3	1 hour in µg/m ³
	PM10	1 hour in µg/m ³
	PM2.5	1 hour in µg/m ³
Measurement station AB 2 exists since December 2005		
Plouves		

DB-Code-Nr.:	Piazza Plouves	
Municipality:	Aosta	
Coordinates:	Latitude (UTM):	369670
	Longitude (UTM):	5066380
	height:	
	ellipsoid:	UTM 32
Responsible for measurement station:	ARPA VALLE D'AOSTA	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	U
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	µg/m3 - hour	
La Thuile		
DB-Code-Nr.:	La Thuile	
Municipality:	La Thuile	
Coordinates:	Latitude (UTM):	341880
	Longitude (UTM):	5066240
	height:	
	ellipsoid:	UTM 32
Responsible for measurement station:	ARPA VALLE D'AOSTA	
Type of measurement station:	T= traffic; I = industrial; B= background	B
Type of site:	U = urban; S = suburban; R =country, rural area	R
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	µg/m3 - hour	
Châtillon		
DB-Code-Nr.:	Châtillon	
Municipality:	Châtillon	
Coordinates:	Latitude (UTM):	393051
	Longitude (UTM):	5067171
	height:	

	ellipsoid:	UTM 32
Responsible for measurement station:	ARPA VALLE D'AOSTA	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	µg/m3 - hour	
Entrèves		
DB-Code-Nr.:	Entreves	
Municipality:	Courmayeur	
Coordinates:	Latitude (UTM):	342480
	Longitude (UTM):	5072920
	height:	
	ellipsoid:	UTM 32
Responsible for measurement station:	ARPA VALLE D'AOSTA	
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):	µg/m3 - hour	
Chamonix Bosson		
DB-Code-Nr.:		3
Municipality:	Chamonix Bosson	
Coordinates:	Latitude (UTM):	332854
	Longitude (UTM):	5085936
	height: 1000 m	
	ellipsoid:	
Responsible for measurement station:	L'air de l'ain et des pays de Savoie	
Type of measurement	T= traffic; I = industrial; B= background	T

station:		
Type of site:	U = urban; S = syburban; R =country, rural area	R
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):		
Chambéry le Haut		
DB-Code-Nr.:	1	
Municipality:	Chambéry le Haut	
Coordinates:	Latitude (UTM):	259676
	Longitude (UTM):	5053855
	height: 367 m	
	ellipsoid:	
Responsible for measurement station:	L'air de l'ain et des pays de Savoie	
Type of measurement station:	T= traffic; I = industrial; B= background	B
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	
Collected data (with unit and frequency):		
St Jean de Maurienne		
DB-Code-Nr.:	2	
Municipality:	St Jean de Maurienne	
Coordinates:	Latitude (UTM):	292053
	Longitude (UTM):	5016889
	height: 555 m	
	ellipsoid:	
Responsible for measurement station:	L'air de l'ain et des pays de Savoie	
Type of measurement station:	T= traffic; I = industrial; B= background	B
Type of site:	U = urban; S = syburban; R =country, rural area	U
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	

Collected data (with unit and frequency):		
Susa		
DB-Code-Nr.:		
Municipality:	<i>Susa</i>	
Coordinates:	Latitude:	450819
	Longitude:	70301
	height:	494
	ellipsoid:	WGS 84
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	B
Type of site:	U = urban; S = suburban; R =country, rural area	S
Method of measurement	g = gravimetric measures; b = beta attenuation; m = oscillating microbalance ; n = nephelometric measures	chemiluminescence
Collected data (with unit and frequency):	$\mu\text{g}/\text{m}^3$	Hourly

NOISE MEASUREMENT STATIONS

The only noise measurement stations which supplied useable data for the processing of indicator 11 were the ones in the Swiss cantons along the Gotthard and the Aosta Valley

In the first case the stations are permanent and supply continuous sets of data, whilst in the latter case the stations are mobile and supply one week's data per season

Schattdorf (Erstfeld) MFM-U		
DB-Code-Nr.:		
Municipality:	Kanton Uri	Erstfeld
Coordinates:	Latitude (UTM):	472136
	Longitude (UTM):	5189308
	height:	508
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	S
Collected data (with unit and frequency):		
TI_A2_Camignolo		
DB-Code-Nr.:		
Municipality:	Camignolo	
Coordinates:	Latitude (UTM):	494494
	Longitude (UTM):	5104868
	height:	3.2m
	ellipsoid:	
Responsible for measurement station:	Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, Marco Andretta +41 91 814 3817	
Type of measurement station:	Automatic continuous SALTO 01dB station from NORSONIC	
Type of site:	MFM-U Highway monitoring site	
Method of measurement	2 Microfones	
Collected data (with unit and frequency):		
1 sec	Pegelverlauf Leq(A)	

30 min	Leq (A) Lmin (A) Lmax (A) Lmin (LIN) Lmax (LIN) Spektrum in Terzen (20 Hz - 20 kHz) Pegelstatistik spektral (LIN) in Terzen (20 Hz-20 kHz, Pegelintervallbreite von 1 dB, Range 30-110 dB) Gesamte Pegelstatistik (A), (Pegelintervallbreite von 1 dB(A), Range 30-110 dB(A))	
TI_A2_Moleno		
DB-Code-Nr.:		
Municipality:	Moleno	
Coordinates:	Latitude (UTM):	499584
	Longitude (UTM):	5125548
	height:	3.2m
	ellipsoid:	
Responsible for measurement station:	Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, Marco Andretta +41 91 814 3817	
Type of measurement station:	Automati continuous SALTO 01dB station from NORSONIC	
Type of site:	MFM-U Highway monitoring site	
Method of measurement	2 Microfones	
Collected data (with unit and frequency):		
1 sec	Pegelverlauf Leq(A)	
30 min	Leq (A) Lmin (A) Lmax (A) Lmin (LIN) Lmax (LIN) Spektrum in Terzen (20 Hz - 20 kHz) Pegelstatistik spektral (LIN) in Terzen (20 Hz-20 kHz, Pegelintervallbreite von 1 dB, Range 30-110 dB) Gesamte Pegelstatistik (A), (Pegelintervallbreite von 1 dB(A), Range 30-110 dB(A))	
2004: Attenzione: nel settembre 2004 è stato sostituito il manto stradale con un asfalto a bassa emissività (fonoassorbente), nel corso degli anni seguenti le caratteristiche si sono però deteriorate 2006: Chiusura tunnel del Gottardo nel mese di Giugno, dati non tenuti in considerazione nei calcoli		

delle medie		
Courmayeur - loc. La Palud S.S. 26		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Courmayeur	Loc. La Palud S.S.26
Coordinates:	Latitude (UTM):	5075955
	Longitude (UTM):	341915
	height:	1340
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = suburban; R =country, rural area	S
Collected data (with unit and frequency):		
Courmayeur - loc. Villette S.S. 26		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Courmayeur	loc. Villette S.S. 26
Coordinates:	Latitude (UTM):	5073369
	Longitude (UTM):	342198
	height:	1220
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	S
Collected data (with unit and frequency):		
Courmayeur - piazzale Monte Bianco S.S. 26		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Courmayeur	Piazz. Monte Bianco S.S.26
Coordinates:	Latitude (UTM):	5073054
	Longitude (UTM):	342351
	height:	1210
	ellipsoid:	

Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	S
Collected data (with unit and frequency):		
Pontey - loc. Lezin A5		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Pontey	loc. Lezin A5
Coordinates:	Latitude (UTM):	5066494
	Longitude (UTM):	391407
	height:	470
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	R
Collected data (with unit and frequency):		
Verrès - loc. Quassù A5		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Verres	loc. Quassù A5
Coordinates:	Latitude (UTM):	5058707
	Longitude (UTM):	397632
	height:	430
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	R
Collected data (with unit and frequency):		
Verrès - Viale della stazione A5		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Verres	Viale della stazione A5
Coordinates:	Latitude (UTM):	5057507
	Longitude (UTM):	398088

	height:	370
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	S
Collected data (with unit and frequency):		
Pontey - Loc. Bovayes A5		
DB-Code-Nr.:		ED50 UTM 32N
Municipality:	Pontey	loc. Bovayes
Coordinates:	Latitude (UTM):	5066405
	Longitude (UTM):	391250
	height:	480
	ellipsoid:	
Responsible for measurement station:		
Type of measurement station:	T= traffic; I = industrial; B= background	T
Type of site:	U = urban; S = syburban; R =country, rural area	R
Collected data (with unit and frequency):		

INDICATOR DATASHEET

Indicator:				Traffic volume		
Number:	1	Name:	Traffic volume all vehicles			
	2		Traffic volume heavy duty vehicles			
WP7 Codification:	-	Main category:	Traffic	Unit:	vehicles/day (veh/d)	
	-				vehicles/day (veh/d)	
Level:						Stations
Objective:	Basis for assessment of MONITRAF scenarios					
Definition of indicator:	1	Yearly average of mean daily traffic				
	2	Yearly average of mean daily traffic of heavy duty vehicles				
Calculation:	1	Total number of all vehicles per year in both directions / 365				
	2	Total number of heavy vehicles per year in both directions / 365				
Data:						
Name:	Vehicules/day (veh/d)		Unit:	Number:	Periodicity:	annual
Period:	2000-2005	Reference period:	1990			
Definition of data to be collected:	Daily number of vehicles in both directions counted at the chosen counting stations, divided into type of vehicle. At the motorway exits access (in) and exit (out) data will be collected.					
Data source (citation basis):	<p>CS: Automatic Traffic Counts Data (1997-2005). Owner: Federal Road Office (FEDRO). Data sources: AVZ database and AVZ PDF on www.verkehrsdaten.ch TICINO: Repubblica e cantone</p> <p>TIC: Osservatorio ambientale svizzera italiana, Marco Andretta +41 91 814 3817; S_TYR: Data source: Autostrada del Brennero S.P.A. / Brennerautobahn A.G.</p>					
Other Comments:	<p>TIC: Data not checked and not completed, if for one month the counter doesn't work the lacking data are not completed with statistic methods.</p> <p>Attention: in 2005 there has been the closing of the St. Gottardo tunnel for almost one month.</p> <p>S_TYR: exit data submitted by: Wirtschaftsforschungsinstitut, I-39100 Bozen, Silbergasse 6, Postfach 441, Tel. 0471/945706, Fax 0471/945712, wifo@handelskammer.bz.it, www.handelskammer.bz.it/wifodata on motorway exits updated on: 22.02.07. data-counting stations submitted by: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige)</p>					
Notes:						
Type of Vehicle:						
Automatic counting station:						
Category (code/abbreviation):	Description					
CS						

CA	Buses and Coaches (>3.5 t)
LI	Light Duty Vehicles (<3.5 t)
LW	Heavy Duty Vehicles (>3.5 t)
LZ	Heavy Duty Vehicles with trailer (>3.5 t)
MR	Motorcycle (<3.5t)
PW	Passenger Cars (<3.5 t)
SZ	Articulated Lorry (>3.5 t)
Lk1	Vehicles with a length under 2.7 m
Lk2	Vehicles with a length between 2.7 and 6 m
Lk3	Vehicles with a length between 6 and 12.5 m
Lk4	Vehicles with a length over 12.5 m
TIC	
1	Bus (German: Bus)
2	Motorcycles (German: Motorräder)
3	Passenger vehicle (German: Bus)
4	Van (German: Lieferwagen)
5	Truck (German: Lastwagen)
6	Heavy duty vehicles (German: Lasterzüge)
7	Heavy duty vehicles (German: Sattelzüge)
TYR	
A	KFZ
B	LkwÄ
C	LkwGV
D	SLZ
S_TYR	
Leichtverkehr / Traffico leggero	Klasse A / classe A
Klasse A / classe A	Motor vehicles with 2 axis and a maximum height of 1,30 metre at the first axis.
Schwerverkehr / Traffico pesante	Klasse B - Klasse 5 / classe B - classe 5
Klasse B / classe B	Motor vehicles with 2 axis and a height of more than 1,30 metre at the first axis.
Klasse 3 / classe 3	Motor vehicles with 3 axis
Klasse 4 / classe 4	Motor vehicles with 4 axis
Klasse 5 / classe 5	Motor vehicles with 5 or more axis (Sattelschlepper / motr. p. semirim)
Motorway exits:	
Category (code/ abbreviation):	Description
S_TYR	
Leichtverkehr /	Klasse A / classe A

Traffico leggero	
Klasse A / classe A	Motor vehicles with 2 axis and a maximum height of 1,30 metre at the first axis.
Schwerverkehr / Traffico pesante	Klasse B - Klasse 5 / classe B - classe 5
Klasse B / classe B	Motor vehicles with 2 axis and a height of more than 1,30 metre at the first axis.
Klasse 3 / classe 3	Motor vehicles with 3 axis
Klasse 4 / classe 4	Motor vehicles with 4 axis
Klasse 5 / classe 5	Motor vehicles with 5 or more axis (Sattelschlepper / motr. p. semirim)

Data quality

A discrepancy was found in the way heavy duty vehicle flow data were collected; along the Italian-French axis vehicles are registered in relation to their weight, whilst along the Italian Austrian axis they are registered based on their length. At the Gotthard, the weight criterion is to be used now.

Table 1: Heavy duty vehicle classification criteria

Corridor side	Criterion
Fréjus – France	weight > 3.5 ton , with coaches
Fréjus – Italia	weight > 3.5 ton , with coaches
Mont Blanc – France	weight > 3.5 ton , with coaches
Mont Blanc – Italia	weight > 3.5 ton , with coaches
Gotthard – CSC	weight > 3.5 ton, without buses and coaches (2005) and L > 12.5 m (1990-2004)
Gotthard – Ticino	weight > 3.5 ton , with coaches
Brenner - Tyrol	2 axis or more and h>1.3 m (B); with coaches
Brenner – Sud Tirolo	2 axis or more and h>1.3 m (B); with coaches

Monitraf countries have different vehicle classification systems (see table 1); this has required a different interpretation of the various vehicle classes and their standardisation, as shown in the table. Consequently the basic data were unified and the elaboration refers to a very simple, somewhat approximate classification. Furthermore, the time sets are in some cases incomplete because of the closing of the tunnels or because of the malfunctioning of the measurement stations: 1990 data are particularly incomplete. In the case of the Ticino, please notice that there is no measurement data until the year 2004.

IND.01-02	INDICATORS-VALUES	Type of Vehicle	Data Counting station	Data Motorway exit	Metadata counting station+exit
CS	data detail	2 different types	1997, 2000-2005	nd	3 count. stations
	detail scale		veh/d		
	data completeness	Y	54%	NO	Y
TIC	data detail	Y (only 1 typology)	2004-2006	nd	2 count stations
	detail scale		veh/d		
	data completeness	Y	37.5%	NO	Y
TYR	data detail	to be explained	1990, 2000-2005	nd	3 count. Stations
	detail scale		veh/d		
	data completeness	Y	95%	NO	Y

S_TYR	data detail	Y	1990, 2000-2005	1994-1995; 2000-2006	7 exit stations
	detail scale		veh/y	in/out veh/m, by veh. class	
	data completeness	Y	100%	100%	Y
VDA	data detail	to be reviewed	1990/98; 2000-2005	nd	4 exit + 1 counting stations
	detail scale		veh/y		
	data completeness		97%	NO	Y
RA (MB)	data detail	not specified	1990; 2000-2005 (2006)	nd	nd
	detail scale		veh/d		
	data completeness	NO	86%	NO	NO
RA (FR)	data detail	not specified	1990; 2000-2005 (2006)	nd	nd
	detail scale		veh/d		
	data completeness	NO	91%	NO	NO
PI	data detail	not specified	2000-2005	nd	3 counting station
	detail scale		veh/y		
	data completeness	NO	(100%) but no 1990	NO	Y

Table 2: IND. 1 and 2 - HDVs and total vehicles fluxes (daily average)

Vehicle types:	1990		2000		2001		2002		2003		2004		2005	
	TGM HDV	TGM tot												
Fréjus														
Chambéry-Aiton	X	X	5,699	22,745	5,899	23,583	5,820	23,733	5,308	23,629	4,321	23,730	3,525	23,217
A 43			4,576	10,951	4,747	11,386	4,626	10,913	4,082	10,415	3,455	10,282	2,633	9,453
Fréjus Tunnel	1,480	2,726	4,244	7,429	4,243	7,317	4,043	6,654	3,416	5,735	3,147	5,448	2,196	3,970
Bardonecchia			4,255	7,450	4,243	7,317	4,043	6,654	3,418	5,774	3,156	5,463	2,196	3,969
Salbertrand	nd	nd	4,194	11,856	4,140	12,236	4,052	11,628	2,291	8,256	2,575	8,283	3,557	11,345
Avigliana	nd	nd	4,300	13,716	4,280	13,691	4,151	13,649	2,371	9,769	4,357	13,673	2,391	9,452
M Blanc														
Bellegarde-Limite concession	X	X	2,387	17,736	1,851	18,345	2,033	19,237	2,550	20,452	2,766	20,592	3,346	21,954
Eloise-Bellegarde	X	X	2,076	15,904	1,624	16,449	1,816	17,374	2,335	18,391	2,554	18,605	3,108	19,881
Annemasse-Eloise	X	X	1,543	13,545	1,200	14,209	1,380	15,173	1,895	16,074	2,098	16,473	2,667	17,793
Scientrier-Gaillard	X	X	1,289	22,776	949	24,295	1,140	26,430	1,656	28,412	1,878	29,702	2,438	31,034
Bonneville-Scientrier	X	X	1,789	21,332	1,255	22,478	1,469	24,804	2,082	26,630	2,323	27,616	3,012	28,986
Scionzier-Bonneville	X	X	1,281	16,561	872	17,444	1,079	19,670	1,635	21,262	1,867	22,118	2,527	23,217
Cluses-Scionzier	X	X	860	10,876	598	11,422	812	13,544	1,360	15,014	1,559	15,265	2,208	16,283
Le Fayet-Cluses	X	X	864	12,208	588	13,051	813	15,284	1,365	16,752	1,578	17,234	2,226	17,989
Les Bossons (RN205)	X	13,200	653	13,600	821	14,400	996	16,600	1,575	17,700	1,828	18,100	2,347	18,050
ATMB Tunnel_F	2,130	5,192	X	X	X	X	236	2,799	787	3,874	1,003	4,122	1,646	4,777
Tunnel Mont Blanc	2,130	5,192	0	0	0	0	236	2,799	786	3,874	1,005	4,000	1,646	4,777
Aosta-ovest	X	X	100	3,307	112	3,362	304	5,401	754	6,409	945	6,423	1,555	7,092
Aosta-est	3,648	14,224	539	13,286	608	13,904	840	15,764	1,240	17,038	1,441	16,732	2,039	17,142
Pont St. Martin	405	2,502	682	18,661	742	19,209	996	21,104	1,460	22,863	1,634	22,043	2,229	22,334
Gotthard														
Seelisbergtunnel	1,924	19,679	2,468	20,420	2,285	19,324	1,906	18,119	2,211	20,222	2,078	20,581	2,439	20,245

Erstfeld N (AB)	X	X	X	X	X	X	X	X	X	X	X	X	na	na	2,401	21,895	1,728	14,538
Erstfeld S (AB)	X	X	X	X	X	X	X	X	21,293	X	X	na	na	na	2,389	21,511	1,405	9,481
Hospental S, St. Gotthard	X	X	X	X	X	15	1,308	5	1,248	3	1,641	3	1,713	18	1,883			
Gotthardtunnel	1,919	17,900	3,252	18,673	2,647	2,647	16,497	2,351	15,876	2,751	16,420	2,655	16,464	2,534	16,069			
San Bernardino (Tunnel)	217	5,885	271	6,416	560	560	6,678	497	6,532	333	6,196	341	6,059	411	6,143			
Ticino																		
Biasca	X	X	X	X	X	X	25,093	X	24,361	na	na	2,330	26,999	2,711	27,000			
Moleno	X	X	X	X	X	X	X	X	X	X	X	2,267	21,288	2,727	26,965			
Carnignolo	X	X	X	X	X	X	X	X	X	X	X	2,867	40,373	2,977	41,428			
Brenner																		
Kundl	X	X	5,969	39,954	7,538	41,497	7,663	42,212	7,792	43,109	8,644	44,761	8,621	44,501				
Vomp	5,603	34,769	8,796	49,220	8,725	50,076	8,873	51,927	8,971	52,357	9,029	51,836	9,122	52,093				
Mattei am Brenner	3,084	17,060	5,597	27,539	5,601	28,728	5,613	29,716	5,791	29,708	6,737	30,805	6,773	31,131				
Brennero-Vipiteno	4,107	14,162	7,307	21,697	7,282	22,677	7,612	23,472	7,476	23,203	8,343	24,275	8,188	24,289				
Vipiteno-Bressanone	4,279	15,288	7,660	23,683	7,640	24,721	7,993	25,513	7,899	25,354	8,792	26,596	8,622	26,540				
Bressanone-Chiusa	4,852	17,661	8,592	26,976	8,548	28,132	8,988	28,949	8,983	29,123	9,855	30,285	9,703	30,204				
Chiusa-Bznord	5,330	19,804	9,044	29,624	8,991	30,775	9,444	31,660	9,392	31,717	10,256	32,938	10,129	32,959				
Bznord-Bzsud	4,933	17,171	9,100	28,376	8,936	28,895	9,322	29,516	9,282	29,857	10,118	30,878	9,973	30,796				
Bzsud-Ora	6,297	24,009	10,638	35,971	10,637	37,578	11,262	38,958	11,323	39,684	12,155	40,705	11,927	40,177				
Ora-Salorno	6,397	24,625	10,541	35,608	10,548	40,133	11,108	38,138	11,170	38,922	11,998	39,855	11,805	39,451				

x = no value existent

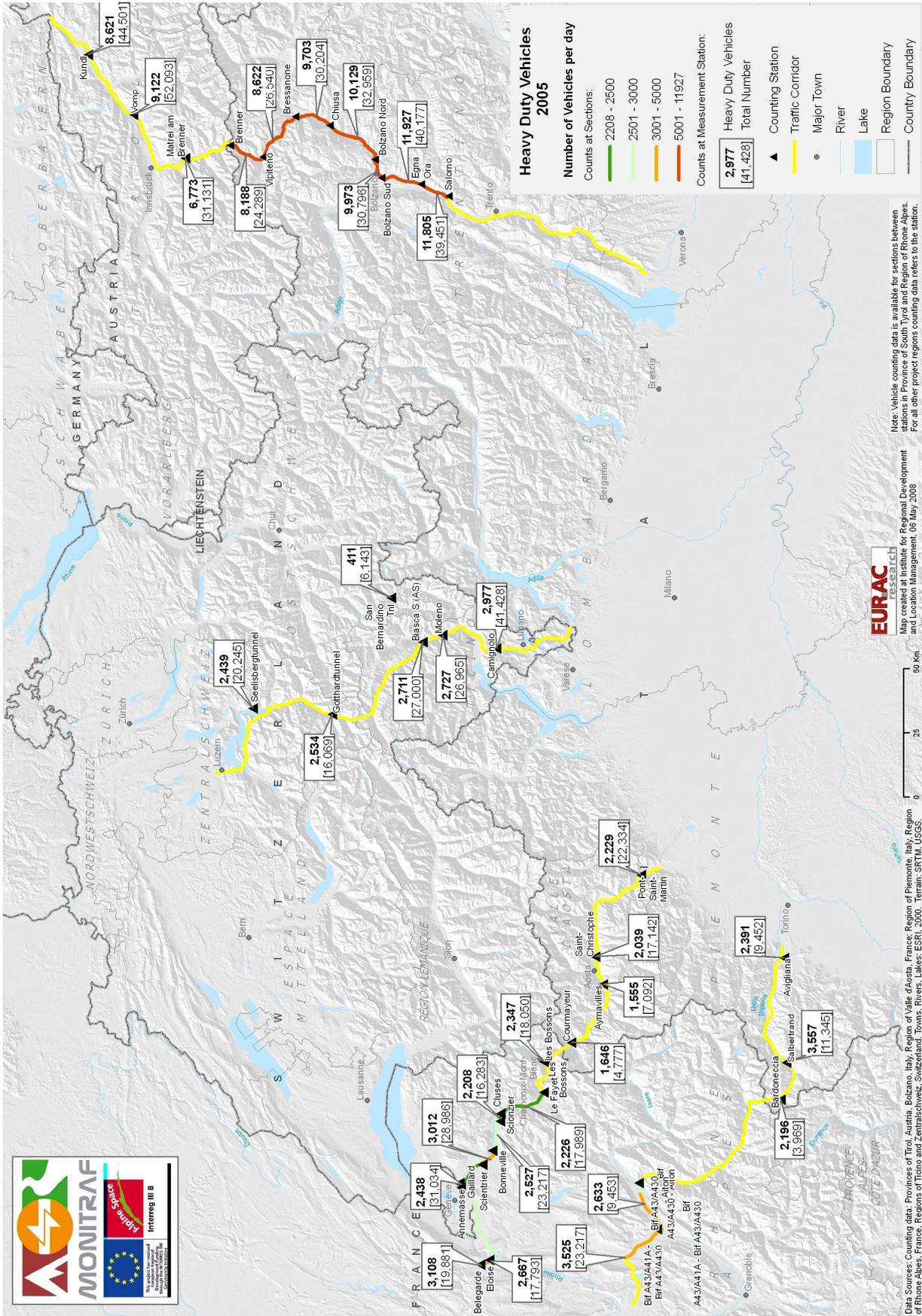
nv = data existent, but not available for this request

na = data not applicable for this request

The total TGM of light and heavy duty vehicles crossing the four Monitraf corridors - motorway traffic - (map fig. 1 and graphs fig.2) highlights that the largest number of vehicles is concentrated at the access of the Alpine valleys. On the way up to the passes, traffic is no longer local and at the border there is solely transborder traffic.

On the two sides of one same corridor there may even be quite significant differences in traffic, due to the greater or lesser importance of local traffic and also due to the segment chosen for the determination of the corridor itself; for example, the French and Austrian side have branched out motorway routes whilst on the Italian side there is one single main

throughfare across the valley to which minor roads connect. This is probably the reason why along the Frejus corridor local traffic on the French side is undoubtedly greater than that on the Italian side. In particular the flux along the Chambéry – Ayton stretch is not comparable with the other motorway stretches taken into consideration; this stresses the complexity of the road network leading to Chambéry and shows how the town is relatively extraneousness to valley or transborder traffic flows. Same thing for the Austrian stations of Vomp and Kundl, now rather far from the valley which descends from the Brenner pass, and which are influenced by traffic flows other than those crossing the Alps.



The analysis of traffic time trends over the period 2000 – 2005 along the four corridors taken into account, can be clearly seen from the following graphs.

The Brenner records a 12% increase with a similar trend for all the intermediate stations.

The Gotthard records -14% traffic; also the other two passes considered present negative values, albeit to a lesser extent (-4% at the San Bernardino and -1% at the Seelisbergtunnel); the sets of data from the other stations are not sufficient to give indications.

The data on the Frejus corridor are negative, with a particularly high value at the tunnel with -47% traffic over the period 2000 – 2005. This value can partly be explained by the reopening of the Mont Blanc Tunnel, closed in 2000-2001 because of the well known accident; however, the trend towards traffic reduction is quite marked also in the period 2004 – 2005 with -27% at a time in which the Mont Blanc Tunnel had already been opened for two years. The trend towards traffic reduction is also quite marked in the other stations of the corridor, with the exception of the French distal stretch (ascribable to traffic dynamics relating to the Chambéry urban centre)

Conversely the Mont Blanc presents a trend towards an average daily increase in traffic, with an increase of 71% compared to 2002, the year it was reopened, and 16% growth between 2004 and 2005. There is a similar trend in the other intermediate stations, with the exception of Aosta Est.

It must however be stressed that the greater the distance from the pass (Brenner, Gotthard), the greater the traffic flows; this suggests that the problem is not only transborder traffic but also the traffic originating in the area or with destination to the passes, and also internal traffic

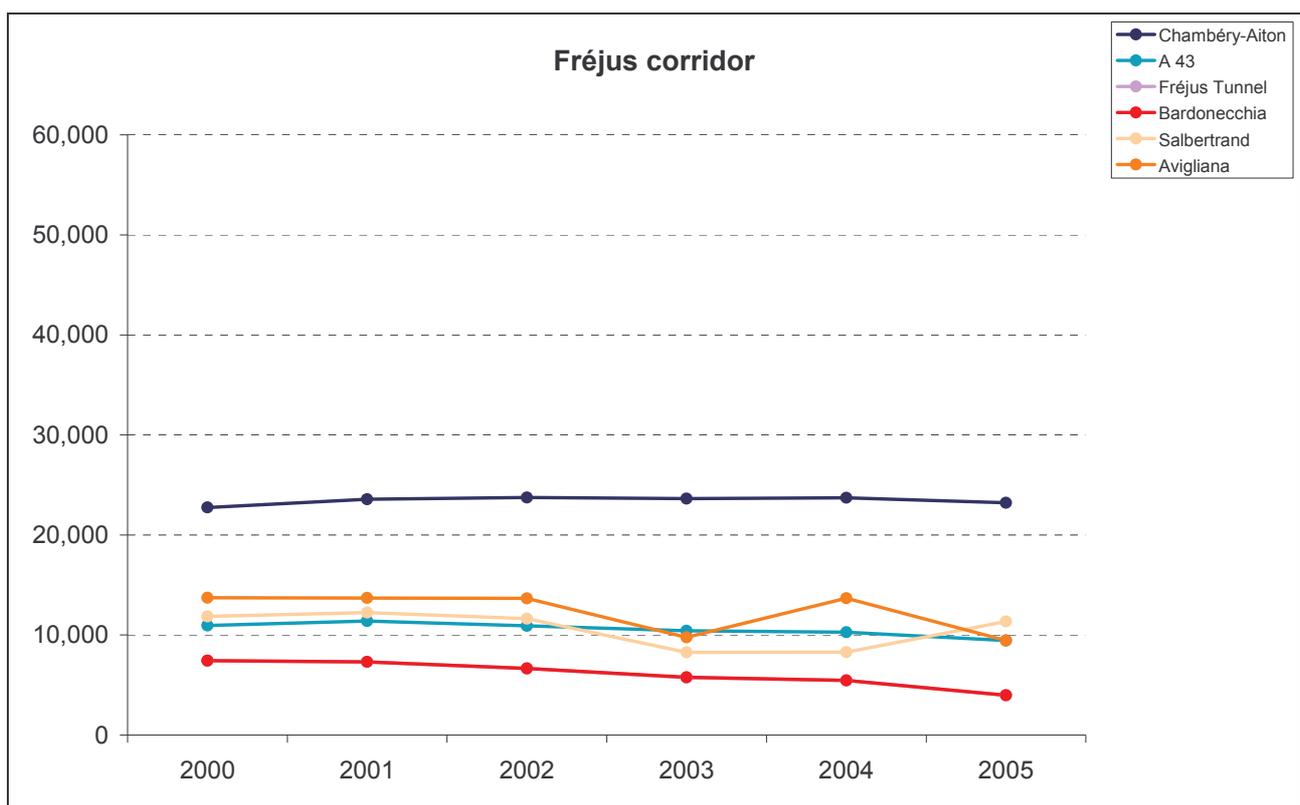


Figure 6: IND. 1 and 2 - vehicles fluxes (daily average vehicle number) per year for Fréjus corridor

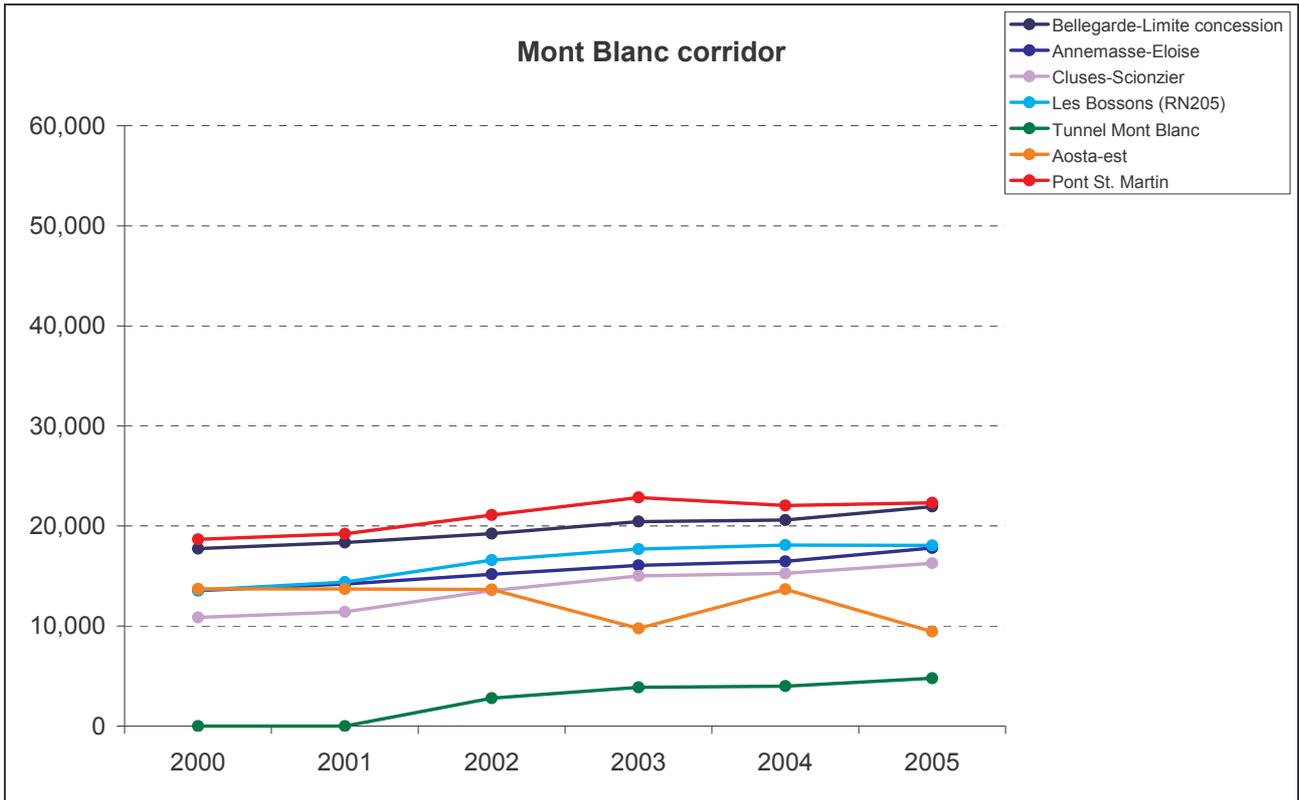


Figure 7: IND. 1 and 2 - vehicles fluxes (daily average vehicle number) per year for Mont Blanc corridor

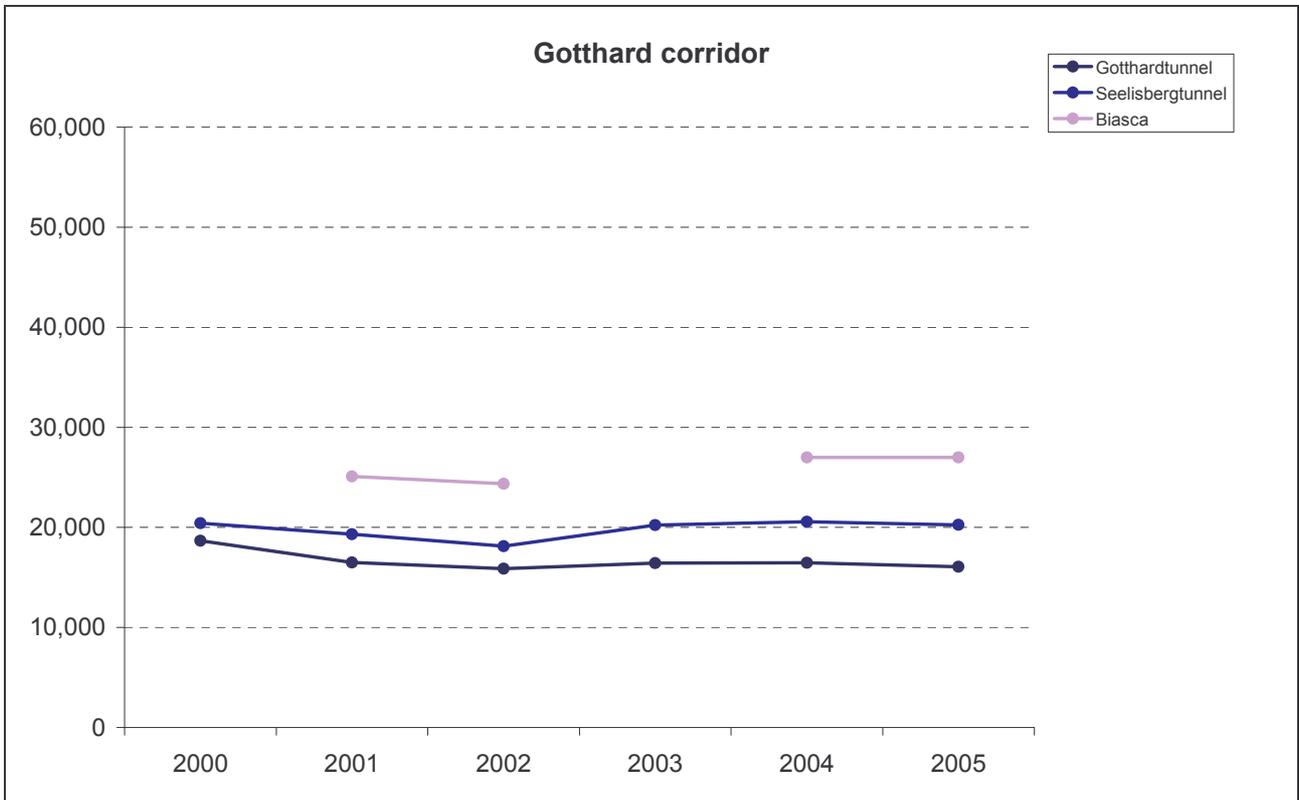


Figure 8: IND. 1 and 2 - vehicles fluxes (daily average vehicle number) per year for Gotthard corridor

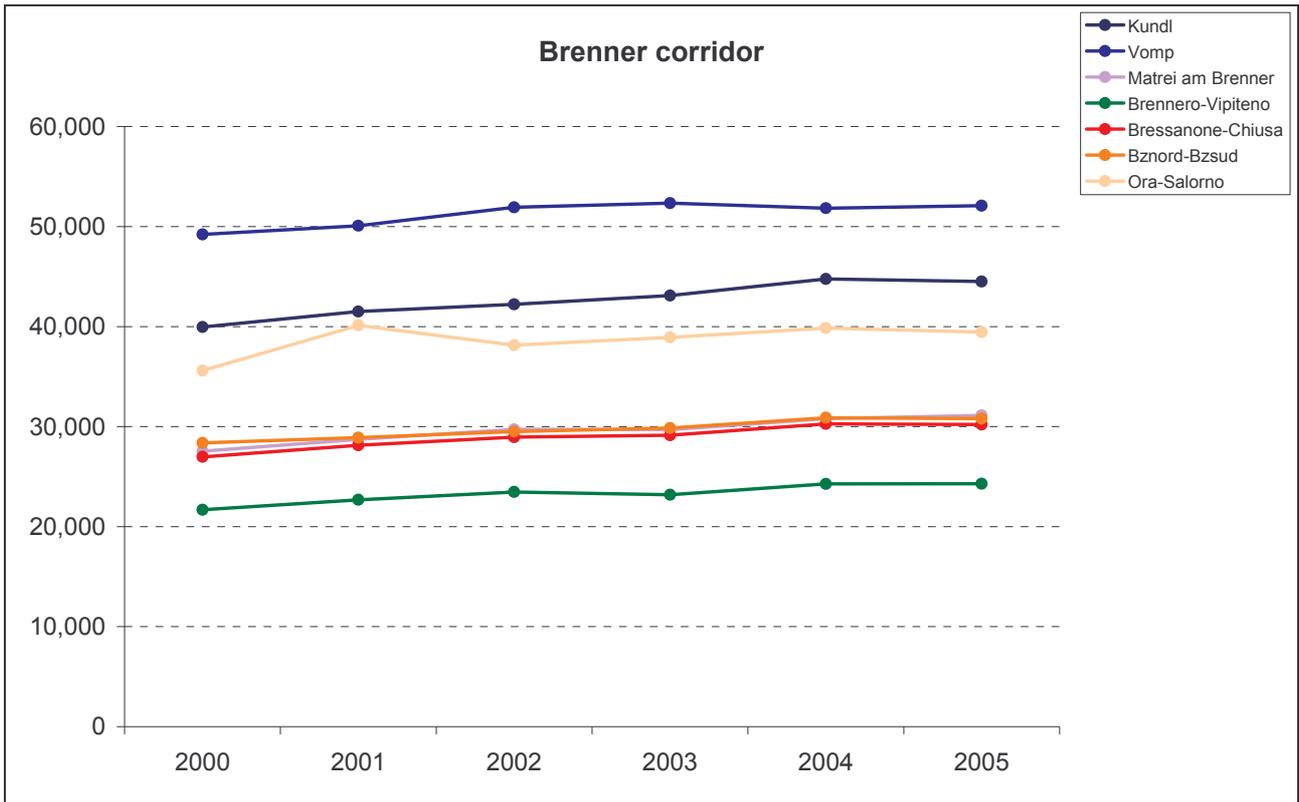


Figure 9: IND. 1 and 2 - vehicles fluxes (daily average vehicle number) per year for Brenner corridor

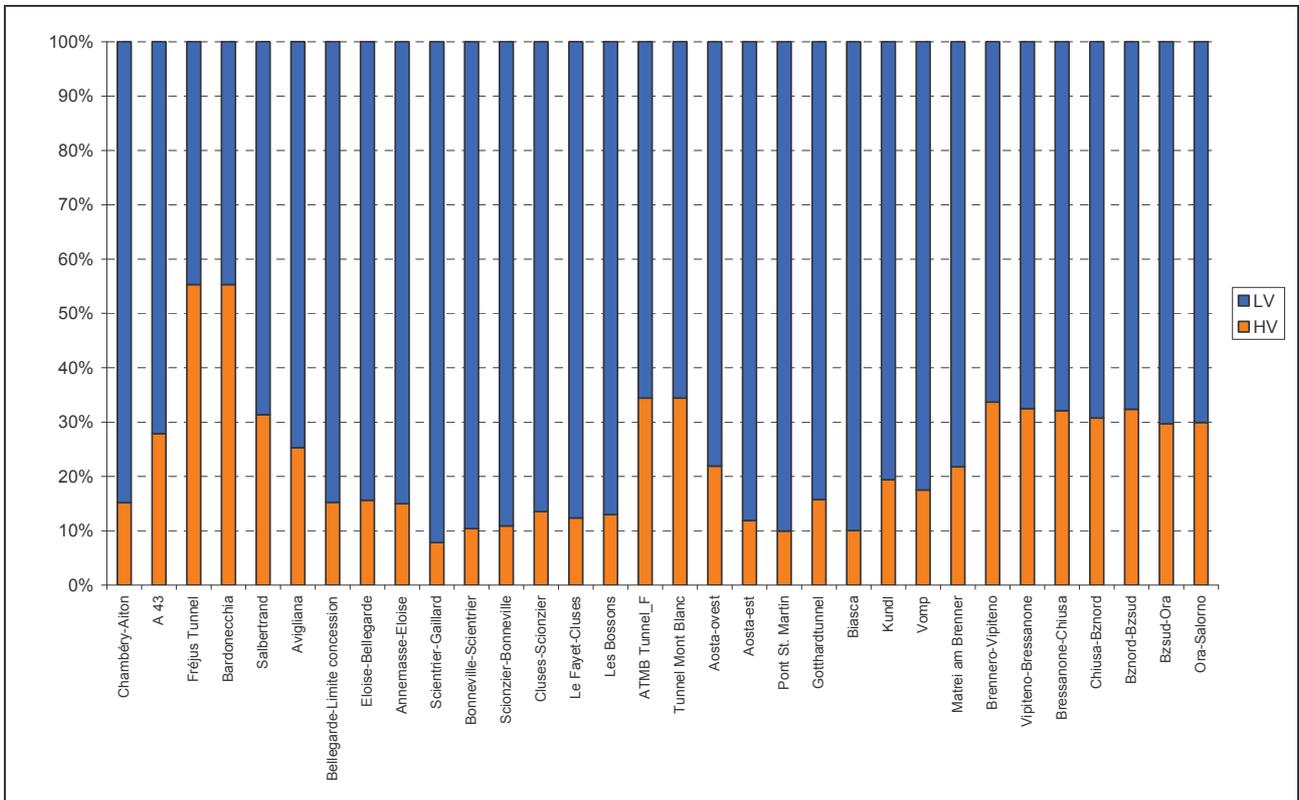


Figure 10: IND. 1 and 2 - incidenza dei veicoli leggeri e pesanti nei tratti stradali dei corridoi MONITRAF (year 2005)

Fig. 10 shows the percentage relationship between light vehicles and heavy vehicles in the stations of the four corridors represented in year 2005. Apart from the obvious prevalence of light vehicles, percentages vary from one corridor to another and within segments of one same corridor. The HDV fraction is higher at the passes than in the other road segments considered. The Fréjus has a very high percentage of heavy duty vehicles: in correspondence with the tunnel, it even reaches 55% of the vehicles in transit, but also at the other stations HDVs represent approximately 30% (with the exception of the station which is most distant from the French stretch, where the value is 15%) Values exceeding 30% are to be found also at the Brenner and the Mont Blanc passes and in the intermediate stations in South Tyrol, whilst in the other stations considered, freight traffic is approximately 10-20% of the total. On the other hand, heavy traffic at the Gotthard does not exceed 17% of the total. In conclusion, it appears that one may distinguish the four corridors based on the kind traffic that crosses them:

1. Fréjus: corridor strongly characterised by freight traffic.
2. Gotthard: corridor strongly characterised by passenger traffic.
3. Brenner and Mont Blanc: transit corridors with intermediate characteristics.

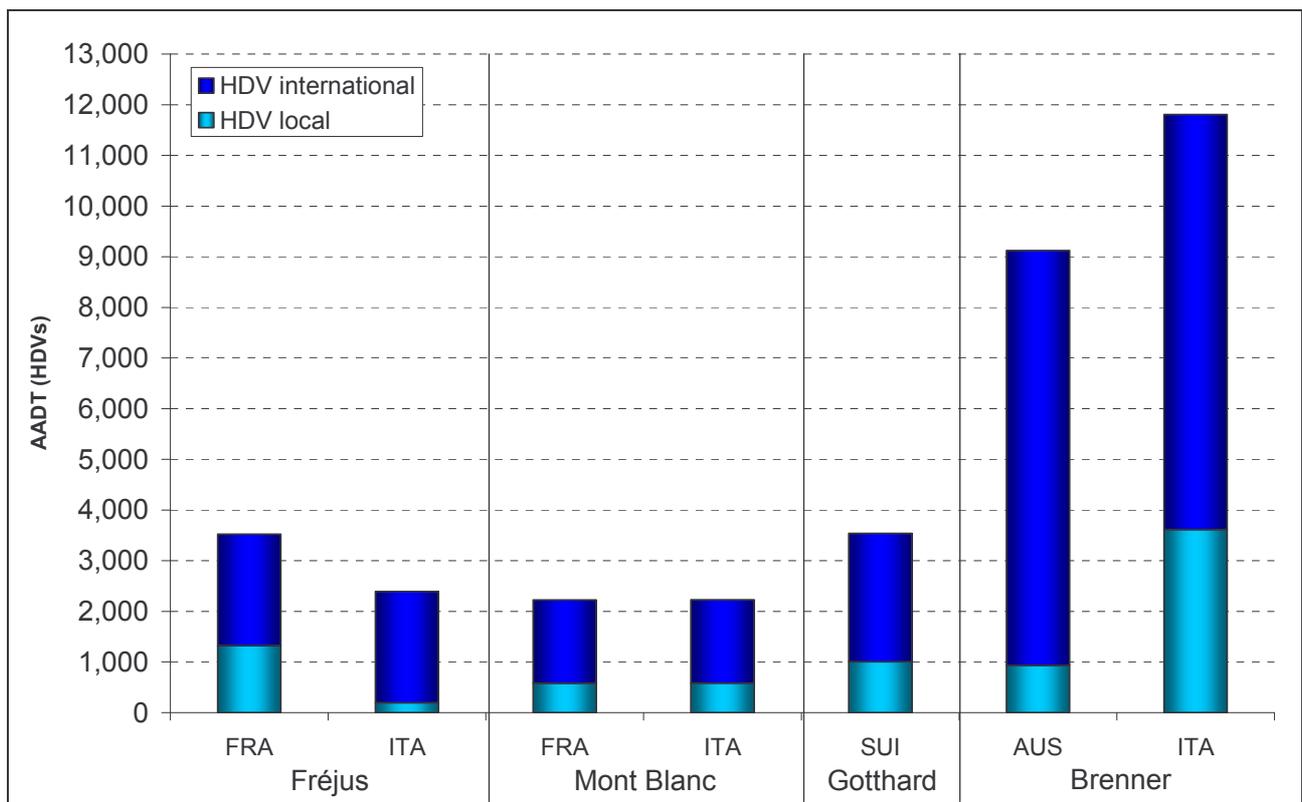


Figure 11: IND. 1 and 2 - incidenza del traffico stradale locale dei mezzi pesanti che non passano le alpi sul totale circolante

Fig. 11 shows the incidence of international heavy traffic over local traffic. This estimate is based upon the relationship between heavy traffic reported at the stations of access to Alpine corridors and the one in transit along the four passes, assuming that the difference is made up by local heavy traffic coming out of the motorways to serve the territory in question. The following have been considered as stations of access to corridors: Chambéry-Aiton and Avigliana (Fréjus), Le Fayet-Cluses and Pont-Saint-Martin (Mont Blanc), Grancia and Gotthard tunnel and Vomp and Ora-Salorno (Brenner).

In all four transalpine corridors local freight transport is lower than 40% of total freight traffic and in most cases it is approximately 30%. In the Susa Valley and Tirol, local freight transport does not exceed 10%, thus highlighting the important transit role played by their road infrastructures.

Indicator:		Composition vehicle fleet			
Number:	3	Name:	Composition vehicle fleet		
WP7 Codification:	501	Main category:	Traffic	Unit:	%
Level:	Stations and NUTS 2				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Yearly percentage of vehicles EURO 4 and higher in all heavy duty vehicles				
Calculation:	a) (Yearly total number of vehicles EURO 4 and higher crossing the corridors in both directions / Yearly total number of all heavy duty vehicles crossing the corridors in both directions (indicator n° 2)) * 100 b) (Yearly number of registrations of vehicles EURO 4 and higher in a region (NUTS 2) / Yearly number of registrations of heavy duty vehicles in a region (NUTS 2)) * 100				
Data:					
Name:	Vehicles/year	Unit	number	Periodicity:	annual
Period:	2000-2005	Reference period:	1990		
Definition of data to be collected:	a) Yearly number of vehicles in both directions counted at one counting station (only tunnels and passes), divided into EURO classes.				
Data source (citation basis):	CS: Traffic Data: ARE (2003-2005). Güterverkehr durch die Alpen. Bern (https://www.news-service.admin.ch/NSBSubscriber/messages/message/de/attachments/3355/6101/2067/1_Bericht.pdf) Split EURO-classes of heavy duty vehicles: Data provided by the Federal Office of Transport (FOT); TIC: Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation UVEK, Bundesamt für Verkehr BAV, Abteilung Finanzierung, Mühlestrasse 6, 3063 Ittigen, CH-3003 Bern, Tel +41 31 322 58 29, Fax +41 31 324 11 86, www.bav.admin.ch ; TYR: Amt der Tiroler Landesregierung, Abt. Verkehrsplanung; S_TYR: data not available; VDA: GEIE - Tunnel Mont Blanc				
Other Comments:	CS: Data provided by Ticino partner, data source FOT (see above). Comment of Ticino partner: "Best quality for 2005, lower quality for 2001- 2004 due to missing data on contingents for empty tours (numbers seem plausible anyway)"; TIC: Unit is expressed in %; data are referred to the yearly total number of heavy vehicles crossing the corridors; from 2001 to 2004 data related to the empty contingent and to the light contingent are not considered, from 2006 to 2007 data are not yet complete; TYR: sample survey at the traffic control station Kundl and Radfeld (A12) in October/ November 2005				
Name:	Registrations/year	Unit	number	Periodicity:	annual
Period:	2000-2005	Reference period:	1990		

Definition of data to be collected:	b) Yearly number of registrations of heavy duty vehicles divided into EURO classes per region (NUTS 2 level)
Data source (citation basis):	TIC: Repubblica e Cantone Ticino, Dipartimento delle Istituzioni, Divisione degli interni, Sezione della Circolazione, Ufficio Amministrativo, Ala Munda, CH-6528 Camorino, +41 91 814 92 00; TYR: Statistic Austria, Amt der Tiroler Landesregierung, Abt. Verkehrsplanung; S_TYR: Abteilung Mobilität, Amt für Planung und Gütertransport / Ripartizione Mobilità, Ufficio pianificazione e trasporto merci; VDA: ACI - Parco Veicolare per la Valle d'Aosta
Other Comments:	TIC: situation available only for 2007 (updating: 23 March 2007), the calculation is: total number of heavy vehicles registered (in circulation) divided into EURO classes (NUTS 2 level); TYR: only data from a sample survey in 2005 available; S_TYR: a division into EURO classes is not available

Data Quality

Altogether, the data are quite incomplete. As to the indicator concerning EURO 4 class heavy vehicle transits, there are no sets of data for the Brenner corridor because of the lack of a systematic counting and classifying system; all that is available is the result of a test conducted in October and November in Tyrol. As to the other corridors, data are available from year 2002 (2001 for the Gotthard), however data elaborations only refer to 2005, year in which there were the first Euro 4 Heavies; the data referring to the Brenner corridor were extrapolated from the case study, thus they do not refer to the pass but to the stations at the valley bottom, with the non neglectable presence of local traffic freight vehicles.

Practically absent or quite incomplete are the data on registrations per region/canton, with the sole exception of the Aosta Valley. The decision was therefore made not to elaborate further this part of the indicator.

IND.03	INDICATORS-VALUES	Data Counting station	Data registrations	Metadata counting station
CS	data detail	2000-2005	nd	1 count. Station (Gotthardtunnel)
	detail scale	nb euro type/y		
	data completeness	83%	NO	Y
TIC	data detail	2000-2007	2007	1 count. Station (Gotthardtunne)
	detail scale	% heavy veh classes/y	nb heavy veh classes	
	data completeness	83%	17%	Y
TYR	data detail	2005	2002; 2004-2005	
	detail scale	n. euro type/y	nb heavy veh classes	
	data completeness	17%	50%	
S_TYR	data detail		2000-2006	
	detail scale		Nb of total heavy duty vehicles registrations	
	data completeness		NO, only totals	

VDA	data detail	2000-2005	2000-2006	1 count. Station (MBTunnel)
	detail scale	nb euro type/y	nb heavy veh classes	
	data completeness	100% (2001-02 tunnel is closed)	100%	Y
RA (MB)	data detail	2000-2005	2005-2006	1 count. Station (MB Tunnel)
	detail scale	nb euro type/y	nb HDV/ département	
	data completeness	100% (2001-02 tunnel is closed)	NO, only totals	NO
RA (FR)	data detail	2000-2005	2005-2006	1 count. Station (Frejus Tunnel)
	detail scale	nb euro type/y	nb HDV/ département	
	data completeness	67% (2001-02 data are missing)	NO, only totals	NO
PI	data detail	2002: only since April, 2003-2005	n.d.	1 count. Station (Frejus Tunnel)
	detail scale	nb euro type/y		
	data completeness	67%	NO	NO

	Goththardtunnel		Radfeld and Kundl A12		MBTunnel		MBTunnel		ATMB Tunnel		Fréjus -PIEDM		
	nb HD veh/ y	% EUR class	% EUR class	% EUR 4/5	nb HD veh/ y	% EUR class	% EUR 4/5	nb HD veh/ y	% EUR class	% EUR 4/5	nb HD veh/ y	% EUR class	% EUR 4/5
Year 2003													
Total	1004000	100,0%			0			0			2414		
EURO 0	37148	3,7%			12791			11547			75136		172
EURO 1	48192	4,8%			177193			169158			1206532		70920
EURO 2	539148	53,7%			94441			91560			3416		1152018
EURO 3	379512	37,8%						0				X	3276
EURO 4	0	0,0%						0				X	
EURO 5	0	0,0%						0				X	
Year 2004													
Total	969000	99,9%			0			0			1382		140
EURO 0	23256	2,4%			8817			7671			57021		52548
EURO 1	28101	2,9%			188608			180996			1129121		1072672
EURO 2	378879	39,1%			169582			164422			3274		3098
EURO 3	537795	55,5%						0				X	
EURO 4	0	0,0%						0				X	
EURO 5	0	0,0%						0				X	
Year 2005													
Total	925000	100,0%			0			0			389		32
EURO 0	12950	3,8%			7583			6564	0,00%		28790		26507
EURO 1	14800	3,7%			169238			161703	0,71%		366081		339021
EURO 2	230325	27,8%			424241			416569	17,48%		432205		418956
EURO 3	663225	62,0%						0	45,03%			X	
EURO 4	3700	1,9%						0	0,00%			X	
EURO 5	925	0,8%						0	0,00%				
Year 2006													
Total					0						242		
EURO 0													
EURO 1					4101						16805		

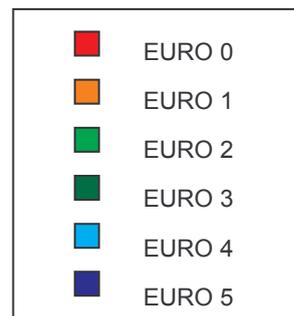
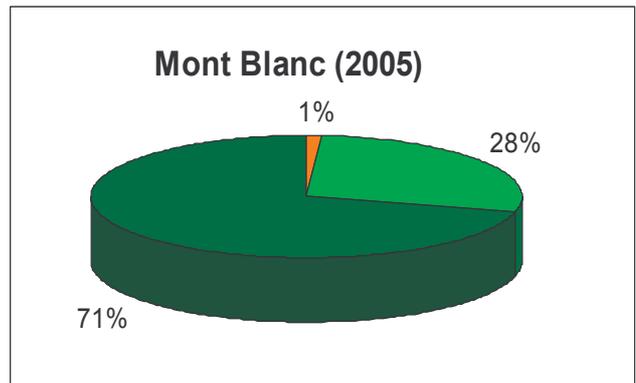
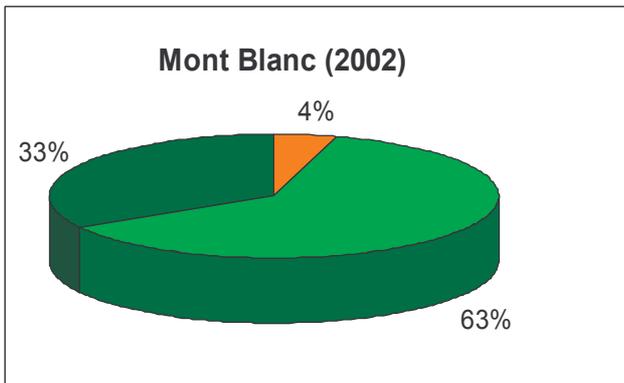
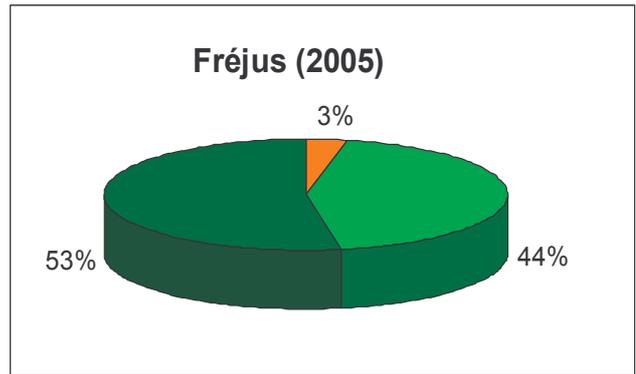
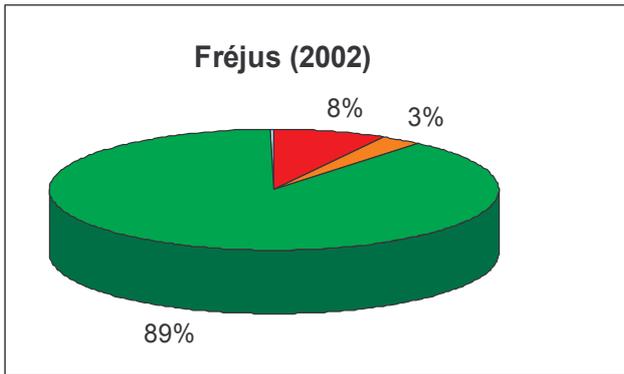


Figure 12: IND. 3 - HDVs fleet for Fréjus and Mont Blanc tunnels in 2002 and 2005

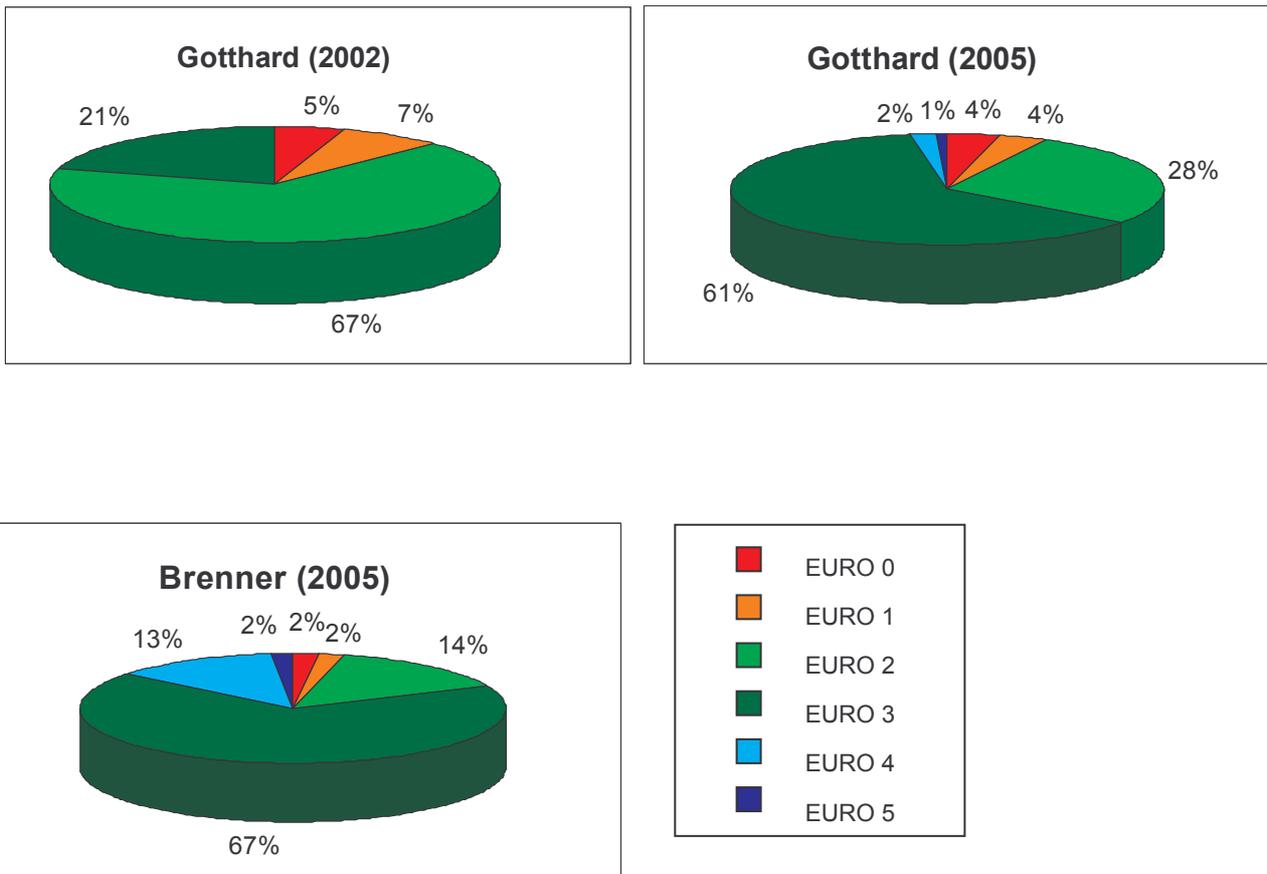


Figure 13: IND. 3 - HDVs fleet for Gotthard and Brenner corridors in 2002 and 2005

A fraction of Euro 4 heavy duty vehicles in comparison with the entire fleet transiting along the Monitraf corridors only appears in 2005, and only at the Gotthard tunnel and in Tyrol. The most represented Euro class is Euro 3, always exceeding 50% of the commercial fleet (up to 70% at Mont Blanc and 60% at the Gotthard). The most polluting classes (Euro 0 and Euro 1) altogether represent less than 4%, with the only exception of the Gotthard where these two classes represent 7.5% of the vehicles in transit. Class 2 represents 27% at the Mont Blanc and the Gotthard Tunnels and 14% in Tyrol; the figure goes up to 43% at the Fréjus.

Generally speaking, the trend is towards a rapid upgrade of the fleets to higher, less polluting classes; note that 60-80% of heavy vehicles are class 2 in 2002 whilst they represent only 28-44% in 2005. Gotthard and Brenner see a stronger presence of higher Euro but 0 and 1 class vehicles are present too (4% and 2%), whilst the transit of 0 class vehicles is forbidden at the Fréjus and the Mont Blanc tunnels.

Indicator:				<i>Modal split freight transport</i>		
Number:	4	Name:	Modal split freight transport (road and rail)			
WP7 Codification:	206	Main category:	Traffic	Unit:	%	
Level:	Main alpine crossing					
Objective:	Basis for assessment of MONITRAF scenarios					
Definition of indicator:	Proportion between freight transport on road and freight transport on rail					
Calculation:	(Yearly amount of tons transported via the main alpine crossing of each corridor on road / Yearly amount of tons transported via the main alpine crossing of each corridor on road and rail) * 100					
Data:						
Name:	net tons/year	Unit:	number	Periodicity:	annual	
Period:	2000-2005	Reference period:	1990, 1995			
Definition of data to be collected:	Yearly amount of tons transported via the main alpine crossing of each corridor on road and on rail					
Data source (citation basis):	Alpinfo (Swiss Federal Office for Spatial Development, ARE)					
Other Comments:	TYR: It was added 1994 and 1999 since the ARE-data is available for 1994, 1999 and 2004 only. The data for all the other years was taken from the statistic of the Austrian Federal Ministry of Transport, Innovation and Technology (bmvit)					

Indicator:				<i>Tonnage</i>		
Number:	5	Name:	Yearly transalpine total tonnage			
WP7 Codification:	210	Main category:	Traffic	Unit:	tons/year	
Level:	Main alpine crossing					
Objective:	Basis for assessment of MONITRAF scenarios					
Definition of indicator:	Total yearly tonnage transported via the main alpine crossing of each corridor					
Calculation:	Yearly amount of tons transported via the main alpine crossing of each corridor on road and on rail					
Data:						
Name:	net tons/year	Unit:	number	Periodicity:	annual	
Period:	2000-2005	Reference period:	1990, 1995			

Definition of data to be collected:	Yearly amount of tons transported via the main alpine crossing of each corridor on road and rail
Data source (citation basis):	Alpinfo (Swiss Federal Office for Spatial Development, ARE)
Other Comments:	TYR: It was added 1994 and 1999 since the ARE-data is available for 1994, 1999 and 2004 only. the data for all the other years was taken from the statistic of the Austrian Federal Ministry of Transport, Innovation and Technology (bmvit),

Data Quality

Data are complete for both indicators, with the sole exception of Tyrol, for which the data from 1990 to 2005 were not available

For the Fréjus corridor, the nearby Mont Cenis tunnel was considered for rail transport.

IND.04 - 05	INDICATORS-VALUES	Road data	Rail data
CS	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	tons/year	tons/year
	data completeness	100%	100%
TIC	data detail	1990, 1994, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	Mio tons/year	tons/year
	data completeness	100%	100%
TYR	data detail	199,1995, 1999, 2000-2004	199,1995, 1999, 2000-2005
	detail scale	Mio tons/year	tons/year
	data completeness	75%	75%
S_TYR	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	Mio tons/year	Mio tons/year
	data completeness	100%	100%
VDA	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	tons/year	tons/year
	data completeness	100%	100%
RA (MB)	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	tons/year	tons/year

	data completeness	100%	100%
RA (FR)	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	tons/year	tons/year
	data completeness	100%	100%
PI	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale	tons/year	tons/year
	data completeness	100%	100%

Table 4: IND. 4 and 5 - Modal shift between road and rail in terms of tonnes carried per year

in 1000 tons/year	1990		1995		2000		2001		2002		2003		2004		2005	
	Rail	Road														
Alpine crossing																
Brenner/Brennero_TYR	5,500	13,600	8,000	20,000	8,700	25,400	10,700	25,000	10,100	25,800	10,700	27,000	10,100	31,500	10,000	31,700
Brenner/Brennero_S-TYR	5,500	13,600	8,000	20,000	8,700	25,400	10,700	25,000	10,100	25,800	10,700	27,000	10,100	31,500	10,000	31,700
Gottard/Gottardo	13,600	3,100	13,500	5,500	16,800	7,600	15,800	7,400	14,200	7,500	14,300	9,200	16,100	9,900	15,600	10,200
Monte Bianco VA	na	7,700	na	8,000	na	0	na	0	na	1,300	na	4,500	na	5,200	na	8,500
Frejus /Mont Cenis	7,200	8,900	8,500	12,400	9,400	25,800	8,600	25,700	8,600	24,100	7,800	20,700	6,900	16,800	6,000	11,600
Modal split (%): share of rail-transported tonnage																
Frejus/ Mont Cenis		44,72		40,67		26,70		25,07		26,30		27,37		29,11		34,09
Brenner/Brennero S-TY		28,80		28,57		25,51		29,97		28,13		28,38		24,28		23,98
Gottard/Gottardo		81,44		71,05		68,85		68,10		65,44		60,85		61,92		60,47

By analysing the trend of freight transport across the four Monitraf corridors, on road and on rail, one may observe the following:

- in the period 1990-2000 the total tonnage transported yearly across the four corridors increased by 57%; substantial stability is observed over the past five years.
- the data can be compared with freight transport in Italy: +55% tonnes transported over the same fifteen year period. The increase in the transalpine transport is definitely higher than in national transport. (data TERM 2007, EEA, Report 1/2008)
- the Brenner corridor is the one transporting the largest amount of freight (45% of total tonnage transported in 2005 across Monitraf corridors), followed by Gotthard, (28%) and then the two western passes (9% Mont Blanc and 19% Fréjus Mont Cenis);
- over the period 1990 – 2005 the tonnage transported across the Brenner has grown constantly with an increase of 118% in 15 years.
- growth trend for the Gotthard too, albeit at lower rates (+54%) and substantial stability as of year 2000;
- the Fréjus records an altogether lower growth (+30%) after a peak in the years in which the Mont Blanc Tunnel was closed, followed by a sharp decline; rail transport through the Mont Cenis tunnel is declining (-17%);
- Mont Blanc records the lowest freight passage, with a rapidly growing trend following the reopening of the tunnel in 2002.

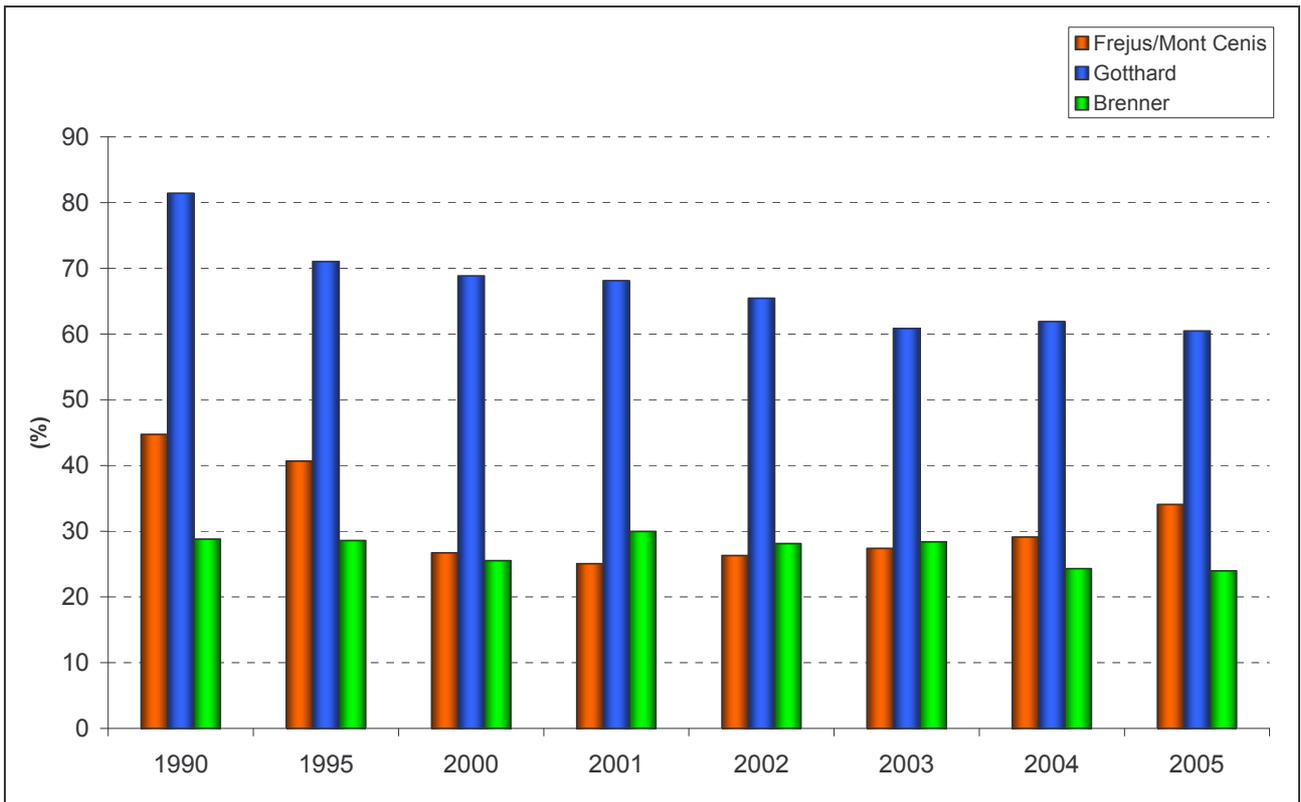


Figure 14: IND. 4 - share of rail-transported tonnage

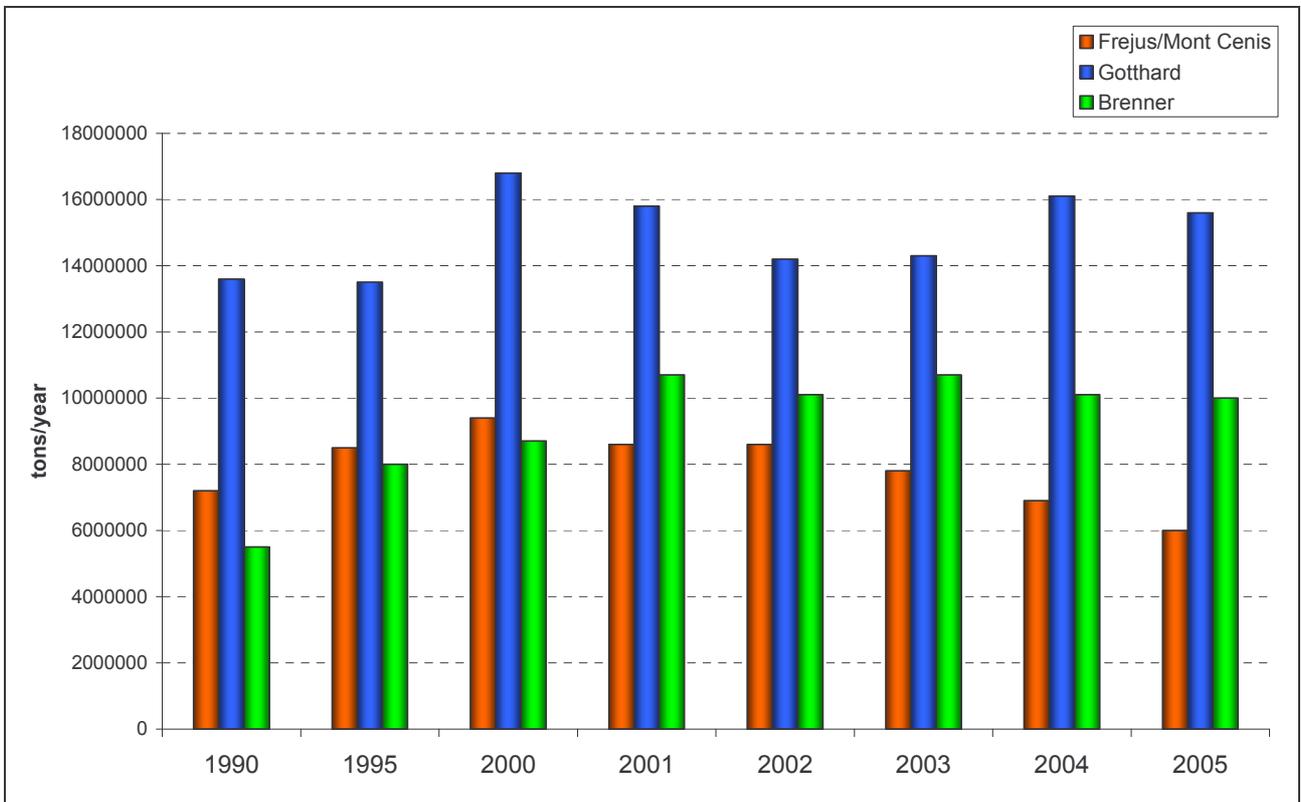


Figure 15: IND. 5 - rail-transported tonnage

The graphs above show the various characteristics of the Fréjus / Mont Cenis, Brenner and Gotthard passes as concerns road and rail freight transport. At the Brenner and Fréjus passes road freight prevails, whilst rail freight prevails at the Gotthard. The 2000 – 2005 trend reveals a reduction in rail traffic to the advantage of road traffic at the Gotthard with a reduction of 9% over the period, and at the Brenner with a 2% reduction; at the Fréjus/Mont Cenis there is, on the contrary, a 7% increase. Compared to 1990, the trend is declining for all: over the 15 year period, the Gotthard has had a loss of 21%, Fréjus / Mont Cenis 10% and the Brenner 5%.

If we consider tonnage transport data for the year 2005 alone, 151.3 million tonnes have crossed the Alpine Arc ranging from Ventimiglia to Tarvisio (B segment of Alpinfo); the four Monitraf corridors with their 93.6 million tonnes transported represent 62% of total freight transport and 68% of rail freight transport.

Indicator 6:		<i>Air concentration NO2: Hourly limit value for the protection of human health</i>			
Number:	6	Name:	Air concentration NO2		
WP7 Codification:	101	Main category:	Environment	Unit:	hour/year
Level:	Stations				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Number of hours per year with a NO2 concentration of more than 200 µg/m ³ at the selected measurement stations within the project area				
Calculation:	Counting hours per year with a NO2 concentration of more than 200 µg/m ³ (hourly average) at the selected measurement stations.				

Indicator 7:		<i>Air concentration NO2: Daily limit value for the protection of human health</i>			
Number:	7	Name:	Air concentration NO2		
WP7 Codification:	101	Main category:	Environment	Unit:	day/year
Level:	Stations				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Number of days per year with a NO2 concentration daily average of more than 80 µg/m ³ at the selected measurement stations within the project area				
Calculation:	Counting the days per year with a NO2 concentration daily average of more than 80 µg/m ³ at the selected measurement stations within the project area				

Indicator 8:		<i>Air concentration NO2: Annual limit value for the protection of human health</i>			
Number:	8	Name:	Air concentration NO2		
WP7 Codification:	101	Main category:	Environment	Unit:	µg/m ³
Level:	Stations				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Annual average of NO2 concentration on available stations in the project area (UE limit value: 40 µg/m ³)				
Calculation:	Annual average calculated as average of the hourly averages of NO2 concentration				

Data:

Indicator 6:		<i>Air concentration NO₂: Hourly limit value for the protection of human health</i>			
Name:	Hour/year	Unit:	Number	Periodicity:	calendar year
Period:	2000-2005	Reference period:	1995		
Definition of data to be collected:	Hours per year with a NO ₂ concentration of more than 200 µg/m ³ (hourly average). The concentrations are normalized for 101,3 kPa (pression) and 293 °K (temperature); the hourly limit value of 200 µg/m ³ is exceeded if the value is > 200,4 µg/m ³				

Indicator 7:		<i>Air concentration NO₂: Daily limit value for the protection of human health</i>			
Name:	Day/year	Unit:	Number	Periodicity:	calendar year
Period:	2000-2005	Reference period:	1995		
Definition of data to be collected:	Days per year with a NO ₂ concentration daily average of more than 80 µg/m ³ . The concentrations are normalized for 101,3 kPa (pression) and 293 °K (temperature).				

Indicator 8:		<i>Air concentration NO₂: Annual limit value for the protection of human health</i>			
Name:	µg/m ³	Unit:	Number	Periodicity:	calendar year
Period:	2000-2005	Reference period:	1990		
Definition of data to be collected:	NO ₂ concentration hourly average; the concentrations are normalized for 101,3 kPa (pression) and 293 °K (temperature)				
Data source (citation basis):	<p>CS: FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E). InLuft. Emissions measurement. Data available on http://www.in-luft.ch/;</p> <p>TIC: Dipartimento del territorio, Divisione dell'ambiente, Sezione della protezione dell'aria, dell'acqua e del suolo, Ufficio protezione dell'aria, Via Salvioni 2a, CH-6500 Bellinzona, +41 91 814 37 39; FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E) (for MOLENO MFM-U);</p> <p>TYR: Amt der Tiroler Landesregierung, Abt. Waldschutz;</p> <p>VDA: Rete di Monitoraggio della Qualità dell'aria - ARPA Valle d'Aosta;</p> <p>PI: Database of the Regione Piemonte air quality monitoring sistem</p>				
Other Comments:	<p>Each partner decides upon which measurement stations make sense to use;</p> <p>S_TYR: measurement station VELTURNO exists since May 2004, station of ORA since December 2005 data not reported.</p>				

VDA: indicative measurements in Châtillon site in respect to Directive 1999/30/CE

Data Quality

Data sets do not have the same level of completeness in all the stations along the 4 corridors. This depends on the date when data collection starts and on the regularity of collection, as shown in the table on data covering percentage. Generally speaking, data become consistent as of year 2000; in 1995 only three stations in Ticino transmit data.

IND.06-07-08	INDICATORS-VALUES	hourly average	Number of hours per year with a NO ₂ concentration hourly average of more than 200 µg/m ³	Number of days per year with a NO ₂ concentration daily average of more than 80 µg/m ³
CS	temporal detail	2000-2005	2003-2005	2003-2005
	spatial detail *	3	2	3
	data completeness	57%	29%	57%
TIC	temporal detail	1995-2005	1995-2005	1995-2005
	spatial detail *	4	4	4
	data completeness	86%	86%	86%
TYR	temporal detail	2000-2005	2000-2005	2000-2005
	spatial detail *	2	2	2
	data completeness	86%	86%	86%
S_TYR	temporal detail	2000-2005	2000-2005	2000-2005
	spatial detail *	5	5	5
	data completeness	60%	60%	60%
VDA	temporal detail	2000-2005	2000-2005	2000-2005
	spatial detail *	4	4	4
	data completeness	54%	46%	54%
RA	temporal detail	2000-2005	2000-2005	2000-2005
	spatial detail *	3	3	3
	data completeness	76%	76%	76%
PI	data detail	2002-2005	2002-2005	2002-2005
	detail scale *	1	1	1
	data completeness	57%	57%	57%

• = number of station

Data collection percentage time coverage

NAME	PP	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CSC	x	x	x	x	94	97	98
ALTDORF	CSC	x	x	x	x	x	x	x
BIOGGIO	TICINO	96	95	88	81	78	94	95
BODIO	TICINO	92	98	88	x	97	96	97
CHIASSO	TICINO	88	96	92	96	92	81	95
MOLENO	TICINO	x	x	x	x	97	99	95
VOMP	TIROLO	x	96	95	96	93	95	95
MUTTERS	TIROLO	x	97	94	94	94	93	95
BRESSANONE	SUD TIROLO	x						
VIPITENO	SUD TIROLO	x						
BOLZANO 5	SUD TIROLO	x						
ORA	SUD TIROLO	x	x	x	x	x	x	x
VELTURNO	SUD TIROLO	x	x	x	x	x	x	x
CHAMONIX	FRA	x	x	x	94	89	96	98
PLOUVES	VDA		98	99	97	98	92	94
LA THUILE	VDA		76	95	98	90	95	86
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	x	82
CHAMBERY	FRA	x	100	97	98	85	95	97
ST JEAN	FRA	x	99	98	96	97	99	98
SUSA	PIEMONTE	x	x	x	72	66	30	97

Table 5: IND. 6 - hours per year of NO2 limit excess measured by air quality stations

Air quality station	Country	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CS	x	x	x	x	0	0	0
ALTDORF	CS	x	x	x	x	x	x	x
BIOGGIO	TIC	0	0	0	0	0	0	0
BODIO	TIC	0	0	1	0	0	0	0
CHIASO	TIC	2	30	5	0	0	0	0
MOLENO	TIC	x	x	x	x	0	0	0
VOMP	TYR	x	0	0	0	1	1	8
MUTTERS	TYR	x	0	0	0	0	0	0
BRESSANONE (BX1)	S_TYR	x	0	0	0	0	0	0
VIPITENO (ST1)	S_TYR	x	2	0	0	0	0	0
BOLZANO 5	S_TYR	x	0	0	1	0	0	0
VELTURNO	S_TYR	x	x	x	x	x	0	0
CHAMONIX	RA	x	x	x	0	0	0	0
PLOUVES	VDA	x	23	57	16	0	1	42
LA THUILE	VDA	x	0	0	0	0	0	0
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	x	12
CHAMBERY	RA	x	0	2	0	0	0	0
ST JEAN	RA	x	0	0	0	0	0	0
SUSA	PI	x	x	x	0	0	0	0

Table 6: IND. 7 - days per year of NO2 limit excess measured by air quality stations

Air quality station	Country	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CS	x	x	x	x	6	0	3
ALTDORF	CS	x	x	x	x	x	x	x
BIOGGIO	TIC	1	2	0	1	0	0	2
BODIO	TIC	0	2	5	0	2	3	15
CHIASSO	TIC	15	50	7	17	8	30	56
MOLENO	TIC	x	x	x	x	2	13	24
VOMP	TYR	x	43	9	32	79	67	116
MUTTERS	TYR	x	0	0	0	1	4	23
BRESSANONE (BX1)	S_TYR	x	1	0	4	6	1	2
VIPITENO (ST1)	S_TYR	x	5	1	0	0	6	5
BOLZANO 5	S_TYR	x	5	32	28	34	3	9
VELTURNO	S_TYR	x	x	x	x	x	40	69
CHAMONIX	RA	x	x	x	0	10	26	14
PLOUVES	VDA	x	20	51	38	0	0	33
LA THUILE	VDA	x	0	0	0	0	0	0
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	x	12
CHAMBERY	RA	x	2	0	3	1	1	0
ST JEAN	RA	x	0	0	1	0	0	0
SUSA	PI	x	x	x	0	0	3	0

Table 7: IND. 8 - NO2 annual average concentrations measured by air quality stations

Air quality station	Country	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CS	x	x	x	x	45.29	40.67	42.26
ALTDORF	CS	x	30.1	28.2	27.6	29.80	25.40	28.40
BIOGGIO	TIC	35	36	33	32	38	38	39
BODIO	TIC	31	37	32	29	39	39	40
CHIASO	TIC	48	52	43	44	45	49	53
MOLENO	TIC	x	x	x	x	49.12	47.97	49.61
VOMP	TYR	x	60	54	61	68	66	74
MUTTERS	TYR	x	41	41	41	48	48	53
BRESSANONE	S_TYR	x	30.82	26.94	32.21	36.34	27.94	34.63
VIPITENO	S_TYR	x	33.53	32.51	32.35	31.64	30.63	34.7
BOLZANO	S_TYR	x	51.1	57.48	58.93	59.93	41.32	42.81
VELTURNO	S_TYR	x	x	x	x	x	65.61	65.74
CHAMONIX	RA	x	x	x	30	39	44	48
PLOUVES	VDA	x	42	52	44	30	25	39
LA THUILE	VDA	x	9	10	11	10	6	7
CHATILLON	VDA	x	x	x	x	57	44	x
ENTREVES	VDA	x	x	x	x	x	x	43
CHAMBERY	RA	x	31	27	27	27	25	25
ST JEAN	RA	x	27	25	26	25	20	19
SUSA	PI	x	x	x	25	22	34	25



Figure 16: IND. 6 - hours per year of NO₂ limit excess measured by air quality stations (2005)

Indicator 6

The number of times the average hourly value of 200 µg/m³ as measured in the stations is exceeded, is in most cases always lower than EU standard limit set for the year 2010: 18 excesses per year. Exceptions are the Chiasso measurement station in 2000 and the one in P.zza Plouves (Aosta) in 2000, 2001 and 2005. In both cases the stations are in towns, where the contribution of urban traffic does not allow to evaluate the traffic transiting through the Alpine corridors.

As regards 2005 in particular, not only were there excesses in P.zza Plouves, but also in another two stations (in any case the values were lower than EU standards): the Vomp rural station and the station along the road at Entrèves. (fig. 16).

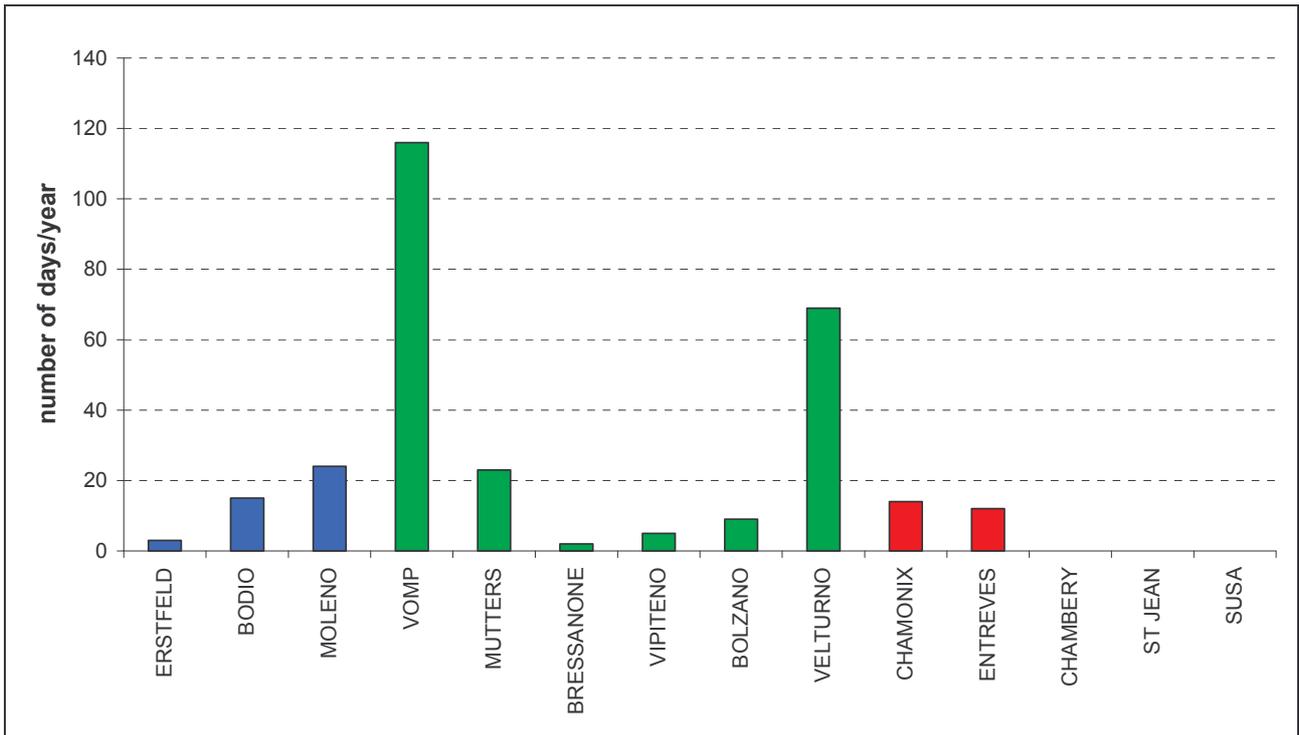


Figure 17: IND. 7 - days per year of NO₂ limit excess measured by air quality stations (2005)

Indicator 7

Contrary to the European legislation, the Swiss legislation sets an additional limit to the average daily concentration of NO₂, establishing that 80 µg/m³ must never be exceeded. The elaboration of the indicator for the set of Monitraf air quality monitoring stations highlights that this threshold is generally exceeded.

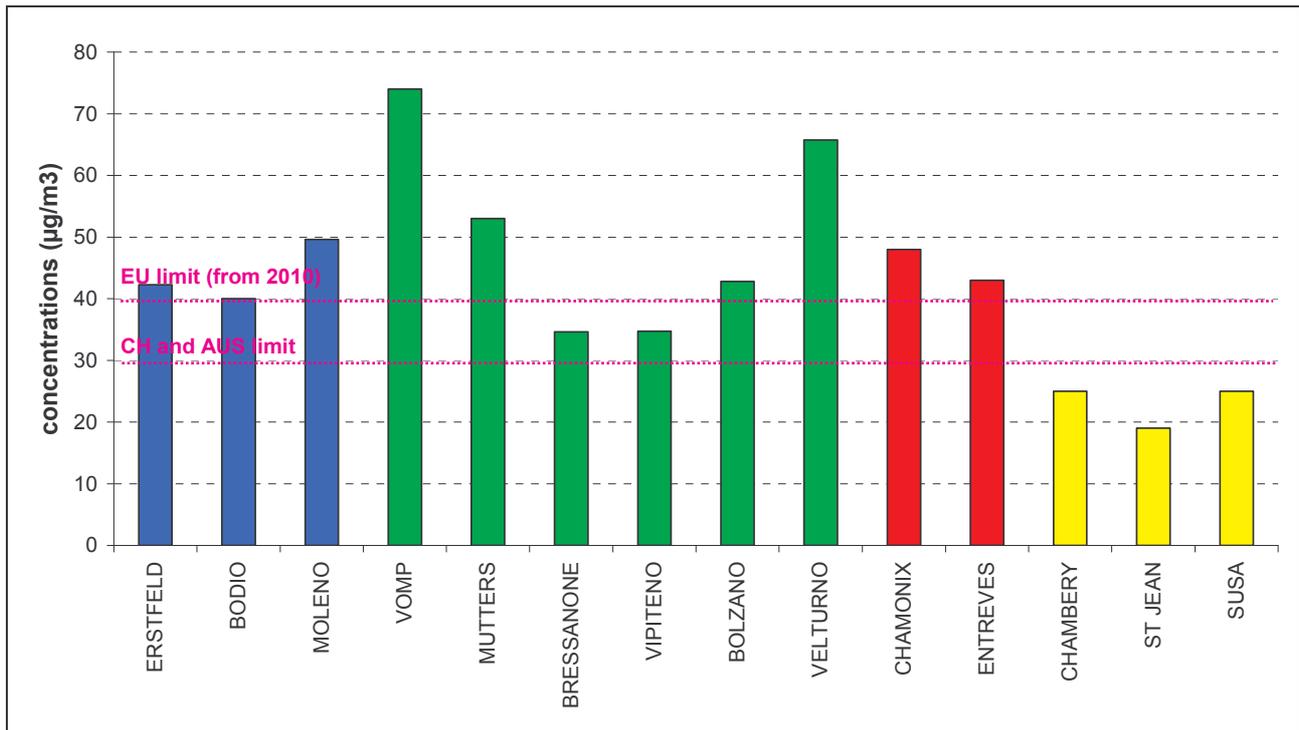


Figure 18: IND. 8 - NO₂ annual average concentrations measured by air quality stations (2005)

Indicator 8

European standards set 40 µg/m³ as the limit for the average annual concentration of NO₂, whilst Switzerland sets it at 30 µg/m³.

The majority of air quality measurement stations present values that exceed the Swiss regulatory limits. An exception to this are the following stations, with concentrations below 30 µg/m³ over the entire period considered: Altdorf (CS), La Thuile (VDA) and St Jean de Maurienne. These are rural or suburban stations, and in any case background stations. Susa and Chambéry have higher values only for one year, respectively 2004 in the case of Susa and 2000 for Chambéry: both are suburban stations, but the first is not located near the road.

The stations with the highest values are along the Brenner corridor and have values ranging from 30 to 40 µg/m³ only in Vipiteno and Bressanone, whilst the other stations record values well beyond 40 µg/m³.

The Ticino stretch of the Gotthard corridor has, altogether, higher averages than the ones recorded on the Central Swiss side. Only the Swiss station of Esterfeld exceeds the European limit.

The Mont Blanc corridor records values exceeding 40 µg/m³ at the stations located nearby the road to Chamonix Châtillon and Entrèves, albeit not as high as the levels reached in Bolzano and Velturmo.

The corridor with the best air quality in terms of annual concentrations of NO₂ seems to be the Fréjus, where no limit excesses were recorded and the values are even lower than the Swiss limit. In this corridor, however, the measurement stations are further away from the motorway axis.

Indicator:	Air concentration PM10: Annual limit value for the protection of human health				
Number:	9	Name:	Air concentration PM10		
WP7 Codification:	109	Main category:	Environment	Unit:	µg/m ³
Level:	Stations				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Annual average of Particulate Matter (PM10) concentration on the selected stations in the project area				
Calculation:	Annual average calculated as average of the daily averages of PM10 concentration (UE limit value: 40 µg/m ³)				

Indicator:	Air concentration PM10: 24-hour limit value for the protection of human health				
Number:	10	Name:	Air concentration PM10		
WP7 Codification:	109	Main category:	Environment	Unit:	day/year
Level:	Stations				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Number of days with a PM10 concentration of more than 50 µg/m ³ on selected measurement stations in the project area				
Calculation:	Counting days with a PM10 concentration of more than 50 µg/m ³ as daily average on selected measurement stations in the project area				

Data:					
Indicator 9:	Air concentration PM10: Annual limit value for the protection of human health				
Name:	µg/m ³	Unit:	Number	Periodicity:	calendar year
Period:	2000-2005	Reference period:	1990		
Definition of data to be collected:	Daily average (average of hourly averages) of PM10 concentration organized by monthly average and by annual average				
Indicator 10:	Air concentration PM10: 24-hour limit value for the protection of human health				
Name:	day/year	Unit:	Number	Periodicity:	calendar year
Period:	2000-2005	Reference period:	1995		
Definition of data to be collected:	Days with a PM10 concentration of more than 50 µg/m ³ as daily average				

collected:	
Data source (citation basis):	<p>CS: FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E). InLuft. Emissions measurement. Data available on http://www.in-luft.ch/; TICINO: Dipartimento del territorio, Divisione dell'ambiente, Sezione della protezione dell'aria, dell'acqua e del suolo, Ufficio protezione dell'aria, Via Salvioni 2a, CH-6500 Bellinzona, +41 91 814 37 39; FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E) (for MOLENO MFM-U);</p> <p>TYR: Amt der Tiroler Landesregierung, Abt. Waldschutz;</p> <p>VDA: Rete di Monitoraggio della Qualità dell'aria - ARPA Valle d'Aosta;</p> <p>PI: database of the Regione Piemonte air quality monitoring system</p>
Other Comments:	<p>Each partner decides upon which measurement stations make sense to use;</p> <p>S_TYR: measurement station VELTURNO exists since May 2004, , station of ORA since December 2005 data not reported.;</p> <p>VDA: indicative measurements in Châtillon site in respect to Directive 1999/30/CE</p>

Data Quality

Data sets do not have the same level of completeness in all the stations in the 4 corridors. Furthermore there is not the same level of completeness of data in indicators 9 and 10. This depends on the date when data collection was implemented and on its regular functioning. Generally speaking, the information starts to become consistent starting from 2001; in 1995 PM 10 data is not collected in any station.

IND.09-10	INDICATORS-VALUES	yearly average	Number of days with a PM10 concentration of more than 50 µg/m ³ as daily average
CS	data detail	2001-2005	2003-2005
	detail scale *	3	2
	data completeness	52%	29%
TIC	data detail	2000-2005	2000-2005
	detail scale *	3	3
	data completeness	39%	43%
TYR	data detail	2001-2005	2001-2005
	detail scale *	2	2
	data completeness	71%	71%
S_TYR	data detail	2001-2005	2001-2005
	detail scale *	5	5
	data completeness	60%	60%
VDA	data detail	2000-2005	2000-2005
	detail scale *	3	3
	data completeness	32%	29%

RA	data detail	2000-2005	2000-2005
	detail scale *	3	3
	data completeness	76%	76%
PI	data detail	2002-2005	2002-2005
	detail scale *	1	1
	data completeness	57%	57%

* = stations number

Data collection percentage time

NAME	PP	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CSC	x	x	x	x	99	99	100
ALTDORF	CSC	x						
BIOGGIO	TICINO	x	x	x	x	x	96	99
BODIO	TICINO	x	x	x	x	x	x	x
CHIASSO	TICINO	x	94	89	97	98	97	97
MOLENO	TICINO	x	x	x	x	75	100	99
VOMP	TIROLO	x	x	95	98	98	98	99
MUTTERS	TIROLO	x	x	82	99	98	95	99
BRESSANONE	SUD TIROLO							
VIPITENO	SUD TIROLO							
BOLZANO	SUD TIROLO	x	x					
ORA	SUD TIROLO	x	x	x	x	x	x	x
VELTURNO	SUD TIROLO	x	x	x	x	x	x	x
CHAMONIX	FRA	x	x	x	89	98	92	96
PLOUVES	VDA	x	94	99	100	x	100	97
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	92	85
CHAMBERY	FRA	x	100	99	99	98	99	97
ST JEAN	FRA	x	100	99	100	99	99	99
SUSA	PIEMONTE	x	x	x	9	88	92	92

Table 8: IND. 9 - PM10 annual average concentrations measured by air quality stations

Air quality station	PP	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CS	x	x	x	x	21.94	20.61	23.92
ALTDORF	CS	x	x	20.2	20.5	22.90	18.40	20.20
BIOGGIO	TIC	x	x	x	x	x	37	36
BODIO	TIC	x	x	x	x	x	x	x
CHIASO	TIC	x	33	28	39	49	48	46
MOLENO	TIC	x	x	x	x	28.73	27.47	28.17
VOMP	TYR	x	x	29	27	30	27	32
MUTTERS	TYR	x	x	23	23	27	25	24
BRESSANONE	S_TYR	x	x	30	35.47	32.79	23.27	27.18
VIPITENO	S_TYR	x	x	14.26	21.56	21.38	21.12	21.09
BOLZANO	S_TYR	x	x	28.7	31.08	44.71	34.04	29.7
VELTURNO	S_TYR	x	x	x	x	x	31.3	32.6
CHAMONIX	RA	x	x	x	24	28	26	25
PLOUVES	VDA	x	40	35	32	34	33	33
CHATILLON	VDA	x	x	x	x	x	44	x
ENTREVES	VDA	x	x	x	x	x	19	25
CHAMBERY	RA	x	19	18	18	21	19	21
ST JEAN	RA	x	20	23	21	21	21	20
SUSA	PI	x	x	x	31	34	30	29

Table 9: IND. 10 - days per year of PM10 limit excess measured by air quality stations

Air quality station	PP	1995	2000	2001	2002	2003	2004	2005
ERSTFELD	CS	x	x	x	x	8	7	8
BIOGGIO	TIC	x	x	x	x	44	72	84
BODIO	TIC	x	x	x	x	x	x	x
CHIASSO	TIC	x	63	35	97	142	129	139
MOLENO	TIC	x	x	x	x	19	36	53
VOMP	TYR	x	x	22	29	34	22	40
MUTTERS	TYR	x	x	2	7	15	14	10
BRESSANONE	S_TYR	x	x	51	58	63	20	34
VIPITENO	S_TYR	x	x	12	17	12	28	22
BOLZANO	S_TYR	x	x	47	56	84	62	38
VELTURNO	S_TYR	x	x	x	x	x	29	52
CHAMONIX	RA	x	x	x	7	24	13	12
PLOUVES	VDA	x	82	63	49	51	50	54
CHATILLON	VDA	x	x	x	x	x	x	x
ENTREVES	VDA	x	x	x	x	x	1	12
CHAMBERY	RA	x	4	1	3	4	1	1
ST JEAN	RA	x	3	12	7	6	11	2
SUSA	PI	x	x	x	5	59	42	43

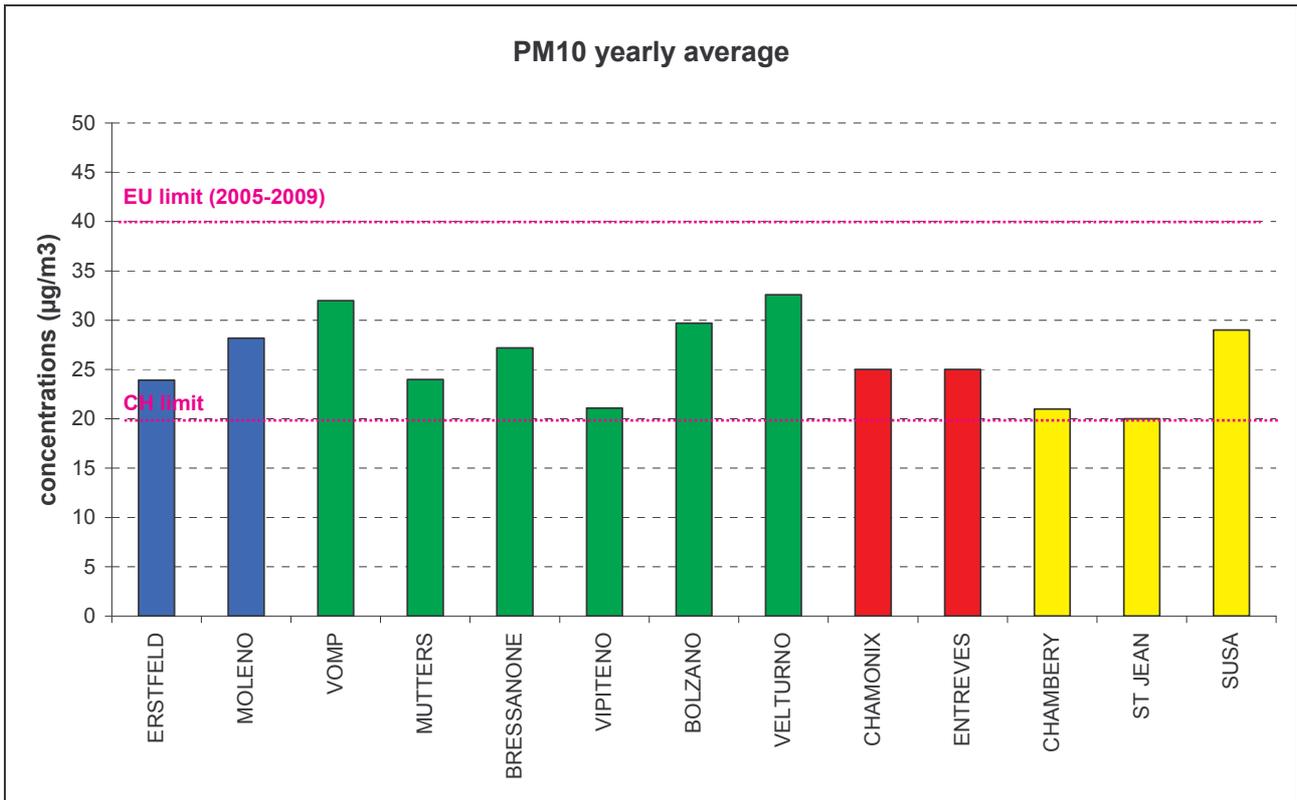


Figure 19: IND. 9 - PM10 annual average concentrations measured by air quality stations (2005)

Indicator 9

European legislation sets an average annual concentration of 40 µg/m³ as limit value for human health, whilst the Swiss legislation lowers the limit down to 20 µg/m³, the same value set by the EU as a target for 2010.

The present EU limit is observed by most of the stations considered, with the exception of Chiasso over the three-year period 2003-2005, Bolzano in 2003, P.zza Plouves (Aosta) in 2000 and Châtillon in 2004. If, on the contrary, one analyses the data with reference to the 20 µg/m³ limit, all the stations present average annual values above this limit; lower values are attained only for one-year periods in Altdorf (2004), Vipiteno (2001), Entrèves (2004) and Chambéry (for 4 out of 6 years of data collection).

The Fréjus corridor appears to be much less affected by PM10 pollution.

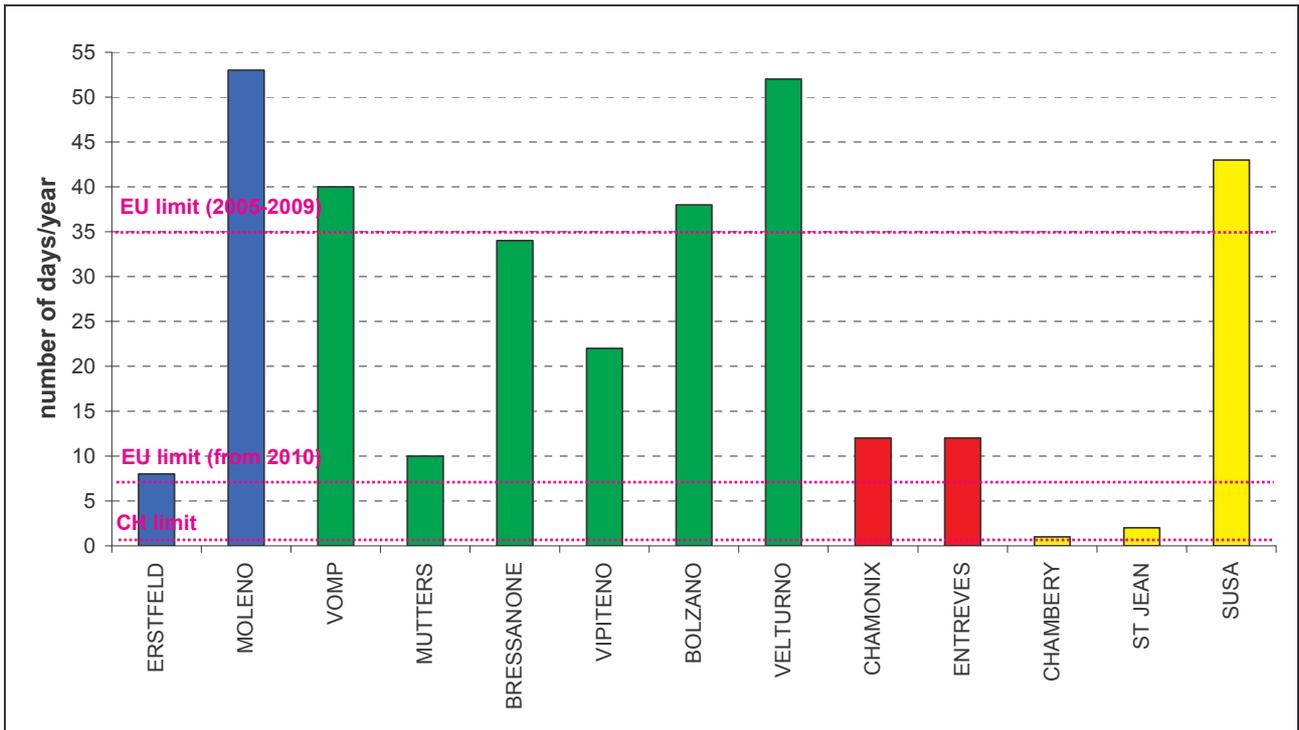


Figure 20: IND. 10 - days per year of PM10 limit excess measured by air quality stations (2005)

Indicator 10

Generally, most stations in most years exceed the present legislative limit of 35 days of excess, reaching over 100 excesses a year, as in the case of Chiasso. Typically limits are exceeded in the winter months when, especially in the mountains, thermal inversion phenomena tend to favour the stagnation of dusts nearby emission sources.

The corridor with the lowest limit excesses is the Fréjus, where the Susa station was the only one to record values exceeding legal limits; the other stations present very virtuous behaviours; limit excesses are in line with the EU legislative targets set for 2010.

Indicator:					Noise	
Noise	11	Name :	Noise			
WP7 Codification:	-	Main category:	Quality of life	Unit:	dB	
Level:	Stations					
Objective:	Basis for assessment of MONITRAF scenarios					
Definition of indicator:	Lden (noise indicator for overall annoyance) and Lnight (noise indicator for annoyance during the night period). Refer to the annex 1 of EU directive (L189 p 12 of 25 june 2002) for detailed definition (http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_189/l_18920020718en00120025.pdf)					
Calculation:	Based on EU directive L189 p 12 of 25 june 2002. The values of Lden and Lnight can be determined either by computation or by measurement (at the assessment position).					
Data:						
Name:	Lden	Unit:	dB	Periodicity:	annual	
Period:	2000-2005	Reference period:	1990			
Definition of data to be collected:	Lden (noise indicator for overall annoyance)					
Data source (citation basis):	Refer to the annex 1 of EU directive (L189 p 12 of 25 june 2002) for detailed definition (http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_189/l_18920020718en00120025.pdf) CS: FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E). TIC: Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, Marco Andretta +41 91 814 3817; S_TYR: Amt für Luft und Lärm der Autonomen Provinz Bozen-Südtirol / Ufficio Aria e Rumore, Provincia Autonoma di Bolzano-Alto Adige; VDA: Osservatorio acustico regionale - ARPA Valle d'Aosta					
Other Comments:	Every regions collects the available data					
Name:	Lnight	Unit:	dB	Periodicity:	annual	
Period:	2000-2005	Reference period:	1990			
Definition of data to be collected:	Lnight (noise indicator for annoyance during the night period)					
Data source (citation basis):	Refer to the annex 1 of EU directive (L189 p 12 of 25 june 2002) for detailed definition (http://eur-lex.europa.eu/LexUriServ/site/en/oj/2002/l_189/l_18920020718en00120025.pdf) CS: FOEN (2003-2006). Emission data Monitoring of Supporting Measures - Environment (MSM-E); TIC: Repubblica e cantone Ticino, Osservatorio ambientale svizzera italiana, Marco Andretta					

	+41 91 814 3817; S_TYR: Amt für Luft und Lärm der Autonomen Provinz Bozen-Südtirol / Ufficio Aria e Rumore, Provincia Autonoma di Bolzano-Alto Adige; VDA: Osservatorio acustico regionale - ARPA Valle d'Aosta
Other Comments:	Every regions collects the available data
Comments (of WP 6)	
Adaptation of existing national computation methods : If a Member State has national methods for the determination of long-term indicators those methods may be applied, provided that they are adapted to the definitions of the indicators. For most national methods this implies the introduction of the evening as a separate period and the introduction of the average over a year. Some existing methods will also have to be adapted as regards the exclusion of the façade reflection, the incorporation of the night and/or the assessment position. The establishment of the average over a year requires special attention. Variations in emission and transmission can contribute to fluctuations over a year. Recommended interim computation methods for Member States that have no national computation methods or Member States that wish to change computation method :	
For ROAD TRAFFIC NOISE: The French national computation method 'NMPB-Routes-96 (SETRA-CERTU-LCPCSTB)', referred to in 'Arrêté du 5 mai 1995 relatif au bruit des infrastructures routières, Journal Officiel du 10 mai 1995, Article 6' and in the French standard 'XPS 31-133'. For input data concerning emission, these documents refer to the 'Guide du bruit des transports terrestres, fascicule prévision des niveaux sonores, CETUR 1980'. For RAILWAY NOISE: The Netherlands national computation method published in 'Reken- en Meetvoorschrift Railverkeerslawaai '96, Ministerie Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, 20 November 1996'.	
Notes	
Brenner - Tyrol - According to the federal law "Bundes-Umgebungslärmschutzgesetz - Bundes-LärmG based on the EU directive (L189 p 12 of 25 June 2002) a map displaying the noise impact should be elaborated. At the current stage the respective department is in the middle of this elaboration and extensive expenditures are taking place in order to display the noise polluters and the effected areas as detailed as possible. The first results can be expected within the end of the year 2007.	
STYROL and PIEDMONT hanno fornito dati non elaborabili per il calcolo dell'indicatore Lden.	

Data Quality

The available data refer to both sides of the Gotthard and to the Italian side of the Mont Blanc. For the Gotthard, the data is an ongoing set from 2003 and refers to 4 permanent stations. For Mont Blanc, the data was collected at a greater number of measurement points but over a less regular time period (one-week campaigns per season) In Courmayeur alone there has been continuous data collection at two stations since 2001.

IND.11	INDICATORS-VALUES	Lden	Ln
CS	data detail	2003-2006	2003-2006
	detail scale *	2	2
	data completeness	88%	88%
TIC	data detail	2003-2006	2003-2006
	detail scale *	2	2
	data completeness	100%	100%
TYR	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%
S_TYR	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%
VDA	data detail	2000-2006	2000-2006
	detail scale *	7	7
	data completeness	43%	43%
RA	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%
PI	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%

* = stations number

Table 10: IND. 11 - Lden values measured by noise monitoring stations

station:	CS		TIC		TYR	S-TYR	VDA							RA	PI
	Erstfeld	Camignolo	Moleno				Courmayeur - La Palud S.S. 26	Courmayeur - Villetta S.S. 26	Courmayeur - p.Monte Bianco S.S.26	Pontey - loc. Bovayes A5	Pontey - loc. Lezin A5	Verrès - loc. Quassù A5	Verrès - V. stazione A5		
Road distance	6 m	6 m	6 m				17 m	6 m	100 m	130 m	60 m	170 m	40 m		
Year 1990															
Lden	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ln	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Year 2000															
Lden	X	X	X	X	X	nV	X	X	65.1	X	X	X	X	X	X
Ln	X	X	X	X	X	nV	X	X	56.6	X	X	X	X	X	X
Year 2001															
Lden	X	X	X	X	X	nV	X	70.3	64.3	X	X	66.2	68.60	X	X
Ln	X	X	X	X	X	nV	X	60.9	55.3	X	X	58.6	60.60	X	X
Year 2002															
Lden	X	X	X	X	X	nV	65.1	73.2	65.9	64	64.2	66.00	70	X	X
Ln	X	X	X	X	X	nV	58.2	64.9	56.5	54.8	55.1	58.20	62	X	X
Year 2003															
Lden	77.22	83.6	81.7	X	X	nV	69.8	72.9	X	X	X	X	X	X	X
Ln	72.93	75.3	73.4	X	X	nV	63	65.6	X	X	X	X	X	X	X
Year 2004															
Lden	78.06	83.7	80.6	X	X	nV	65.4	74.60	X	X	X	X	X	X	X
Ln	73.28	75.3	71.9	X	X	nV	58.4	67.10	X	X	X	X	X	X	X

Year 2005													
Lden	77.81	83.5	78.3	x	nV	67.40	77	x	x	69.50	x	x	x
Ln	73.06	75.0	69.5	x	nV	60.80	70.3	x	x	61.60	x	x	x
Year 2006													
Lden	x	83.6	79.6	x	nV	x	74.1	x	x	67.3	x	x	x
Ln	x	75.1	71.0	x	nV	x	66.7	x	x	56.4	x	x	x

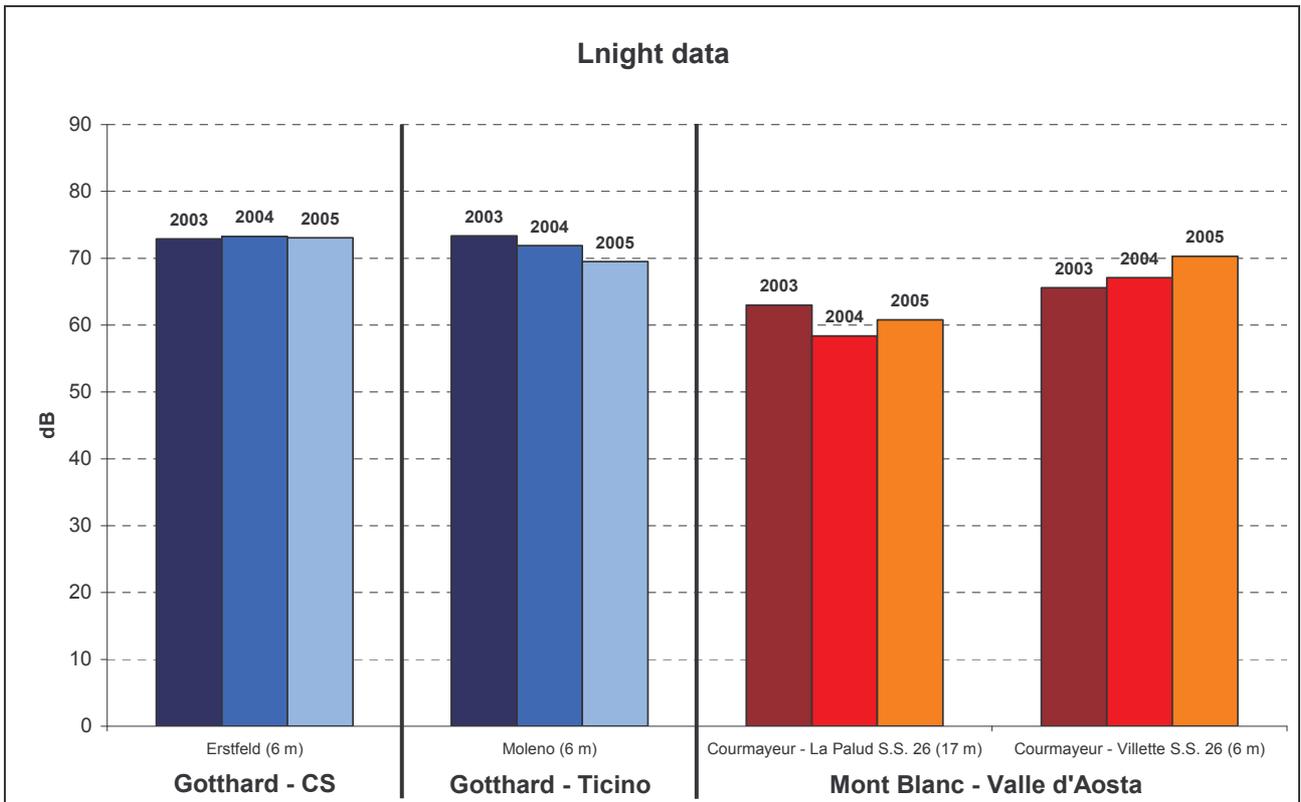
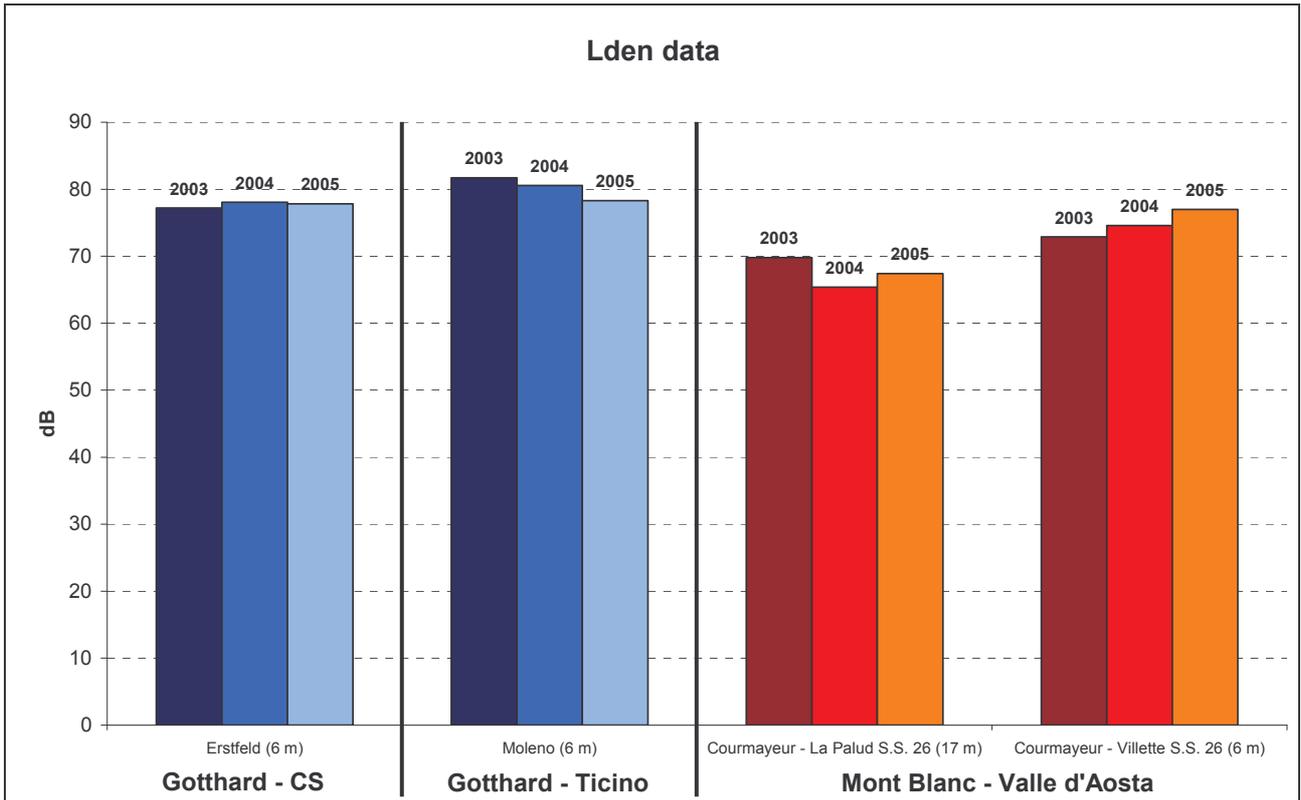


Figure 21: IND. 11 - Lden and Lnight values measured by noise monitoring stations

The values observed along the Mont Blanc Tunnel corridor are systematically lower than those along the Gotthard, basically because of the different traffic volumes and because of the calculation formulae used. The evening time-slot considered by the Swiss is from 18.00 to 22.00 whilst the Aosta Valley considers the time from 20.00 to 22.00; since this latter time slot has a greater weight compared to the day-time slot, this albeit slight difference can lead to slightly higher values being recorded along the Gotthard corridors. Also, the distance of the microphones is not the same at the stations considered.

In the future it would be appropriate to better homogenise these factors.

Indicator:		<i>Health indicator</i>	
Number:	12	Name:	Cardiovascular and respiratory morbidity

Indicator 12 could not be elaborated in that useable data are missing for all Partner countries. At the present state of things there are only general epidemiological studies, whilst there are no specific analyses for the territories considered and with special attention paid to the pathologies connected to traffic problems.

It is desirable for specific studies to be launched in the near future, allowing for an ever better knowledge of the cause-effect relations between air quality and human health in mountain environments which are typically characterised by low density settlements.

Indicator:				Transport accidents		
Number:	13	Name:	Transport accidents			
WP7 Codification:	-	Main category:	Quality of life	Unit:	n° of accidents/year and km	
Level:	Motorway of the corridor					
Objective:	Basis for assessment of MONITRAF scenarios					
Definition of indicator:	Yearly number of road accidents, fatalities and injuries per per km on the motorway of the corridor					
Calculation:	Yearly number of road accidents, fatalities and injuries calculated per km					
Data:						
Name:	Accidents, fatalities and injuries	Unit:	number	Periodicity:	annual	
Period:	2000-2006	Reference period:	1990			
Definition of data to be collected:	Yearly number of road accidents, fatalities and injuries for the different sections of the motorway					
Data source (citation basis):	<p>CS: BFS 2006. (File:su-b-11.3.5-SVU-E01UCD-unfälle.xls). ASTRA 2006. Strassen und Verkehr. Zahlen und Fakten 2006. (File: strassen_verkehr1-21_d.pdf).</p> <p>TIC: Repubblica e Cantone Ticino, Dipartimento delle Istituzioni, Polizia Cantonale-Stato Maggiore Bellinzona (ufficio statistica), Via S. Franscini 3, CH-6500 Bellinzona, http://www.ti.ch.;</p> <p>TYR: Kuratorium für Verkerhsicherheit.</p> <p>S-TYR: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), Amt für Wirtschaftsstatistik / Ufficio statistiche economiche.</p> <p>VDA: Compartimento Polizia stradale- Sezione di Aosta.</p> <p>RA: SFTRF</p>					
Other Comments:	Possible data sources: Polizia stradale, Kuratorium für Verkehrssicherheit					
Type of accident						
Name:	Description					
Total accidents with personal injuries	Total = Accidents with fatalities + Accidents with injuries					
Accidents with fatalities	Accidents with people dying at the moment of the accident (or, only for CS, up to 30 days after the accident, as a consequence of the accident)					
Accidents with injuries	Accidents with injuries cause for the injured person a interruption of normal activites					
Notes						
S-TYR	There is no division between type of accident available. It is only seperated between number of accidents and number of persons injured					

Data Quality

The set of data on the total number of accidents on the motorway with the involvement of people (injuries and fatalities) appears to be quite complete for the period 2000-2005 for all PPs, with the exception of Piedmont, which has not supplied data assimilable to the above categories, and the Aosta Valley, whose data set starts from 2002, year in which the Mont Blanc Tunnel was reopened hence also the year in which transborder freight traffic was resumed.

On the other hand, the set of data referring to the other two categories, with fatalities or injuries, is incomplete; this is why it was not possible to elaborate specific graphs.

The strong disparity between the absolute numbers in the various corridor segments, with reference in particular to Rhône Alpes which has the lowest number of reported events, leads us to assume that the criterion used by France to record these kinds of accidents is not homogeneous with that of other countries.

In analysing the indicator, account was taken of this anomaly.

IND.13	INDICATORS-VALUES	Total accidents with personal injuries	Accidents with fatalities	Accidents with injuries
CS	data detail	2000-2005	x	x
	detail scale *	3	3	3
	data completeness	100%	0%	0%
TIC	data detail	2000-2005	x	x
	detail scale *	1	1	1
	data completeness	100%	0%	0%
TYR	data detail	1990, 2000-2005	1990, 2000-2005	1990, 2000-2005
	detail scale *	2	2	2
	data completeness	88%	88%	88%
S_TYR	data detail	1991, 2000-2005	x	x
	detail scale *	1	1	1
	data completeness	88%	0%	0%
VDA	data detail	2002-2006	2002-2006	2002-2006
	detail scale *	2	2	2
	data completeness	63%	63%	63%
RA	data detail	2000-2006	2000-2006	2000-2006
	detail scale *	3	3	3
	data completeness	80%	44%	44%
PI	data detail	x	x	x
	detail scale *	0	0	0
	data completeness	0%	0%	0%

* = stretch road

Table 11: IND. 13 - number of road accident per year at the MONITRAF corridors motorways

Corridor: Gotthard – CS												
Type of accident	km section of motorway A2	Km	1990	2000	2001	2002	2003	2004	2005	2006		
Total accidents with personal injuries	Canton of Luzern: 34.4 km	34.4	x	62	77	61	72	51	61	x		
	Canton of Uri: 53.4 km	53.4	x	17	35	24	19	19	21	x		
	Canton of Nidwalden: 23.8 km	23.8	x	14	18	14	10	19	10	x		
Accidents with fatalities	Canton of Luzern: 34.4 km	34.4	x	x	x	x	x	x	x	x		
	Canton of Uri: 53.4 km	53.4	x	x	x	x	x	x	x	x		
	Canton of Nidwalden: 23.8 km	23.8	x	x	x	x	x	x	x	x		
Accidents with injuries	Canton of Luzern: 34.4 km	34.4	x	x	x	x	x	x	x	x		
	Canton of Uri: 53.4 km	53.4	x	x	x	x	x	x	x	x		
	Canton of Nidwalden: 23.8 km	23.8	x	x	x	x	x	x	x	x		
Corridor: Gotthard - TIC												
Type of accident	km section of motorway A2	Km	1990	2000	2001	2002	2003	2004	2005	2006		
Total accidents with personal injuries	Autostrada A2	115.8	x	177	174	168	135	128	102	x		
Accidents with fatalities	Autostrada A2	115.8	x	x	x	x	x	x	x	x		
Accidents with injuries	Autostrada A2	115.8	x	x	x	x	x	x	x	x		
Corridor: Brenner - TYR												
Type of accident	km section of motorway	Km	1990	2000	2001	2002	2003	2004	2005	2006		
Total accidents with personal injuries	A12 Inntal Autobahn km0,0-74,8	74.8	86	125	144	149	132	118	121	x		
	A13 Brenner Autobahn km 0,0-34,5 without West-branch)	34.5	36	50	41	41	45	49	35	x		
Accidents with fatalities	A12 Inntal Autobahn km0,0-74,8	74.8	7	7	8	7	3	4	5	x		

	A13 Brenner Autobahn km 0,0-34,5 without West-branch)	34.5	2	3	1	1	1	1	0	2	x
Accidents with injuries	A12 Inntal Autobahn km0,0-74,8	74.8	79	118	136	142	129	114	116	116	x
	A13 Brenner Autobahn km 0,0-34,5 without West-branch)	34.5	34	47	40	40	44	49	33	33	x
Corridor: Brenner – S_TYR											
Type of accident	km section of motorway	Km	1991	2000	2001	2002	2003	2004	2005	2006	2006
Total accidents	A 22 - Autostrada di Brennero	120	92	123	105	92	81	77	47	x	
Accidents with fatalities		120	x	x	x	x	x	x	x	x	
Accidents with injuries		120	x	x	x	x	x	x	x	x	
Corridor: Mont Blanc - VDA											
Type of accident	km section of motorway	Km	1990	2000	2001	2002	2003	2004	2005	2006	2006
Total accidents with personal injuries	Pont-St-Martin - Aosta (SAV)	52	x	x	x	31	31	25	21	26	
Accidents with fatalities	Aosta - Courmayeur (RAV)	42	x	x	x	3	2	6	4	3	
	Pont-St-Martin - Aosta (SAV)	52	x	x	x	4	0	1	0	1	
	Aosta - Courmayeur (RAV)	42	x	x	x	0	1	0	0	0	
	Pont-St-Martin - Aosta (SAV)	52	x	x	x	27	31	24	21	25	
	Aosta - Courmayeur (RAV)	42	x	x	x	3	1	6	4	3	
Corridor: Mont Blanc – RA (Réseau ATMB Autoroute Blanche)											
Type of accident	km section of motorway	Km	1990	2000	2001	2002	2003	2004	2005	2006	2006
Total accidents with personal injuries	Bellegarde-Tunnel	47		12	10	23	15	10	26	49	
Corridor: Fréjus – RA (A43)											
Type of accident	km section of motorway	Km	1990	2000	2001	2002	2003	2004	2005	2006	2006
Total accidents with personal injuries	Chambéry - Aiton	38	X	2	5	2	3	3	5	4	
	A Maurienne	67.5	X	x	x	12	8	1	6	2	
Accidents with fatalities	Chambéry - Aiton	38	X	0	1	0	0	0	0	0	

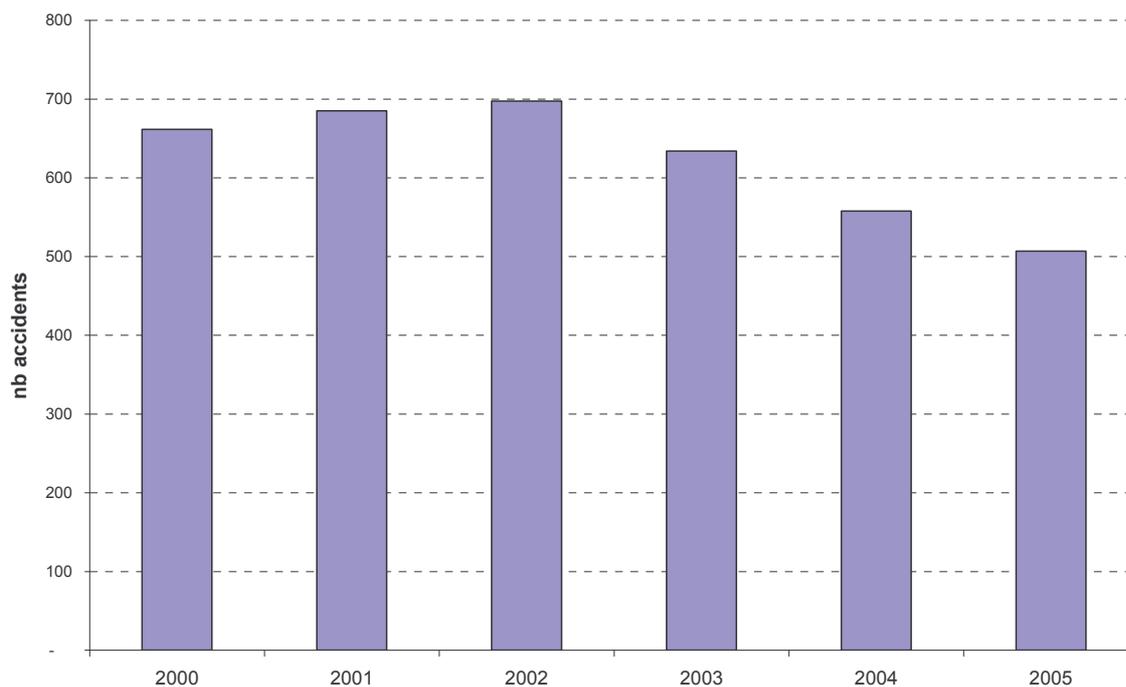


Figure 22: IND. 13 - number of road accident per year at the MONITRAF corridors motorways

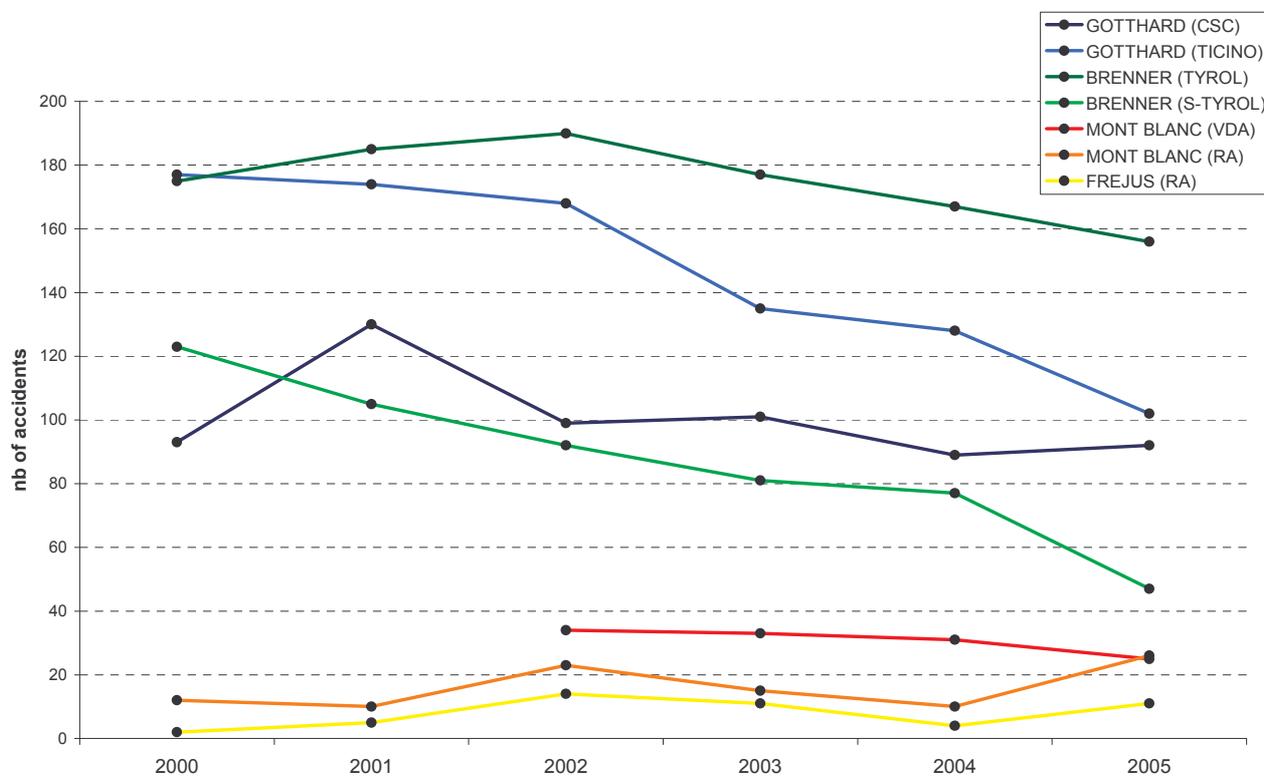


Figure 23: IND. 13 - number of road accident per year and corridor side at the MONITRAF corridors motorways

The corridor stretch with the highest number of accidents with the involvement of people is the Ticino, followed by Tyrol and, at a distance, South-Tyrol. The Gotthard corridor records 51% of the accidents occurred over the five year period 2000-2005, whilst the Brenner records 42%. The two western corridors have more discontinuous data, and which are probably not quite comparable with the others, so the indication of a very low number of accidents shall have to be further assessed.

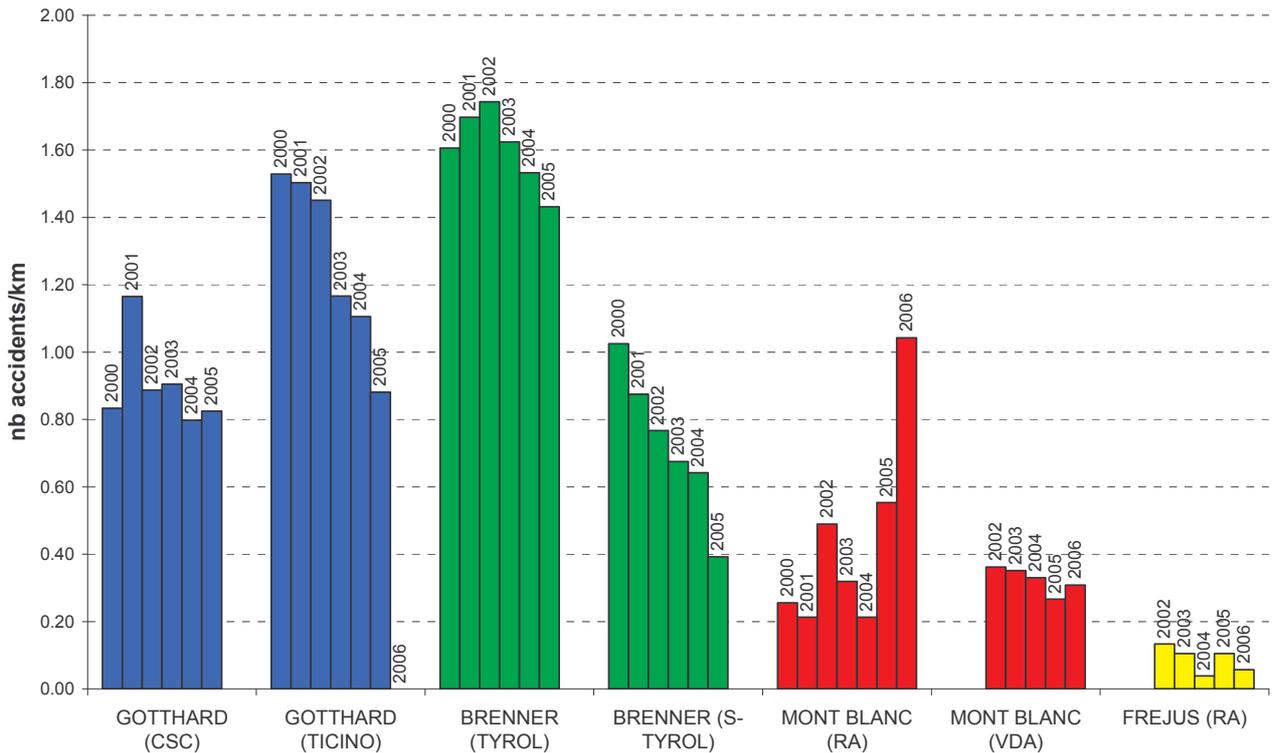


Figure 24: IND. 13 - number of road accident per km, per year and corridor side at the MONITRAF corridors motorways

So as to try and make an evaluation and really compare the different situations, we calculated the incident rate per kilometre per year. Figure 24 shows the results of the elaboration. In this case, the corridor segment with the highest number of accidents is Tyrol, followed by Ticino: compared to the absolute data, the positions are inverted.

Furthermore, it is interesting to notice a general trend towards a reduction in road accidents in the Monitraf corridors altogether and in the individual countries: between 2000 and 2005, -23% is recorded at Monitraf level with a higher accident reduction rate in the countries with higher accident rates. South Tyrol and Ticino record 62% and 44% reductions respectively; but also Tyrol and the Aosta Valley have significant reductions. On the contrary, the two corridors on the French side show increases, however their absolute numbers are very low.

Indicator:		Noise protection infrastructure			
Number:	14	Name:	Investments in noise protection infrastructure		
WP7 Codification:	-	Main category:	Quality of life	Unit:	%
Level:	Corridor (motorway and railway line)				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Coverage of noise protection infrastructure divided into road (motorway) and railway along the defined corridor (only motorway and railway line)				
Calculation:	1) km of motorway which is covered by noise protection infrastructure / km motorway which runs along areas of settlement				
	2) km of railway line which is covered by noise protection infrastructure / km of railway line which runs along areas of settlement				
Data:					
Name:	Noise protection walls	Unit:	geo referenced	Periodicity:	10 years
Period:	2006				
Definition of data to be collected:	1) Exact position of noise protection infrastructure along the motorway on the corridor (geo referenced data, to be indicated the coordinate-system and ellipsoid) 2) Exact position of noise protection infrastructure along the railway line on the corridor (geo referenced data, to be indicated the coordinate-system and ellipsoid)				
Data source (citation basis):					
Other Comments:					
Alternative if geo referenced data is not available for noise protection infrastructure:					
Name:	Noise protection infrastructure	Unit:	km	Periodicity:	10 years
Period:	2006				
Definition of data to be collected:	1) km of noise protection infrastructure along the motorway on the corridor 2) km of noise protection infrastructure along the railway line in the corridor				
Data source (citation basis):	CS and TIC: Road: Federal Office for the Environment. Database for noise protection infrastructure. Rail: Federal transports office. Database for noise protection infrastructure.				
Other Comments:	CS and TIC: The information on noise protection infrastructure will be available from May, 2007.				
GIS data already collected for the description of initial situation					
Name:	Area of permanent settlement				
Definition of data to be collected:	Area of permanent settlement provided as GIS layer, to be indicated the coordinate-system and ellipsoid				

Name:	Road network (motorway)
Definition of data to be collected:	Road network (Motorway) within the project area, provided as GIS layer, to be indicated the coordinate-system and ellipsoid
Name:	Railway network (main railway line)
Definition of data to be collected:	Railway network (main railway line) within the project area, provided as GIS layer, to be indicated the coordinate-system and ellipsoid

Data Quality

The data set available is quite incomplete. Only the Aosta valley has supplied information on the noise barriers along the motorway, whilst for railways, the data is available for the entire Gotthard corridor.

Data scarcity does not allow for complete elaboration of the indicator.

IND.14	INDICATORS-VALUES	noise protection infrastructure along the motorway	km motorway which runs along areas of settlement	noise protection infrastructure along the rail	km of railway line which runs along areas of settlement
CS	data detail	na	na	na	na
	detail scale *	0	0	4	4
	data completeness	0%	0%	100%	100%
TIC	data detail	na	na	na	na
	detail scale *	0	0	4	4
	data completeness	0%	0%	100%	100%
TYR	data detail	na	na	na	na
	detail scale *	0	0	0	0
	data completeness	0%	0%	0%	0%
S_TYR	data detail	na	na	na	na
	detail scale *	0	0	0	0
	data completeness	0%	0%	0%	0%
VDA	data detail	na	na	na	na
	detail scale *	2	2	na	na
	data completeness	100%	100%	na	na
RA	data detail	na	na	na	na
	detail scale *	2	2	0	0
	data completeness	50%	50%	0%	0%
PI	data detail	na	na	na	na
	detail scale *	0	0	0	0
	data completeness	0%	0%	0%	0%

* = stretch number

Table 12: IND. 14 - noise protection infrastructure along the MONITRAF corridors motorways

Corridor	noise protection infrastructure along the motorway	km motorway which runs along areas of settlement	% motorway protected by infrastructure	noise protection infrastructure along the rail	km of railway runs along areas of settlement	% railway line protected by infrastructure
Communities (settlements) considered	km	km		km	km	
Gotthard: CS						
Altdorf	x	x		3.3	3.4	
Ersfeld	x	x		2.5	4.0	
Schwyz	x	x		0.6	3.5	
Steinen	x	x		1.4	3.7	
Total	x	x		7.8	14.5	53%
Gotthard: TIC						
Bellinzona	x	x		3.0	3.6	
Bissone	x	x		0.5	1.8	
Bodio	x	x		1.9	3.1	
Faido	x	x		3.0	2.6	
Melano	x	x		0.6	2.5	
Novazzano	x	x		0.0	0.8	
Total	x	x		9.0	14.4	62%
Brenner: TYR and S_TYR						
	x	x		x	x	
M Blanc: VDA						
Hône	0.41			na	na	
Verres	0.11			na	na	
Total	0.52	10	5%			

M Blanc: RA					
	x	x		na	na
Fréjus: RA					
Commune de la Ravoire	0.78	x		x	x
Communes des Marches et de Myans	0.25	x		x	x
x	9	x			
Total	10.03				
Fréjus PI					
	x	x		x	x

Indicator:		Investments in transport infrastructure					
Number:	15	Name:	Investments in transport infrastructure				
WP7 Codification:	303	Main category:	Infrastru cture	Unit:	€/year		
Level:	Corridor (motorway and railway line)						
Objective:	Basis for assessment of MONITRAF scenarios						
Definition of indicator:	Yearly investments (new investments and maintenance) in transport infrastructures for motorway and main railway line on the corridor, only material costs and without personal costs						
Calculation:	Investments (new investments and maintenance) in transport infrastructures for motorway and main railway line on the corridor per year						
Data:							
Name:	Investments (new investments and maintenance)	Unit	number	Periodicity:	annual		
Period:	2000-2006	Reference period:	1990				
Definition of data to be collected:	Investments (new infrastructure and maintenance) in transport infrastructure for motorway and main railway lines on the corridor per year in Euro or CHF (only material costs and without personal costs)						
Data source (citation basis):							
Other Comments:							
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year						
Please indicate zero and missing values as: 0 = value 0 x = no value existent nv = data existent, but not available for this request na = data not applicable for this request							
Description of type of Investment							
Name	Description						new or maintainance

The indicator was not elaborated because of the difficulty in interpreting and comparing the data collected.

Indicator:				Toll prices			
Number:	16	Name:	Toll prices				
WP7 Codification:	-	Main category:	Prices and regulation	Unit:	€/km		
Level:	Corridor (motorway and tunnel)						
Objective:	Basis for assessment of MONITRAF scenarios						
Definition of indicator:	Toll prices (min. and max. tarif) per km on the motorway and on the tunnel in the project corridor for light vehicles and heavy duty vehicles and vignette (only for light vehicles)						
Calculation:							
Data:							
Name:	Toll prices light vehicles		Unit:	number	Periodicity:	annual	
Period:	2000-2006		Reference period:	1990			
Definition of data to be collected:	Toll prices (min. and max. tarif) per km on the motorway and on the tunnel in the project corridor in € or in CHF						
Data source (citation basis):	TYR: ASFINAG, Amt der Tiroler Landesregierung, Abt. Verkehrsplanung						
Other Comments:							
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year						
Name:	Toll prices heavy duty vehicles		Unit:	number	Periodicity:	annual	
Period:	2000-2006		Reference period:	1990			
Definition of data to be collected:	Toll prices (min. and max. tarif) per km on the motorway and on the tunnel in the project corridor in € or in CHF						
Data source (citation basis):	CS/TIC: Federal Office for Customs: http://www.ezv.admin.ch/zollinfo_firmen/steuern_abgaben/00379/index.html?lang=de . TYR: ASFINAG, Amt der Tiroler Landesregierung, Abt. Verkehrsplanung; S-TYR: Autonome Provinz Bozen-Südtirol, Abteilung Mobilität, Amt für Planung und Gütertransport						
Other Comments:	CS/TIC: The distance-related fee is applied on all the swiss roads ad not only on highways; the min/max costs calculation base on minimal an maximal weight (min: 3.5 t, max: 40 t); all values without 20% VAT. TYR: Road pricing was introduced 2004, all values without 20% VAT						
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year						
Name:	Vignette		Unit:	number	Periodicity:	annual	

Period:	2000-2006	Reference period:	1990
Definition of data to be collected:	Price for vignette in € or in CHF for light vehicles		
Data source (citation basis):	CS/TIC: Federal Office for Customs: http://www.ezv.admin.ch/zollinfo_firmen/steuern_abgaben/00379/index.html?lang=det . TYR: ÖAMTC		
Other Comments:	CS/TIC: The vignette, which is a sticker applied to inside of the windscreen, costs a flat-rate price and is mandatory for motor vehicles and trailers up to a total weight of 3.5 t each. TYR: introduction of vignette for all light vehicles <3,5t in 1997 (since than only one price increase in 2000)		
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year		

Description of categories for toll prices and vignette			
Type of toll	Category	Description	
Gotthard - HGVF		Heavy Goods Vehicle Fee (HGVF)	
		The HGVF bases on the EURO class of the lorry and its weight (min. 3.5 t, max. 40 t)	
		The HGVF doesn't apply to vehicles <3.5 t nor to busses and coaches	
		(Detailed calculation on tab "Calculation")	
Gotthard - Vignette		The vignette applies to vehicles <3.5 t	
Brenner - TYR: Vignette (A12)	A	motorbikes	the vignett was introduced in 1997
	B	vehicles <3,5 t	
	C	vehicles >3,5 t and <7,5 t, 4axes	since the introduction of the road pricing (04) the vignette is only for KAT A+B
	E	vehicles >7,5 t and <12t, 4 axes	
Brenner - TYR: Road pricing (A12)	1	passenger cars <3,5t	no road pricing for category 1
	2	two -axle vehicles > 3,5t	introduction of road pricing in 2004
	3	three-axle vehicles > 3,5t	
	4	four-axle vehicles >3,5t	
Brenner - TYR: Straßenbenützungsabgabe ("road use charge")	3 axes	no EURO class classification	was introduced in 1995 and abolished with the 31.12.2003
		EURO 1	
		EURO 2 +	
	4+ axes	no EURO class classification	
		EURO 1	
		EURO 2 +	
Brenner S-TYR: toll	Leichtverkehr / Traffico	Klasse A / classe A	

price per km motorway	leggero	
	Klasse A / classe A	Motor vehicles with 2 axis and a maximum height of 1,30 metre at the first axis.
	Schwerverkehr / Traffico pesante	Klasse B - Klasse 5 / classe B - classe 5
	Klasse B / classe B	Motor vehicles with 2 axis and a height of more than 1,30 metre at the first axis.
	Klasse 3 / classe 3	Motor vehicles with 3 axis
	Klasse 4 / classe 4	Motor vehicles with 4 axis
	Klasse 5 / classe 5	Motor vehicles with 5 or more axis (Sattelschlepper / motr. p. semirim)
Notes		
Gotthard corridor	<p>The distance-related heavy vehicle fee (HVF) applies to heavy goods vehicles with an admissible GVW (Gross Vehicle Weight) (laden weight) of more than 3.5 tonnes and is calculated according to three criteria:</p> <ul style="list-style-type: none"> * number of kilometres covered on Swiss territory * admissible GVW (Gross Vehicle Weight) (laden weight of the vehicle) * vehicle's emissions <p>Tonne-kilometres as a basis</p> <p>The basis for the calculation is given by a transit journey from Basel to Chiasso with an assumed average distance of 300 km. In their negotiations, Switzerland and the EU agreed a transit price for this journey of a maximum of 330 Swiss francs, for a 40-tonne vehicle. This gives a maximum rate of 2.75 centimes per tonne and kilometre (tkm). The full use of this rate will however be possible only from 1.1.2008 (if the Lötschberg rail tunnel is finished earlier, the full rate may be imposed from the date of the tunnel opening). Beforehand, the following transitional regulations were planned:</p> <ul style="list-style-type: none"> – from 2001–2004 (increase of weight limit to 34 tonnes) the average rate will be 1.68 centimes per tkm. – from 2005 (increase of the weight limit to 40 tonnes) the average rate will be increased to 2.5 centimes. <p>For each vehicle the calculation of the fee owed has a clear basis. Coaches and mobile homes continue to pay a flat-rate fee.</p> <p>The weight of the vehicle</p> <p>To determine the fees, the distance travelled in Switzerland (in kilometres) is multiplied by the weight of the vehicle (in tonnes). The tonne-kilometres calculated are then multiplied by the rate of the fee. Here it is not the weight during operation that is important, but the highest authorised weight according to vehicle licence. The use of the – continually changing – operating weight would have been impracticable. This solution also provides an additional incentive to use the vehicles to the fullest capacity and to avoid empty trips if possible.</p>	

Data Quality

Basic data are complete and comprehensive, with the exception of the French side. There is however a problem with comparability because of the different way means of transport are classified.

IND.16	INDICATORS-VALUES	LV	HDV
CS	data detail	1990, 2000-2006	2001-2006
	detail scale *	1	2
	data completeness	100%	75%
TIC	data detail	1990, 2000-2006	2001-2006
	detail scale *	1	2
	data completeness	100%	75%
TYR	data detail	1990, 2000-2006	1990, 2000-2006
	detail scale *	3	2
	data completeness	96%	100%
S_TYR	data detail	1990, 2000-2006	1990, 2000-2006
	detail scale *	2	2
	data completeness	100%	100%
VDA	data detail	1990, 2000-2006	1990, 2000-2006
	detail scale *	2	2
	data completeness	100%	100%
RA	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%
PI	data detail	1990, 2000-2006	1990, 2000-2006
	detail scale *	2	2
	data completeness	100%	100%

* = min and max values

Table 13: IND. 16 - toll prices per year at the MONITRAF corridors motorways and tunnels

			1990	2000	2001	2002	2003	2004	2005	2006
Brenner-Tyr	LV	vignette (VAT included, A12)	x	0.00	24.22	24.17	24.17	24.17	24.17	24.17
	LV	€/ km (A13)	0.22	0.26	0.19	0.19	0.19	0.19	0.19	0.19
	HDV	€/ km	na	na	na	na	na	1.12	1.12	1.12
Brenner-STyr	LV	€/ km	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
	HDV	€/ km	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
MontBlanc-VdA	LV	€/ km	na	0.15	0.15	0.17	0.17	0.18	0.19	0.20
	HDV	€/ km	na	0.21	0.21	0.24	0.24	0.26	0.27	0.28
MontBlanc-Tunnel	LV	€	na	na	na	27.04	32.48	30.96	31.76	33.04
	HDV	€	na	na	na	132.08	158.48	165.04	172.24	182.56
MontBlanc-RA	LV	€/ km	x	x	x	x	x	x	x	x
	HDV	€/ km	x	x	x	x	x	x	x	x
Frejus-RA	LV	€/ km	x	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	HDV	€/ km	x	x	x	x	x	x	x	x
Frejus-Tunnel	LV	€	13.42	18.75	19.41	20.48	22.48	23.44	24.00	24.96
	HDV	€	66.83	89.49	92.64	132.08	158.48	167.44	172.24	182.56
Frejus-Piem	LV	€/ km	x	0.09	0.09	0.09	0.09	0.09	0.09	0.10
	HDV	€/ km	x	0.16	0.16	0.16	0.17	0.17	0.18	0.18
Gottthard	LV	vignette (VAT included)	18.60	24.80	24.80	24.80	24.80	24.80	24.80	24.80
	HDV	€ t-1 km-1	x	x	0.09	0.09	0.09	0.09	0.13	0.13
	HDV	€ t-1 km-1	x	x	0.42	0.42	0.42	0.42	0.71	0.71
	HDV	€ t-1 km-1	x	x	0.08	0.08	0.08	0.08	0.12	0.12

Since it is difficult to compare the data collected by MONITRAF partners, INFRAS has made a comparative analysis based on the evaluation of a Heavy Duty vehicle taken as a standard and broader routes than the ones considered by MONITRAF. Here is the analysis.

Selection of relations

Indicator 16 presents current toll prices for representative relations across the four MONITRAF corridors.

- › For the Brenner corridor: München – Verona
- › For the Gotthard corridor: Basel – Milano
- › For the Mont-Blanc corridor: Dijon – Torino
- › For the Fréjus corridor: Lyon – Torino

Methodology for calculation of toll prices

Toll prices are calculated in different ways in the countries and regions of the MONITRAF project.

On the general motorway, toll prices depend on the distance and emission class of the vehicle in all countries. In Switzerland, toll prices furthermore depend on the weight of the vehicle.

In addition, France/Italy charge a fee for crossing of the Mont-Blanc and Fréjus tunnels, differentiated for emission classes. At the Brenner, a toll for the Brenner motorway is charged, also differentiated for emission classes.

In order to obtain comparable information, the toll prices for the four relations have been calculated for a standardised HGV (40 tonnes, 5 axles, Euro 3).

The results are shown as total cost per corridor to provide a general idea of cost differences on the four relations/corridors.

As the relations represent different distances, the costs are also shown as Euro per kilometer.

Input data

The calculation is based on current toll prices as charged by the relevant authorities in the year 2007:

France:

Charges on the general motorway (peages) can be calculated on the website: <http://www.autoroutes.fr/>

Information on tolls at Mont-Blanc and Fréjus tunnel is obtained from: <http://www.tunnelmb.net/v3.0/gb/tarifgb.asp> and <http://www.sfrtf.fr/web/guest/tarif>

Italy:

Information on motorway charges is obtained from: <http://www.traveda.de/reisetipps/maut-italien.htm>

Information for the Brenner motorway is obtained from: <http://www.asfinag.at/index.php?idtopic=31>

Switzerland:

Information on the current level of the LSV (from 2008):

http://www.ezv.admin.ch/zollinfo_firmen/stuern_abgaben/00379/index.html

Information on the level of the LSV before 2008:

<http://www.are.admin.ch/themen/verkehr/00250/00461/index.html?lang=de> (p. 33)

Austria:

Information on motorway tolls and special tolls for alpine passages: <http://www.asfinag.at/index.php?idtopic=31>

Germany:

Information on the German motorway toll comes from the relevant ordinance:

<http://bundesrecht.juris.de/mauthv/BJNR100100003.html>

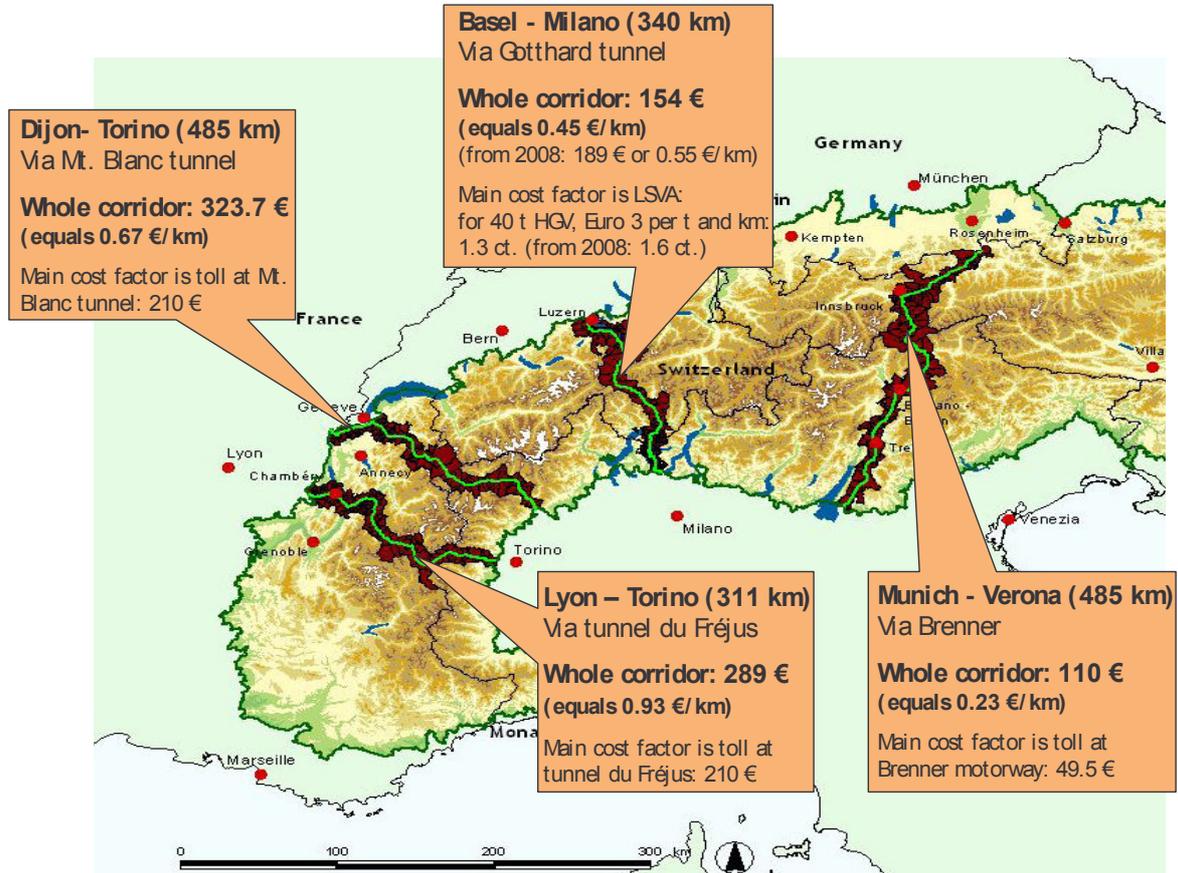


Figure 25: IND. 16 – road tolls at the MONITRAF axes (INFRAS elaboration)

Corridor	Start-End	national parts	Nation	Length (km)	toll 2007 (€)	€/km	toll specification
Brenner	München-Verona	München-Kiefersfelden	D	100	9.0	0.09	Category 4: 4 or more axles Maut Brenner highway
		Kiefersfelden-Innsbruck	A	95	30.9	0.33	
		Innsbruck-Brennero	A	40	49.4	1.24	
		Brennero-Verona	I	250	23.8	0.10	
		München-Verona	total	485	110	0.23	
Gottthard	Basel-Milano	Basel-Chiasso	CH	287	148.1	0.52	0.516 €/km for 40 ton HDV Mountain passage for category 4: 3 Axles with 3-axle trailer
		Chiasso-Milano	I	52	6.0	0.12	
		Basel-Milano	total	339	154	0.45	
Mt. Blanc	Dijon-Torino	Dijon-Chamonix	F	314	94.1	0.30	Peages taken from autoroutes.fr; Tunnel without VAT
		Chamonix-Pré St. Didier	F	28	210.0	7.50	
		Pré St. Didier-Torino	I	143	19.6	0.14	
		Dijon-Torino	total	485	324	0.67	
Frejus	Lyon-Torino	Lyon-Modane	F	198	67.7	0.34	Peages taken from autoroutes.fr; Tunnel without VAT; Mountain passage for category 4: 3 Axles with 3-axle trailer
		Modane-Bardonecchia	F	11	210.0	19.0	
		Bardonecchia-Torino	I	102	11.8	0.12	
		Lyon-Torino	total	311	289	0.93	

Indicator:				Fuel prices	
Number:	17	Name:	Fuel prices		
WP7 Codification:	403	Main category:	Prices and regulation	Unit:	€/l
Level:	NUTS 2 level, state level				
Objective:	Basis for assessment of MONITRAF scenarios				
Definition of indicator:	Yearly average of fuel prices (what the final consumer pays) on regional level (NUTS 2) and for the state distinguished between diesel and petrol				
Calculation:	Yearly average of the fuel prices (what the final consumer pays) per season (one day per season: 15.1., 15.5., 15.7., 15.10) on regional level (NUTS 2) and for the state distinguished between diesel and petrol				
Data:					
Name:	Fuel price	Unit:	EURO	Periodicity:	annual
Period:	2000-2006	Reference period:	1990		
Definition of data to be collected:	Fuel prices (yearly average) for every season on regional level (NUTS 2) and for the state distinguished between diesel and petrol in € or in CHF				
Data source (citation basis):	Gottard: Data provided by the Institute of economic research (Università della Svizzera Italiana: IRE, Istituto di Ricerche Economiche, Via Maderno 24, CP 4361, CH-6904 Lugano, Tel. +41 (0)58 666 4661, http://www.ire.eco.unisi.ch/)				
Other Comments:					
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year				

Data Quality

The 1990 and the 2006 data in some cases are not available. Apart from that, the sets are complete at national level. There are no specific data available at a more local level.

IND.17	INDICATORS-VALUES	diesel	petrol
CH	data detail	2000-2005	2000-2005
	detail scale *	4	4
	data completeness	75%	75%
AUS	data detail	2000-2006	2000-2006
	detail scale *	4	4
	data completeness	88%	88%
IT	data detail	2000-2006	2000-2006
	detail scale *	4	4
	data completeness	88%	88%
FRA	data detail	1990, 2000-2006	1990, 2000-2006
	detail scale *	4	4
	data completeness	100%	96%

* = season values

Table 14: IND. 17 - national fuel prices per year across the Alps (euro)

SWITZERLAND					
Region (NUTS 2): Central Switzerland (CH06) and Ticino (CH07)					
Diesel					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	X	X	X	X	X
2000	0,879	0,879	0,905	0,976	0,910
2001	0,967	0,920	0,947	0,927	0,940
2002	0,900	0,913	0,907	0,920	0,910
2003	0,894	0,914	0,868	0,894	0,892
2004	0,881	0,900	0,920	0,998	0,925
2005	0,988	1,008	1,059	1,137	1,048
2006	nv	nv	nv	nv	nv

SWITZERLAND					
Region (NUTS 2): Central Switzerland (CH06) and Ticino (CH07)					
non leaded S-plb98					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	X	X	X	X	X
2000	0,860	0,905	0,969	0,956	0,923
2001	0,933	0,960	0,960	0,920	0,943
2002	0,893	0,920	0,934	0,941	0,922
2003	0,901	0,907	0,874	0,894	0,894
2004	0,868	0,913	0,959	0,972	0,928
2005	0,924	0,969	1,014	1,111	1,004
2006	nv	nv	nv	nv	nv

AUSTRIA					
Region (NUTS 2): TYROL					
Diesel					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	X	X	X	X	0,640
2000	0,715	0,737	0,761	0,846	0,765
2001	0,759	0,770	0,759	0,733	0,755
2002	0,722	0,751	0,694	0,717	0,721
2003	0,747	0,714	0,704	0,709	0,719
2004	0,731	0,802	0,803	0,863	0,800
2005	0,861	0,895	0,982	1,035	0,943
2006	0,976	1,042	1,051	0,987	1,014

AUSTRIA					
Region (NUTS 2): Austria (NUTS 0)					
petrol (91 octane)					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	annual average 0,676				0,676
2000	0,841	0,916	0,953	0,908	0,905
2001	0,851	0,943	0,892	0,840	0,882
2002	0,824	0,864	0,824	0,809	0,830
2003	0,849	0,839	0,834	0,837	0,840
2004	0,830	0,939	0,937	0,974	0,920
2005	0,890	0,948	1,037	1,119	0,999
2006	1,024	1,132	1,119	1,006	1,070

ITALY					
Region (NUTS 2): S-TYR, VdA, PIEDMONT					
Diesel					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	X	X	X	X	X
2000	0,847	0,865	0,891	0,971	0,89
2001	0,914	0,883	0,888	0,862	0,87
2002	0,850	0,880	0,858	0,889	0,86
2003	0,909	0,867	0,864	0,872	0,88
2004	0,890	0,944	0,950	1,022	0,94
2005	1,020	1,079	1,148	1,233	1,11
2006	1,173	1,225	1,223	1,133	1,189

ITALY					
Region (NUTS 2): S-TYR, VdA, PIEDMONT					
Petrol (without Pb)					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	X	X	X	X	X
2000	1,007	1,074	1,131	1,121	1,08
2001	1,048	1,128	1,069	1,035	1,05
2002	1,005	1,082	1,064	1,080	1,05
2003	1,082	1,048	1,055	1,055	1,06
2004	1,059	1,153	1,159	1,188	1,13
2005	1,101	1,218	1,259	1,349	1,22
2006	1,271	1,359	1,399	1,233	1,316

FRANCE					
Region (NUTS 2):SAVOIE, H.te SAVOIE					
Diesel					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	0,549	0,502	0,492	0,612	0,54
2000	0,806	0,808	0,830	0,907	0,84
2001	0,804	0,819	0,806	0,790	0,80
2002	0,741	0,773	0,751	0,809	0,77
2003	0,820	0,761	0,759	0,779	0,78
2004	0,804	0,880	0,875	0,972	0,88
2005	0,922	0,985	1,057	1,105	1,02
2006	1,059	1,112	1,116	1,039	1,08

FRANCE					
Region (NUTS 2):SAVOIE, H.te SAVOIE					
Petrol (Super SP98)					
year	15.01.	15.05.	15.07.	15.10.	annual average
1990	x	0,765	0,774	0,894	0,81
2000	1,048	1,111	1,148	1,119	1,11
2001	1,034	1,151	1,061	1,018	1,07
2002	0,985	1,050	1,027	1,069	1,03
2003	1,066	1,017	1,016	1,015	1,03
2004	1,023	1,131	1,103	1,130	1,10
2005	1,073	1,151	1,234	1,292	1,19
2006	1,265	1,330	1,360	1,196	1,29

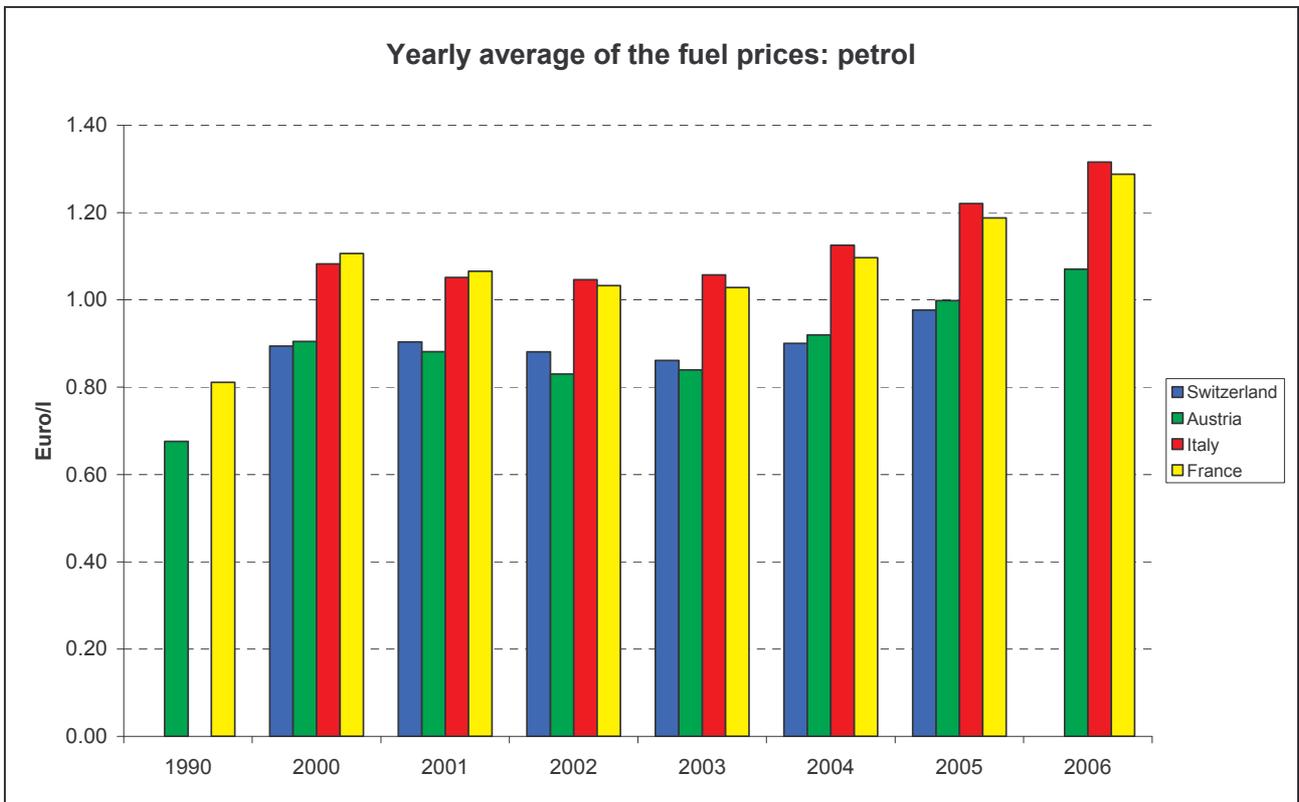
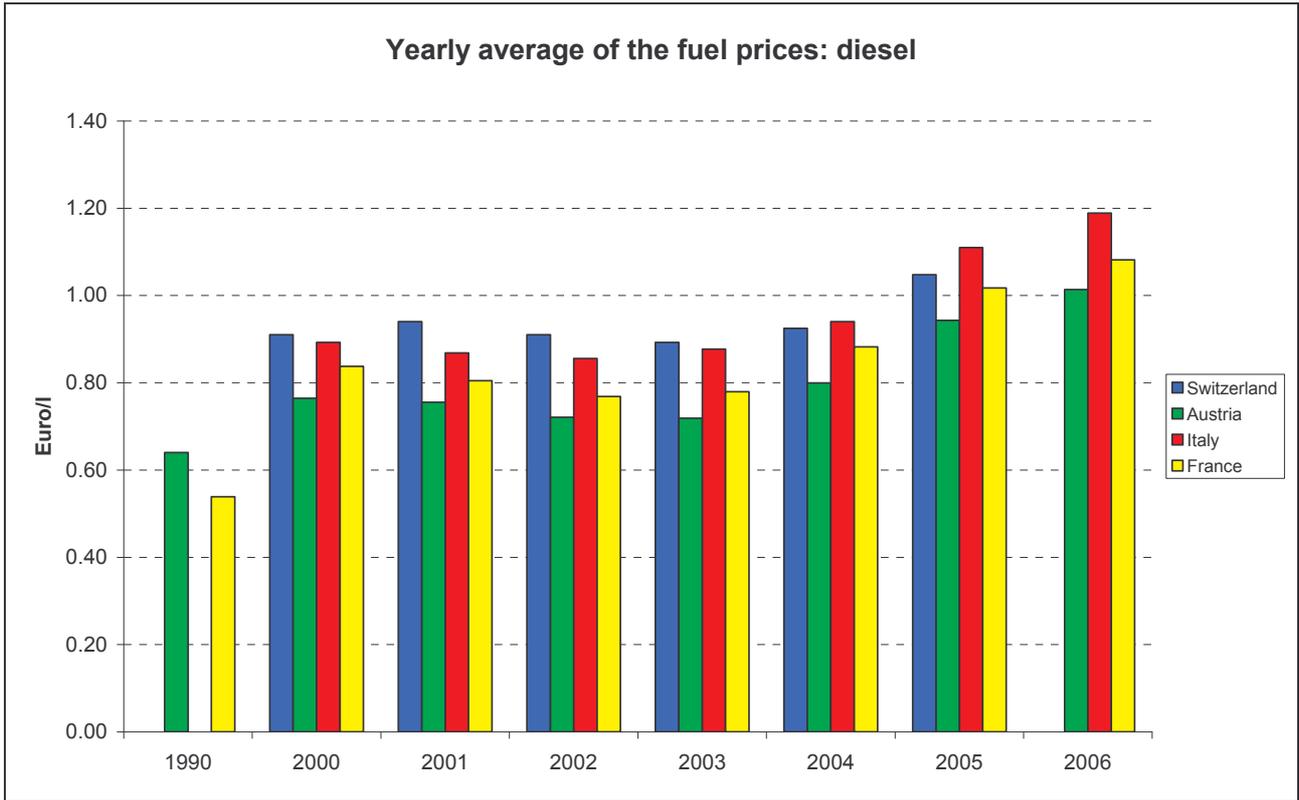


Figure 26: IND. 17 - national fuel prices per year across the Alps: diesel and petrol

The price of fuel has grown at a constant rate in all countries since 2003. Altogether, specific seasonal trends are visible. The country with the highest diesel oil price, at least in the last three years of the set considered, is Italy, followed by Switzerland. Italy again, is the country with the highest petrol price since 2002, this time followed closely by France. Austria has the lowest prices among Monitraf countries, for the period considered and for both kinds of fuel; only in 1990 did Switzerland have lower diesel prices. It is possible to evaluate the price gap, considering that on average prices in Austria are lower than in Italy by 18% in the case of diesel oil and 23% in the case of petrol.

Indicator:				GDP per inhabitant			
Number:	18	Name:	GDP per inhabitant				
WP7 Codification:	701	Main category:	Economy	Unit:	€/inhabitant		
Level:	NUTS 3 and NUTS 2						
Objective:	Description of the background situation, estimation of economic development and comparison of the regional development						
Definition of indicator:	Value of the economic performance resulting from productive activities in a period of reference, calculated for NUTS 3 level and NUTS 2 level						
Calculation:	GDP (NUTS 3 level) / inhabitants (NUTS 3 level) (indicator n° 19) GDP (NUTS 2 level) / inhabitants (NUTS 2 level) (indicator n° 19)						
Data:							
Name:	GDP		Unit:	number	Periodicity:	annual	
Period:	2000-2006	Reference period:	1990, 1995				
Definition of data to be collected:	GDP in Euro or CHF at current market prices for NUTS 3 level and NUTS 2 level. According to ESA95 definitions GDP at market prices includes VAT and excludes subsidies on products. GDP is equivalent to the market value of all final products and services (without double counting products used in other output) produced within a certain country or region over a specific time period, usually one year.						
Data source (citation basis):	CS - EUROSTAT, Swiss Federal Statistical Office; TIC - IRE, Istituto di Ricerche Economiche, Via Maderno 24, CP 4361, CH-6904 Lugano, Tel. +41 (0)58 666 4661, http://www.ire.eco.unisi.ch/ . TYR - EUROSTAT S-TYR - ISTAT. VDA - ISTAT. RA: France - INSEE						
Other Comments:	In Switzerland the national income (CHF) instead of the GDP could be used on NUTS 3 level						
Currency conversion:	Data has to be defined for currency conversion. Suggestion for conversion date: 31.12. of the respective year						
Name:	inhabitants		Unit:	number	Periodicity:	annual	
Period:	2000-2005	Reference period:	1990, 1995				
Definition of data to be collected:	inhabitants for NUTS 3 level and NUTS 2 level (see indicator n° 19)						
Data source (citation basis):	(see indicator n° 19)						

basis):	
Other Comments:	CS: Data for years 2004 and 2005 were not available und were estimated (see note)
NOTES	
Gotthard: CS	The 2004 and 2005 GDP percentages were not available. They were estimated as a mean of the years 1990-2003 (approximation). These estimated percentages were used to calculate the BIP per Canton, based on the national BIP
Mont Blanc/ Fréjus: RA	GDP data for the years 1990-2003 are definitive, 2004 semi-definitive and 2005 provisional

Data Quality

Data sets do not have the same type of time distribution in the countries considered: this depends on the time frequency of data collection at local level (NUT3 level) and on the years chosen for the census (ex: for France, reference is made to 1999 instead of 2000). Data for the Italian side of the Fréjus are not available.

Year 2006 data are not available for any country.

IND.18	INDICATORS-VALUES	NUT2	NUT3
CS	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale *	1	5
	data completeness	89%	89%
TIC	data detail	1990, 1995, 2000, 2005	1990, 1995, 2000, 2005
	detail scale *	1	1
	data completeness	45%	45%
TYR	data detail	1995, 2000-2004	1995, 2000-2004
	detail scale *	1	5
	data completeness	67%	67%
S_TYR	data detail	1995, 2000-2004	1995, 2000-2004
	detail scale *	1	1
	data completeness	67%	67%
VDA	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale *	1	1
	data completeness	89%	89%
RA	data detail	1990, 1995, 2000-2005	2000
	detail scale *	1	4
	data completeness	89%	11%

PI	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%

* = NUTS number

Table 15: IND. 18 - GDP for the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard - CS									
NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
		National income (instead of the GDP) in CHF							
Luzern	CH061	39,623	43,096	44,569	45,246	45,931	46,297	47,278	47,953
Uri	CH062	36,958	44,843	42,422	43,369	43,384	43,583	46,922	47,808
Schwyz	CH063	38,842	39,544	42,534	43,694	42,864	42,576	43,007	43,336
Obwalden	CH064	35,100	35,099	36,326	36,691	36,849	37,075	38,510	39,116
Nidwalden	CH065	52,398	51,579	49,668	51,703	51,605	50,969	53,523	54,121
exchange rate		---	---	0.642	0.662	0.682	0.657	0.648	0.646
		National income (instead of the GDP) in EUR							
Luzern	CH061	39,623	43,096	28,609.08	29,954.27	31,308.90	30,434.72	30,624.18	30,971.83
Uri	CH062	36,958	44,843	27,230.85	28,711.23	29,572.60	28,650.21	30,393.35	30,878.10
Schwyz	CH063	38,842	39,544	27,302.83	28,926.45	29,218.36	27,988.65	27,857.49	27,989.50
Obwalden	CH064	35,100	35,099	23,317.74	24,290.41	25,118.14	24,372.09	24,944.69	25,263.91
Nidwalden	CH065	52,398	51,579	31,882.43	34,228.69	35,176.41	33,506.03	34,669.23	34,955.37
NUTS 2	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005
		National income (instead of the GDP) in CHF							
Central Switzerland	CH06	42,848	45,553	48,919	49,745	50,011	50,184	50,520	51,127
exchange rate		---	---	0.642	0.662	0.682	0.657	0.648	0.646
		National income instead of the GDP (in EUR)							
Central Switzerland	CH061	42,848	45,553	31,401.71	32,932.08	34,089.98	32,989.44	32,723.78	33,021.66
Corridor: Gotthard - TIC									

NUTS 3 and NUTS 2	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005
Ticino CHF	CH07	52,352	53,551	58,908.17	nv	nv	nv	nv	61,261.96
<i>exchange rate</i>		---	---	0.642	0.662	0.682	0.657	0.648	0.646
		in CHF		National income instead of the GDP (in EUR)					
Ticino EURO	CH07	52,352	53,551	37,813.55	nv	nv	nv	nv	39,567.71
Corridor: Brenner - TYR									
NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
Innsbruck	AT332		24,900.00	29,100.00	29,500.00	30,100.00	30,300.00	31,300.00	
Tiroler Unterland	AT335		22,800.00	26,700.00	27,600.00	28,800.00	29,800.00	30,000.00	
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005
Tirol	AT33		22,800.00	26,500.00	27,200.00	28,200.00	28,800.00	29,500.00	

Corridor: Brenner - S-TYR									
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005
Bolzano-Bozen	ITD10	na	21,114.44	27,986.91	28,304.09	28,529.12	29,386.58	30,980.13	na
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005
Provincia Autonoma Bolzano-Bozen	ITD1	na	21,114.44	27,986.91	28,304.09	28,529.12	29,386.58	30,980.13	na
Corridor: Mont Blanc - VDA									
NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
Valle d'Aosta Mio Euro	ITC20	17,267.86	22,865.43	25,839.51	27,319.75	27,909.45	29,033.05	29,952.82	31,032.12
NUTS 2	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005
Valle d'Aosta Mio Euro	ITC2	17,267.86	22,865.43	25,839.51	27,319.75	27,909.45	29,033.05	29,952.82	31,032.12
Corridor: Mont Blanc - RA									

NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
Savoie		x	x	14,239.79	x	x	x	x	x
Haute-Savoie		x	x	40,727.24	x	x	x	x	x
NUTS 2	NUTS 2 Code	1990	1995	2000 (1999 inhab)	2001	2002	2003	2004	2005
Région Rhône-Alpes		18,132.00	20,317.00	24,123.00	24,810.00	25,100.00	25,817.00	26,988.00	28,131.00
Corridor: FREJUS - RA									
NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
Isère		x	x	23,500.27	x	x	x	x	x
Savoie		x	x	14,239.79	x	x	x	x	x
NUTS 2	NUTS 2 Code	1990	1995	2000 (1999 inhab)	2001	2002	2003	2004	2005
Région Rhône-Alpes		18,132.00	20,317.00	24,123.00	24,810.00	25,100.00	25,817.00	26,988.00	28,131.00
Corridor: FREJUS - PI									
NUTS 3	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005
Torino		x	x	x	x	x	x	x	x
NUTS 2	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005
Regione Piemonte		x	x	x	x	x	x	x	x

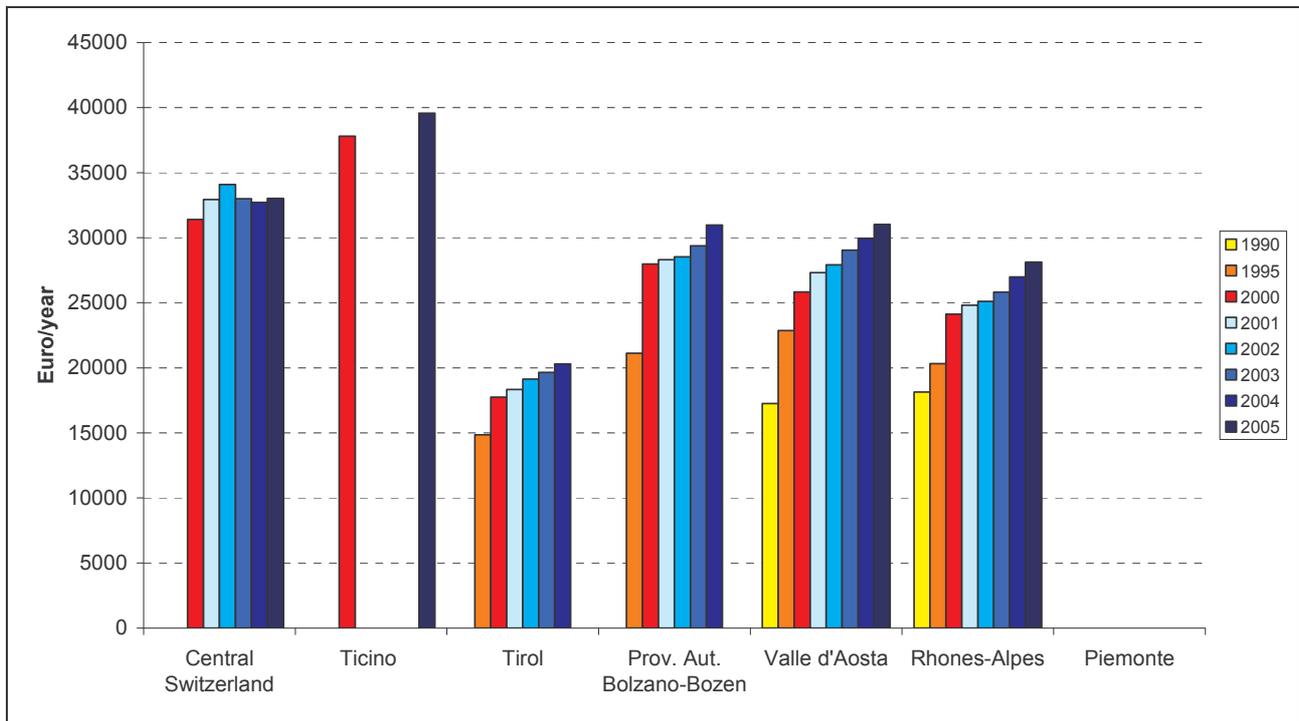


Figure 27: IND. 18 - GDP per year for the MONITRAF regions (NUTS 2)

In general, GDP is growing in all the countries considered, and absolute values are high. However it is possible to point out appreciable differences: the Swiss cantons' GDP is much higher than that of the other countries; NUT 2 level regions and cantons' GDP per inhabitant is higher than the European average (referred to year 2005 for EU 27 countries), approximately 22,200 Euros per inhabitant. By and large, the Monitraf territories per capita GDP is even higher than that of the Alpine Space calculated in the MARS Report 2005 for the year 2003, equivalent to 22,859 Euros.

The trend of NUT3 level departments and regions is more or less comparable to higher level territories with the exception of Osttirol and Savoie, whose GDP per inhabitant is decidedly lower.

Indicator:				Population	
Number:	19	Name:	Population		
WP7 Codification:	-	Main category:	Society	Unit:	inhabitants
Level:	LAU 2 (NUTS 5), NUTS 3 and NUTS 2				
Objective:	Description of the background situation and the potential disadvantage of the population; comparison of the regional development				
Definition of indicator:	Inhabitants in the selected municipalities (NUTS 5) along the corridors and in the regions (NUTS 2 and NUTS 3)				
Calculation:	Number of inhabitants per municipality (NUTS 5) and region (NUTS 2 and NUTS 3)				
Data:					
Name:	inhabitants	Unit:	number	Periodicity:	annual
Period:	2000-2006, forecast 2010 and 2020		Reference period:	1990, 1995	
Definition of data to be collected:	Inhabitants in the selected municipalities along the corridor (NUTS 5) and the region (NUTS 2 and NUTS 3), derived from the population register and forecast 2010-2020 (only on NUTS 2 level)				
Data source (citation basis):	<p>CS: Population data: Swiss Statistics. Komponenten der Bevölkerungsentwicklung. Bilanz der ständigen Wohnbevölkerung. Population forecasts: Swiss Statistics. Population Scenario. See http://www.bfs.admin.ch/bfs/portal/de/index/themen/01.html;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/; http://www.ti.ch/DFE/USTAT/DATI/superweb/default.asp.</p> <p>S-TYR: ISTAT (National Statistical Institute of Italy), ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), figures derived from the population register; for forecast: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige): Die voraussichtliche Bevölkerungsentwicklung in Südtirol bis zum Jahr 2020 / Previsione sull'andamento demografico in provincia di Bolzano fino al 2020. Issue N° 58, 1998.</p> <p>VDA: ISTAT;</p> <p>RA: Estimation de population au 1er janvier; Source : INSEE.</p>				
Other Comments:	<p>CS: Provisory, no data has been provided for NUTS 5; no population forecasts are available for NUTS 2; the forecast data base on scenario "medium". Also available: scenarios "low" and "high".</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of inhabitants.</p> <p>S-TYR: Resident population at 31.12. of the respective year; Persons registered at the population register. Forecast: A new forecast is in work right now, will be published this year (date information: 07/2007).</p> <p>VDA - Resident population at 31.12. of the respective year, the forecast data base on scenario "medium";</p>				

Data Quality

The sets of data are quite complete as to the central years of the period taken into account (2000-2005). The Rhône-Alpes data diverge in that the available sets only refer to the general censuses of 1990 and 1999. Central Switzerland does not report municipality population data.

IND.19	INDICATORS-VALUES	NUT2	NUT3	NUT5
CS	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	x
	detail scale *	1	5	0
	data completeness	73%	73%	0%
TIC	data detail	1990, 1995, 2000-2005, 2010, 2020	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale *	1	1	140
	data completeness	91%	73%	73%
TYR	data detail	1990, 1995, 2000-2005, 2010, 2020	1990, 1995, 2000-2005, 2010, 2020	1990, 1995, 2000-2005
	detail scale *	1	5	72
	data completeness	91%	91%	73%
S_TYR	data detail	1990, 1995, 2000-2006, 2010, 2020	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	38
	data completeness	100%	82%	82%
VDA	data detail	1990, 1995, 2000-2005, 2010, 2020	1990, 1995, 2000-2005, 2010, 2020	1995, 2000-2005
	detail scale *	1	1	41
	data completeness	91%	91%	64%
RA	data detail	1990, 1999, 2005, 2010, 2020	1990, 1995, 2000-2005	1990, 1999
	detail scale *	1	3	245
	data completeness	46%	73%	18%
PI	data detail	1995, 2000-2006, 2010, 2020	1995, 2000-2006	1995, 2000-2006
	detail scale *	1	1	37
	data completeness	91%	73%	73%

* = NUTS number

Table 16: IND. 19 - inhabitants per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard - CS												
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Luzern	CH061	319,525	340,536	347,209	350,017	351,889	353,175	354,731	356,384	x		
Uri	CH062	33,650	35,876	35,246	34,992	35,209	35,118	35,083	35,087	x		
Schwyz	CH063	110,526	122,409	130,232	131,264	133,227	134,903	135,989	137,522	x		
Obwalden	CH064	28,813	31,310	32,414	32,678	32,961	33,142	33,162	33,269	x		
Nidwalden	CH065	32,628	36,466	38,000	38,389	38,736	39,070	39,497	39,803	x		
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Zentralschweiz	CH06	610,050	658,989	682,489	688,362	694,429	699,050	703,706	708,561	x		
Corridor: Gotthard - TIC												
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Ticino	CH07	286,600	305,200	310,200	312,528	315,256	317,315	319,931	322,276	nv		
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Ticino	CH07	286,600	305,200	310,200	312,528	315,256	317,315	319,931	322,276	nv		
Corridor: Brenner - TYR												
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Innsbruck	AT332	250,837	259,391	266,762	269,149	271,548	273,079	275,761	278,186			
Tiroler Unterland	AT335	204,718	219,003	226,869	228,511	230,870	232,575	234,859	236,609			
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Tirol	AT33	621,826	654,113	672,209	676,655	682,638	686,809	692,281	697,435			
Corridor: Brenner S-TYR												
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		

Bolzano-Bozen	ITD10	441,671	451,563	465,264	460,845	467,340	471,637	477,067	482,650	487,673
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	441,671	451,563	465,264	460,845	467,340	471,637	477,067	482,650	487,673
Corridor: Mont Blanc - VDA										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	115,99	118,723	119,273	119,548	120,909	122,040	122,868	123,978	nv
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Regione Autonoma Valle d'Aosta	ITC2	115,996	118,723	119,273	119,548	120,909	122,040	122,868	123,978	nv
Corridor: Mont Blanc/Fréjus: RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999 /2000	2001	2002	2003	2004	2005	2006
Isère		1,015,238	1,059,768	1,102,796	1,114,127	1,126,264	1,138,242	1,150,391	1,161,560	x
Haute Savoie		567,735	607,187	638,914	648,286	657,843	667,628	677,730	686,362	X
Savoie		348,089	362,340	376,603	381,104	385,898	390,816	395,777	400,247	X
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes		5,351,000	x	5,645,000	x	x	x	x	6,005,000	X
Corridor: Fréjus - PI										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Torino			2,220,724	2,214,934	2,165,299	2,172,226	2,191,960	2,236,941	2,242,775	2,248,955
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Piemonte			4,288,866	4,289,731	4,213,294	4,231,334	4,270,215	4,330,172	4,341,733	4,352,828

Table 17: IND. 19 - inhabitants per year in the MONITRAF regions (NUTS 5)

Corridor: Gotthard - CS												
Municipality, NUTS 5 Label	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
		nv	nv									
Corridor: Gotthard - TIC												
Municipality, NUTS 5 Label	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006		
Agno	2105005141	3,222	3,638	3,576	3,742	3,752	3,740	3,775	3,776	nv		
Airolo	2103005061	1,857	1,912	1,726	1,685	1,660	1,650	1,647	1,628	nv		
Anzonico	2103005062	99	113	117	103	105	102	105	104	nv		
Aranno	2105005143	240	239	271	272	285	272	282	300	nv		
Arbedo-Castione	2101005001	3,638	3,876	3,884	3,863	3,947	4,025	4,018	3,975	nv		
Arogno	2105005144	809	836	954	981	982	967	957	970	nv		
Airzo	2106005241	892	998	1'062	1,009	1,042	1,078	1,085	1,104	nv		
Balerna	2106005242	3,440	3,433	3,500	3,442	3,415	3,426	3,444	3,507	nv		
Barbengo	2105005147	1,042	1,423	1,579	1,643	1,658	1,669	1,692	1,739	nv		
Bedano	2105005148	898	1,020	1,172	1,218	1,272	1,296	1,302	1,328	nv		
Bedigliora	2105005149	421	492	513	581	571	555	603	605	nv		
Bellinzona	2101005002	16,942	17,330	16,756	16,797	16,862	16,693	16,796	16,880	nv		
Besazio	2106005243	484	481	539	535	570	592	603	598	nv		
Biasca	2107005281	5736	6'125	5853	5900	5926	5947	5935	5938	nv		
Bidogno	2105005150	331	351	345	311	314	315	328	334	nv		
Bironico	2105005153	458	454	516	557	550	577	582	614	nv		
Bissone	2105005154	730	773	773	737	758	761	781	803	nv		
Bodio	2103005064	1,219	1,185	1,108	1,078	1,038	1,047	1,081	1,083	nv		
Bogno	2105005155	121	128	104	102	109	124	116	124	nv		

Brusino Arsizio	2105005160	404	428	461	470	474	468	481	468	468	nv
Bruzella	2106005244	157	176	204	186	194	195	185	188	188	nv
Cabbio	2106005245	157	175	181	172	179	187	207	213	213	nv
Cademario	2105005161	507	552	610	631	635	642	650	674	674	nv
Cadempino	2105005162	1,133	1,326	1,328	1,372	1,377	1,374	1,388	1,360	1,360	nv
Cadro	2105005163	1,448	1,570	1,615	1,689	1,694	1,753	1,799	1,826	1,826	nv
Calpiogna	2103005066	71	50	47	37	37	39	39	35	35	nv
Camignolo	2105005165	574	582	603	626	635	651	664	689	689	nv
Camorino	2101005004	1,743	1,963	2,240	2,277	2,346	2,377	2,420	2,509	2,509	nv
Campello	2103005067	45	53	51	53	58	58	58	59	59	nv
Caneggio	2106005246	nv	nv	nv	nv	nv	nv	337	336	336	nv
Canobbio	2105005167	1,691	1,794	1,853	1,812	1,817	1,819	1,799	1,821	1,821	nv
Capolago	2106005247	651	730	706	719	719	732	724	726	726	nv
Carabbia	2105005168	411	508	535	520	521	524	521	532	532	nv
Carabietta	2105005169	87	81	106	100	105	110	116	123	123	nv
Carona	2105005170	638	695	690	688	693	687	718	737	737	nv
Casiano	2105005171	3,046	3,415	3,544	3,631	3,666	3,737	3,719	3,758	3,758	nv
Cavagnago	2103005068	95	96	89	86	89	88	91	93	93	nv
Certara	2105005173	65	78	79	63	65	59	61	58	58	nv
Chiasso	2106005250	8,260	8,116	7,875	7,653	7,768	7,738	7,721	7,706	7,706	nv
Chironico	2103005070	431	457	427	423	407	408	402	402	402	nv
Cimadara	2105005174	95	103	102	106	104	104	107	108	108	nv
Claro	2107005282	1,591	1,852	2,152	2,198	2,251	2,257	2,315	2,370	2,370	nv
Coldrerio	2106005251	2,429	2,510	2,627	2,600	2,604	2,617	2,628	2,614	2,614	nv
Comano	2105005176	1,519	1,585	1,645	1,683	1,707	1,711	1,698	1,729	1,729	nv
Contone	2104005101	460	612	738	723	756	776	750	759	759	nv

Corticiasca	2105005177	91	118	121	140	140	140	141	143	144	nv
Cresciano	2107005283	536	625	600	582	610	597	593	614	nv	
Croglio	2105005178	783	805	848	830	825	830	840	850	nv	
Cugnasco	2104005104	820	973	1,153	1,167	1,185	1,208	1,258	1,278	nv	
Cureglia	2105005180	1,070	1,216	1,287	1,235	1,264	1,278	1,290	1,277	nv	
Curio	2105005181	421	498	535	527	553	558	565	553	nv	
Dalpe	2103005071	182	168	177	172	175	175	171	165	nv	
Genestrerio	2106005252	786	857	857	865	871	865	869	905	nv	
Giornico	2103005073	1,092	1,074	948	932	945	935	943	940	nv	
Giubiasco	2101005005	7,030	7,535	7,525	7,618	7,707	7,813	7,871	7,867	nv	
Gnosca	2101005006	444	456	524	534	559	576	586	588	nv	
Gordola	2104005108	3,533	3,714	3,844	3,945	4,005	4,079	4,149	4,203	nv	
Gorduno	2101005007	573	649	646	653	666	672	682	695	nv	
Grancia	2105005186	316	313	377	386	378	381	389	391	nv	
Gravesano	2105005187	990	1,056	1,074	1,066	1,049	1,058	1,068	1,106	nv	
Gudo	2101005008	523	630	688	711	710	732	754	735	nv	
Iragna	2107005284	442	499	495	507	516	530	528	538	nv	
Iseo	2105005188	61	79	78	72	72	71	73	78	nv	
Isonne	2101005009	401	414	378	361	371	378	364	360	nv	
Lamone	2105005189	1,516	1,412	1,621	1,631	1,648	1,648	1,612	1,616	nv	
Ligornetto	2106005253	1,323	1,395	1,442	1,487	1,523	1,537	1,552	1,604	nv	
Locarno	2104005113	13,658	14,556	14,465	14,520	14,426	14,482	14,469	14,556	nv	
Lodrino	2107005285	1,273	1,428	1,517	1,525	1,526	1,540	1,556	1,579	nv	
Ludiano	2102005040	242	272	287	325	326	332	346	359	nv	
Lugaggia	2105005191	491	567	717	766	786	792	827	836	nv	
Lumino	2101005010	1,086	1,157	1,161	1,170	1,183	1,196	1,206	1,223	nv	

Magadino	2104005116	1,279	1,490	1,557	1,535	1,526	1,547	1,569	1,610	nv
Magliaso	2105005193	1,212	1,316	1,384	1,374	1,411	1,376	1,412	1,387	nv
Mairengo	2103005074	242	306	286	270	333	369	413	451	nv
Malvaglia	2102005041	1,179	1,209	1,234	1,234	1,260	1,262	1,276	1,287	nv
Manno	2105005194	1,007	1,009	1,087	1,106	1,117	1,131	1,134	1,140	nv
Maroggia	2105005195	555	572	571	559	557	555	566	586	nv
Massagno	2105005196	5,313	5,728	5,645	5,666	5,735	5,731	5,750	5,685	nv
Medeglia	2101005011	325	347	355	340	331	345	340	345	nv
Melano	2105005197	933	1,014	1,095	1,117	1,139	1,148	1,172	1,181	nv
Melide	2105005198	1,393	1,514	1,513	1,543	1,582	1,642	1,671	1,661	nv
Meride	2106005255	292	321	324	309	315	311	307	313	nv
Mezzovico-Vira	2105005199	787	907	914	928	947	942	972	1,003	nv
Migliaglia	2105005200	220	249	235	230	233	248	260	252	nv
Moleno	2101005012	80	97	110	107	110	112	110	101	nv
Monte Carasso	2101005013	1,651	1,842	2,167	2,193	2,279	2,336	2,377	2,405	nv
Morbio Inferiore	2106005257	3,809	4,106	4,186	4,182	4,228	4,265	4,305	4,284	nv
Morbio Superiore	2106005258	626	720	730	724	708	709	705	700	nv
Morcote	2105005203	625	693	717	714	724	724	726	739	nv
Muzzano	2105005205	796	762	779	789	797	789	794	802	nv
Neggio	2105005206	323	343	339	331	342	349	353	347	nv
Novaggio	2105005207	615	694	737	747	773	794	801	824	nv
Novazzano	2106005260	2,143	2,388	2,409	2,450	2,427	2,412	2,435	2,444	nv
Origgio	2105005208	981	1,119	1,177	1,185	1,228	1,221	1,239	1,260	nv
Osco	2103005075	110	135	125	103	107	109	111	116	nv
Osogna	2107005286	833	979	966	989	999	982	985	983	nv
Paradiso	2105005210	3,277	3,429	3,292	3,380	3,407	3,476	3,529	3,524	nv

Personico	2103005076	403	394	362	376	368	368	361	354	nv
Pianezzo	2101005014	390	417	512	500	514	536	535	542	nv
Pollegio	2103005077	682	753	743	771	807	888	992	1,051	nv
Ponte Capriasca	2105005212	1,213	1,408	1,538	1,551	1,566	1,577	1,610	1,625	nv
Ponte Tresa	2105005213	803	756	799	780	800	804	785	784	nv
Porza	2105005214	1,213	1,313	1,428	1,407	1,408	1,456	1,477	1,471	nv
Prato (Leventina)	2103005078	393	421	438	433	432	415	428	433	nv
Preonzo	2101005015	422	493	508	529	530	524	538	545	nv
Pura	2105005216	999	1,049	1,055	1,086	1,081	1,115	1,176	1,226	nv
Quinto	2103005079	1,241	1,223	1,104	1,103	1,120	1,111	1,099	1,085	nv
Rancate	2106005262	1,284	1,348	1,381	1,367	1,349	1,361	1,370	1,379	nv
Riva San Vitale	2106005263	2,200	2,180	2,305	2,330	2,382	2,393	2,410	2,416	nv
Rivera	2105005217	1,292	1,482	1,441	1,426	1,468	1,466	1,462	1,499	nv
Rovio	2105005219	553	604	707	685	704	701	707	721	nv
Sagno	2106005264	221	238	247	257	260	266	271	275	nv
Sant'Antonino	2101005017	1,785	2,057	2,073	2,127	2,197	2,193	2,211	2,207	nv
Savosa	2105005221	2,014	2,105	2,043	2,037	2,028	2,046	2,065	2,084	nv
Sementina	2101005019	2,458	2,594	2,611	2,735	2,750	2,792	2,810	2,878	nv
Semione	2102005046	302	319	345	338	346	346	335	340	nv
Sigirino	2105005223	270	333	394	426	436	445	467	465	nv
Sobrio	2103005081	83	77	79	77	79	81	76	77	nv
Sonvico	2105005224	1,387	1,482	1,626	1,643	1,667	1,692	1,711	1,734	nv
Sorengo	2105005225	1,514	1,692	1,666	1,662	1,637	1,566	1,592	1,649	nv
Stabio	2106005266	3,177	3,411	3,739	3,803	3,833	3,913	3,936	3,984	nv
Tenero-Contra	2104005131	1,943	2,215	2,271	2,343	2,377	2,355	2,380	2,414	nv
Torricella-Taverne	2105005227	2,399	2,723	2,781	2,818	2,837	2,886	2,934	2,947	nv

Tremona	2106005267	333	363	409	402	410	412	432	443	nv
Vacallo	2106005268	2,942	2,871	2,829	2,811	2,813	2,846	2,889	2,842	nv
Valcolla	2105005229	535	523	559	556	566	565	596	604	nv
Vernate	2105005230	312	334	384	393	408	411	435	442	nv
Vezia	2105005231	1,546	1,615	1,620	1,667	1,688	1,711	1,786	1,766	nv
Vico Morcote	2105005233	258	320	274	258	276	284	293	306	nv
Villa Luganese	2105005235	349	430	480	494	519	523	530	539	nv
Vira (Gambarogno)	2104005134	601	653	640	656	652	665	656	665	nv
Alto Malcantone*	2105002105	970	1,077	1,194	1,190	1,182	1,199	1,214	1,234	nv
Bioggio*	2105005151	1,772	1,943	2,127	2,162	2,226	2,269	2,276	2,315	nv
Cadenazzo*	2101005003	1,604	1,899	1,872	1,926	1,980	1,996	2,047	2,089	nv
Castel San Pietro*	2106005249	2,021	2,168	2,207	2,258	2,299	2,317	1,990	2,028	nv
Capriasca*	2105005226	3,779	4,013	4,256	4,399	4,438	4,513	4,547	4,623	nv
Collina d'Oro*	2105005236	3,568	3,874	3,947	3,970	4,054	4,073	4,169	4,240	nv
Faido*	2103005072	nv	nv							
Lugano*	2105005192	44,170	47,139	47,814	48,220	48,434	48,695	48,865	49,223	nv
Mendrisio*	2106005254	6,554	6,607	6,552	6,581	6,605	6,639	6,698	6,721	nv
Tot corridor inhabitants		236,795	252,860	256,600	259,559	261,951	263,703	265,972	268,120	nv
* = New Communities										
Corridor: Brenner - TYR										
Municipality, NUTS 5 Label	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Innsbruck	70101	110469	109150	112350	113728	114674	114888	115825	116851	nv
Absam	70301	6042	6179	6349	6365	6442	6461	6550	6474	nv
Aldrans	70302	1716	1884	1939	1940	1963	1997	2015	1983	nv
Ampass	70303	1130	1244	1317	1313	1338	1349	1408	1434	nv
Baumkirchen	70305	915	977	1083	1093	1107	1099	1082	1090	nv

Birgitz	70306	1065	1206	1190	1185	1205	1186	1169	1198	nv
Eilbögen	70307	962	1002	1058	1079	1073	1092	1084	1081	nv
Fritzens	70309	1823	1990	2011	2009	2012	2021	2002	2003	nv
Fulpmes	70310	3676	3848	3878	3899	3930	4013	4018	4029	nv
Gnadenwald	70311	545	572	596	621	645	650	644	659	nv
Götzens	70312	3388	3528	3526	3549	3626	3705	3764	3742	nv
Gries/Brenner	70313	1366	1389	1260	1245	1237	1220	1211	1221	nv
Kematen/Tirol	70320	2220	2488	2550	2537	2557	2559	2588	2530	nv
Kolsass	70322	1195	1330	1413	1404	1415	1438	1423	1442	nv
Lans	70325	795	911	911	902	905	892	908	893	nv
Matrei/Brenner	70327	1001	1016	994	999	1004	975	952	925	nv
Mieders	70328	1138	1375	1559	1578	1626	1656	1667	1676	nv
Mils/Hall	70329	3651	3741	3818	3825	3857	3917	3938	3938	nv
Mühlbachl	70330	1421	1388	1369	1382	1397	1392	1373	1372	nv
Mutters	70331	1792	1926	1915	1919	1984	1951	1966	1983	nv
Natters	70332	1707	1813	1868	1854	1849	1847	1864	1869	nv
Navis	70333	1854	1924	1908	1907	1914	1908	1917	1929	nv
Obernberg/Brenner	70336	371	370	361	355	362	353	359	358	nv
Patsch	70338	856	851	870	871	883	879	884	910	nv
Pettneu	70339	799	900	955	960	947	956	951	943	nv
Pfons	70341	1151	1242	1249	1239	1233	1258	1256	1240	nv
Rinn	70345	1142	1240	1429	1409	1419	1440	1458	1484	nv
Rum	70346	8741	8220	8362	8340	8424	8491	8488	8627	nv
Schmirm	70349	867	907	895	887	896	888	893	902	nv
Schönberg/Stubaial	70350	981	1042	1001	1006	1010	999	1004	1021	nv
Sistrans	70353	1361	1616	1771	1766	1793	1817	1839	1889	nv

Hall in Tirol	70354	11763	11758	11385	11563	11587	11585	12072	12368	nv
Steinach/Brenner	70355	3117	3283	3296	3302	3284	3285	3319	3325	nv
Telfes/Stubai	70356	1174	1352	1367	1357	1367	1393	1380	1394	nv
Thaur	70358	3251	3286	3461	3481	3504	3596	3622	3668	nv
Trins	70359	1035	1167	1179	1184	1193	1187	1250	1260	nv
Tulfes	70360	1128	1275	1306	1352	1366	1371	1379	1413	nv
Vals	70362	483	496	508	508	515	508	541	558	nv
Völs	70364	6715	6872	6599	6644	6702	6783	6712	6637	nv
Volders	70365	3546	3903	4155	4136	4133	4236	4313	4268	nv
Wattens	70367	6786	7218	7338	7316	7359	7454	7495	7607	nv
Angath	70502	685	725	829	866	920	950	955	955	nv
Bad Häring	70503	2281	2273	2273	2287	2339	2325	2351	2383	nv
Breitenbach/Inn	70505	2658	2981	3156	3145	3190	3193	3237	3217	nv
Brixlegg	70506	2743	2851	2874	2773	2817	2838	2844	2830	nv
Ebbs	70508	4234	4500	4808	4916	4985	4976	5029	5019	nv
Kirchbichl	70511	4861	5072	5052	5108	5188	5149	5193	5225	nv
Kramsach	70512	3833	3996	4377	4392	4423	4485	4522	4530	nv
Kufstein	70513	13575	14647	15402	15470	15547	15754	15941	16318	nv
Kundl	70514	3521	3568	3687	3720	3752	3857	3921	3923	nv
Langkampfen	70515	3346	3549	3579	3590	3558	3567	3551	3556	nv
Mariastein	70516	189	234	273	280	280	282	290	292	nv
Münster	70517	2296	2523	2698	2721	2770	2820	2850	2879	nv
Radfeld	70520	1543	1680	1892	2095	2151	2132	2144	2188	nv
Rattenberg	70521	535	540	425	437	434	441	440	434	nv
Reith/Alpbachtal	70522	2539	2716	2630	2663	2661	2649	2662	2679	nv
Schwoich	70525	1992	2167	2195	2215	2258	2281	2300	2310	nv

Angerberg		70528	1405	1587	1671	1673	1681	1675	1705	1694	nv
Wörgl		70531	10036	10514	10922	10999	11206	11427	11682	11815	nv
Bruck/Ziller		70904	871	910	919	919	930	934	937	958	nv
Buch/Jenbach		70905	2055	2242	2441	2472	2437	2465	2537	2524	nv
Gallzein		70911	428	482	490	509	532	545	548	550	nv
Jenbach		70917	6197	6440	6571	6636	6736	6733	6867	6896	nv
Pill		70921	884	927	1021	1047	1069	1059	1043	1067	nv
Schlitters		70925	982	1067	1260	1279	1296	1311	1284	1324	nv
Schwaz		70926	11489	11917	12136	12194	12346	12359	12581	12657	nv
Stans		70928	1686	1809	1866	1877	1892	1893	1893	1891	nv
Strass/Zillertal		70930	763	777	794	801	807	822	825	847	nv
Terfens		70933	1724	1829	1955	1986	2017	2052	2023	2034	nv
Vomp		70936	3783	3996	4351	4388	4451	4417	4429	4507	nv
Weer		70937	1291	1428	1344	1416	1464	1484	1497	1500	nv
Wiesing		70939	1587	1701	1740	1786	1852	1849	1871	1887	nv
Tot corridor inhabitants			301,150	309,527	317,980	320,669	323,726	325,419	328,535	331,083	nv
Corridor: Brenner - S-TYR											
Municipality, NUTS 5 Label		SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Andrian / Andriano		20421002	735	776	794	792	828	848	893	914	917
Eppan a.d. Weinstr. / Appiano s.s.d.v.		20421004	10,801	11,652	12,546	12,676	12,853	12,972	13,157	13,325	13,518
Barbian / Barbiano		20421007	1,435	1,466	1,481	1,522	1,541	1,553	1,538	1,552	1,554
Bozen / Bolzano		20421008	100,380	97,078	97,300	92,945	95,400	96,097	97,236	98,657	99,751
Brenner / Brennero		20421010	2,302	2,147	2,101	2,060	2,083	2,062	2,075	2,059	2,047
Brixen / Bressanone		20421011	16,964	17,610	18,539	18,034	18,482	18,694	19,163	19,504	19,786
Branzoll / Bronzolo		20421012	1,943	2,109	2,295	2,300	2,285	2,322	2,377	2,437	2,528
Kaltern a.d. Weinstr. / Caldaro s.s.d.v.		20421015	6,338	6,573	6,790	6,863	6,975	7,075	7,215	7,307	7,411

Freienfeld / Campo di Trens	20421016	2.373	2.438	2.466	2.462	2.526	2.566	2.565	2.583	2.601
Kastelruth / Castelrotto	20421019	5.548	5.818	5.984	5.993	6.029	6.072	6.166	6.247	6.288
Klausen / Chiusa	20421022	4.286	4.440	4.584	4.643	4.692	4.767	4.863	4.948	5.001
Karneid / Cornedo all'Isarco	20421023	2.775	2.841	3.081	3.110	3.126	3.162	3.213	3.249	3.279
Kurtatsch a.d. Weinstr. / Cortaccia s.s.d.v.	20421024	1.790	1.929	2.052	2.084	2.099	2.131	2.145	2.181	2.192
Kurtinig a.d. Weinstr. / Cortina s.s.d.v.	20421025	555	567	583	593	597	613	606	613	619
Neumarkt / Egna	20421029	4.001	4.213	4.325	4.342	4.425	4.515	4.561	4.648	4.711
Völs am Schlern / Fiè allo Sciliar	20421031	2.646	2.847	3.064	3.017	3.075	3.075	3.118	3.151	3.224
Franzenfeste / Fortezza	20421032	899	918	883	896	910	914	917	936	929
Villnöß / Funes	20421033	2.304	2.309	2.399	2.384	2.411	2.443	2.433	2.452	2.466
Lajen / Laion	20421039	1.945	2.059	2.221	2.268	2.320	2.350	2.401	2.445	2.460
Leifers / Laives	20421040	13.699	14.400	15.069	15.264	15.282	15.507	15.664	15.962	16.161
Margreid a.d. Weinstr. / Magrè s.s.d.v.	20421045	999	1.113	1.172	1.192	1.199	1.209	1.188	1.195	1.240
Montan / Montagna	20421053	1.363	1.427	1.478	1.481	1.503	1.557	1.592	1.583	1.540
Natz-Schabs / Naz-Sciaves	20421057	1.981	2.180	2.403	2.441	2.489	2.516	2.603	2.648	2.669
Auer / Ora	20421060	2.630	2.836	2.975	3.036	3.094	3.185	3.334	3.389	3.386
Waidbruck / Ponte Gardena	20421065	203	200	198	182	189	202	198	192	197
Ratschings / Racines	20421070	3.600	3.767	3.982	4.012	4.012	4.053	4.107	4.172	4.237
Ritten / Renon	20421072	5.998	6.527	6.932	7.016	7.035	7.077	7.144	7.147	7.208
Mühlbach / Rio di Pusteria	20421074	2.388	2.502	2.605	2.636	2.662	2.683	2.720	2.729	2.737
Salurn / Salorno	20421076	2.553	2.808	2.932	2.950	2.961	3.040	3.160	3.288	3.346
Jenesien / S.Genesio Atesino	20421079	2.336	2.500	2.655	2.711	2.759	2.787	2.828	2.839	2.862
Terlan / Terlano	20421097	3.057	3.322	3.533	3.605	3.685	3.763	3.784	3.860	3.940
Tramin a.d. Weinstr. / Termeno s.s.d.v.	20421098	2.919	3.075	3.159	3.199	3.200	3.197	3.194	3.198	3.222
Pfatten / Vadena	20421105	706	794	830	843	851	856	853	912	993
Pfiffsch / Val di Vizze	20421107	2.492	2.648	2.662	2.613	2.593	2.627	2.676	2.733	2.759

Vahn / Varna	20421111	3,207	3,349	3,583	3,591	3,606	3,639	3,749	3,866	3,983
Villanders / Villandro	20421114	1,726	1,772	1,812	1,834	1,834	1,836	1,859	1,854	1,867
Sterzing / Vipiteno	20421115	5,515	5,615	5,755	5,809	5,859	5,870	5,931	5,947	5,985
Feldthurns / Velturmo	20421116	2,290	2,367	2,505	2,538	2,588	2,579	2,629	2,668	2,671
Tot corridor inhabitants		229,682	232,992	239,728	235,937	240,058	242,414	245,855	249,390	252,285
Corridor: Mont Blanc - VDA										
Municipality, NUTS 5 Label	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Aosta	10207003	nv	35,292	34,644	34,062	34,193	34,227	34,270	34,610	nv
Arnad	10207004	nv	1,346	1,290	1,273	1,265	1,282	1,294	1,302	nv
Arvier	10207005	nv	792	824	838	855	865	848	869	nv
Avisè	10207006	nv	336	312	307	305	308	312	310	nv
Aymavilles	10207008	nv	1,781	1,839	1,850	1,869	1,902	1,966	1,954	nv
Bard	10207009	nv	148	146	139	135	130	135	132	nv
Brissogne	10207011	nv	817	881	904	941	952	962	967	nv
Challand-Saint-Anselme	10207013	nv	700	718	686	688	692	695	710	nv
Challand-Saint-Victor	10207014	nv	562	573	586	589	588	589	591	nv
Chambave	10207015	nv	883	942	945	951	852	937	963	nv
Champdepraz	10207017	nv	647	635	640	649	656	674	675	nv
Charvensod	10207019	nv	2,145	2,281	2,266	2,268	2,304	2,333	2,350	nv
Châtillon	10207020	nv	4,713	4,746	4,712	4,799	4,814	4,846	4,829	nv
Courmayeur	10207022	nv	2,991	2,956	2,790	2,976	2,958	2,979	2,971	nv
Donnas	10207023	nv	2,566	2,647	2,645	2,665	2,631	2,631	2,692	nv
Emarèse	10207025	nv	209	205	202	215	212	212	219	nv
Fénis	10207027	nv	1,604	1,612	1,618	1,614	1,625	1,625	1,655	nv
Gressan	10207031	nv	2,544	2,720	2,731	2,838	2,928	2,928	3,067	nv
Hone	10207034	nv	1,124	1,147	1,146	1,166	1,169	1,169	1,163	nv

Introd	10207035	nv	542	543	550	543	550	543	568	568	585	nv
Issogne	10207037	nv	1,386	1,360	1,346	1,360	1,346	1,370	1,370	1,370	1,364	nv
Jovençon	10207038	nv	558	611	595	611	595	664	664	664	736	nv
La Salle	10207040	nv	1,820	1,910	1,880	1,910	1,880	1,961	1,961	1,961	2,002	nv
Montjovet	10207043	nv	1,500	1,731	1,742	1,731	1,742	1,803	1,803	1,803	1,803	nv
Morgex	10207044	nv	1,851	1,907	1,907	1,907	1,907	1,955	1,955	1,955	1,971	nv
Nus	10207045	nv	2,478	2,629	2,577	2,629	2,577	2,687	2,687	2,687	2,721	nv
Pollein	10207049	nv	1,236	1,402	1,397	1,402	1,397	1,442	1,442	1,442	1,416	nv
Pontey	10207051	nv	624	700	708	700	708	748	748	748	752	nv
Pont-Saint-Martin	10207052	nv	3,904	3,884	3,833	3,884	3,833	3,942	3,942	3,942	3,971	nv
Pré-Saint-Didier	10207053	nv	993	973	964	973	964	991	991	991	960	nv
Quart	10207054	nv	2,838	3,079	3,103	3,079	3,103	3,234	3,234	3,234	3,318	nv
Saint-Christophe	10207058	nv	2,755	2,949	2,982	2,949	2,982	3,001	3,033	3,033	3,158	nv
Saint-Denis	10207059	nv	349	334	342	334	342	349	356	356	372	nv
Saint-Marcel	10207060	nv	1,066	1,100	1,129	1,100	1,129	1,178	1,194	1,194	1,216	nv
Saint-Nicolas	10207061	nv	282	315	313	315	313	323	318	318	326	nv
Saint-Pierre	10207063	nv	2,429	2,560	2,615	2,560	2,615	2,696	2,716	2,716	2,795	nv
Saint-Vincent	10207065	nv	4,907	4,792	4,687	4,792	4,687	4,774	4,864	4,864	4,858	nv
Sarre	10207066	nv	3,910	4,097	4,179	4,097	4,179	4,248	4,387	4,387	4,509	nv
Verrayes	10207072	nv	1,213	1,237	1,266	1,237	1,266	1,279	1,294	1,294	1,327	nv
Verrès	10207073	nv	2,652	2,620	2,624	2,620	2,624	2,585	2,585	2,585	2,644	nv
Villeneuve	10207074	nv	1,034	1,105	1,082	1,105	1,082	1,114	1,118	1,118	1,172	nv
Tot corridor inhabitants		nv	101,527	102,956	102,161	102,956	102,896	104,325	104,635	104,635	106,005	nv
Corridor: Mont Blanc - RA												
Municipality, NUTS 5 Label	SABE Code	1990	1995	1999 (2000)	2001	2002	2003	2004	2005	2006		

Contamine-sur-Arve	Mont-Blanc	1,127	x	1,345	x	x	x	x	x	x	x	x
Cordon	Mont-Blanc	772	x	878	x	x	x	x	x	x	x	x
Cornier	Mont-Blanc	766	x	936	x	x	x	x	x	x	x	x
Cranves-Sales	Mont-Blanc	3,934	x	4,361	x	x	x	x	x	x	x	x
Demi-Quartier	Mont-Blanc	877	x	1,031	x	x	x	x	x	x	x	x
Desingy	Mont-Blanc	510	x	603	x	x	x	x	x	x	x	x
Dingy-en-Vuache	Mont-Blanc	336	x	395	x	x	x	x	x	x	x	x
Domancy	Mont-Blanc	1,524	x	1,710	x	x	x	x	x	x	x	x
Etaux	Mont-Blanc	877	x	1,089	x	x	x	x	x	x	x	x
Faucigny	Mont-Blanc	329	x	411	x	x	x	x	x	x	x	x
Feigères	Mont-Blanc	962	x	1,231	x	x	x	x	x	x	x	x
Fillinges	Mont-Blanc	2,008	x	2,442	x	x	x	x	x	x	x	x
Franc lens	Mont-Blanc	305	x	335	x	x	x	x	x	x	x	x
Frangy	Mont-Blanc	1,520	x	1,596	x	x	x	x	x	x	x	x
Gaillard	Mont-Blanc	9,594	x	9,949	x	x	x	x	x	x	x	x
Les Houches	Mont-Blanc	1,944	x	2,708	x	x	x	x	x	x	x	x
Juvigny	Mont-Blanc	544	x	540	x	x	x	x	x	x	x	x
Lucinges	Mont-Blanc	893	x	1,212	x	x	x	x	x	x	x	x
Magland	Mont-Blanc	2,862	x	2,800	x	x	x	x	x	x	x	x
Marcellaz	Mont-Blanc	518	x	707	x	x	x	x	x	x	x	x
Marignier	Mont-Blanc	4,319	x	5,327	x	x	x	x	x	x	x	x
Marnaz	Mont-Blanc	4,020	x	4,450	x	x	x	x	x	x	x	x
Megève	Mont-Blanc	4,751	x	4,518	x	x	x	x	x	x	x	x
Mieussy	Mont-Blanc	1,348	x	1,739	x	x	x	x	x	x	x	x
Minzier	Mont-Blanc	372	x	498	x	x	x	x	x	x	x	x
Monnetier-Mornex	Mont-Blanc	1,795	x	1,792	x	x	x	x	x	x	x	x

Servoz		Mont-Blanc	620	x	819	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Thyez		Mont-Blanc	4,123	x	4,869	x	x	x	x	x	x	x	x	x	x	x	x	x	x
La Tour		Mont-Blanc	1,001	x	1,120	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Usinens		Mont-Blanc	236	x	255	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Valleiry		Mont-Blanc	1,749	x	2,195	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vanzy		Mont-Blanc	222	x	242	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vers		Mont-Blanc	444	x	528	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vétraz-Monthoux		Mont-Blanc	4,313	x	5,300	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ville-en-Sallaz		Mont-Blanc	504	x	676	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ville-la-Grand		Mont-Blanc	6,474	x	6,983	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Viry		Mont-Blanc	2,550	x	3,030	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Viuz-en-Sallaz		Mont-Blanc	2,947	x	3,374	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vougy		Mont-Blanc	867	x	963	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vulbens		Mont-Blanc	750	x	786	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Tot corridor inhabitants			234,077	x	259,321	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Corridor: Fréjus - RA																			
Municipality, NUTS 5 Label		SABE Code	1990	1995	1999 (2000)	2001	2002	2003	2004	2005	2006								
Barraux		Fréjus	1,214	x	1,475	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Chapareilian		Fréjus	1,907	x	2,148	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pontcharra		Fréjus	5,824	x	6,418	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Le Pont-de-Beauvoisin		Fréjus	2,378	x	2,500	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aiguebelette-le-Lac		Fréjus	170	x	189	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aiguebelle		Fréjus	845	x	896	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Aiton		Fréjus	562	x	1,161	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Albiez-le-Jeune		Fréjus	61	x	57	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Apremont	Fréjus	781	x	891	x	x	x	x	x	x	x	x
Arbin	Fréjus	814	x	711	x	x	x	x	x	x	x	x
Argentine	Fréjus	691	x	691	x	x	x	x	x	x	x	x
Attignat-Oncin	Fréjus	398	x	418	x	x	x	x	x	x	x	x
Aussois	Fréjus	529	x	629	x	x	x	x	x	x	x	x
Avressieux	Fréjus	349	x	384	x	x	x	x	x	x	x	x
Avrieux	Fréjus	310	x	341	x	x	x	x	x	x	x	x
Ayn	Fréjus	287	x	279	x	x	x	x	x	x	x	x
Barberaz	Fréjus	4,194	x	4,660	x	x	x	x	x	x	x	x
Barby	Fréjus	3,077	x	2,958	x	x	x	x	x	x	x	x
Bassens	Fréjus	3,577	x	3,507	x	x	x	x	x	x	x	x
La Bauche	Fréjus	171	x	221	x	x	x	x	x	x	x	x
Belmont-Tramonet	Fréjus	338	x	405	x	x	x	x	x	x	x	x
Betton-Bettonet	Fréjus	157	x	203	x	x	x	x	x	x	x	x
Bonvillard	Fréjus	236	x	247	x	x	x	x	x	x	x	x
Bonvillaret	Fréjus	68	x	69	x	x	x	x	x	x	x	x
Bourdeau	Fréjus	434	x	435	x	x	x	x	x	x	x	x
Le Bourget-du-Lac	Fréjus	2,886	x	3,948	x	x	x	x	x	x	x	x
Bourget-en-Huile	Fréjus	80	x	125	x	x	x	x	x	x	x	x
Bourgneuf	Fréjus	306	x	400	x	x	x	x	x	x	x	x
La Bridoire	Fréjus	1,115	x	1,097	x	x	x	x	x	x	x	x
Challes-les-Eaux	Fréjus	2,803	x	3,929	x	x	x	x	x	x	x	x
Chambéry	Fréjus	54,045	x	55,762	x	x	x	x	x	x	x	x
La Chambre	Fréjus	981	x	1,109	x	x	x	x	x	x	x	x
Chamousset	Fréjus	373	x	383	x	x	x	x	x	x	x	x
Chamoux-sur-Gelon	Fréjus	638	x	679	x	x	x	x	x	x	x	x

Champagneux	Fréjus	330	x	379	x	x	x	x	x	x	x	x
Champ-Laurent	Fréjus	26	x	21	x	x	x	x	x	x	x	x
La Chapelle	Fréjus	240	x	278	x	x	x	x	x	x	x	x
La Chapelle-Blanche	Fréjus	394	x	443	x	x	x	x	x	x	x	x
Châteauneuf	Fréjus	540	x	580	x	x	x	x	x	x	x	x
Le Châtel	Fréjus	101	x	134	x	x	x	x	x	x	x	x
La Chavanne	Fréjus	329	x	394	x	x	x	x	x	x	x	x
Les Chavannes-en-Maurienne	Fréjus	219	x	206	x	x	x	x	x	x	x	x
Chignin	Fréjus	735	x	757	x	x	x	x	x	x	x	x
Cognin	Fréjus	5,780	x	5,879	x	x	x	x	x	x	x	x
Coise-Saint-Jean-Pied-Gauthier	Fréjus	832	x	944	x	x	x	x	x	x	x	x
La Croix-de-la-Rochette	Fréjus	186	x	182	x	x	x	x	x	x	x	x
Cruet	Fréjus	824	x	963	x	x	x	x	x	x	x	x
Curienne	Fréjus	524	x	616	x	x	x	x	x	x	x	x
Domessin	Fréjus	1,270	x	1,370	x	x	x	x	x	x	x	x
Drumettaz-Clarafond	Fréjus	1,713	x	1,969	x	x	x	x	x	x	x	x
Dullin	Fréjus	326	x	335	x	x	x	x	x	x	x	x
Fourmeaux	Fréjus	1,078	x	882	x	x	x	x	x	x	x	x
Francin	Fréjus	566	x	686	x	x	x	x	x	x	x	x
Freney	Fréjus	124	x	85	x	x	x	x	x	x	x	x
Fréterive	Fréjus	426	x	433	x	x	x	x	x	x	x	x
Gerbaix	Fréjus	288	x	322	x	x	x	x	x	x	x	x
Gresin	Fréjus	235	x	267	x	x	x	x	x	x	x	x
Grésy-sur-Isère	Fréjus	891	x	1,044	x	x	x	x	x	x	x	x
Hauteville	Fréjus	189	x	233	x	x	x	x	x	x	x	x
Hermillon	Fréjus	505	x	519	x	x	x	x	x	x	x	x

Valloire	Fréjus	1,016	x	1,252	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Valmeinier	Fréjus	257	x	375	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Verel-de-Montbel	Fréjus	177	x	228	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Verel-Pragondran	Fréjus	347	x	405	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Le Verneil	Fréjus	70	x	59	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Verthemex	Fréjus	127	x	141	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villard-d'Héry	Fréjus	160	x	186	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villard-Léger	Fréjus	317	x	383	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villard-Sallet	Fréjus	218	x	225	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villargondran	Fréjus	825	x	942	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villarodin-Bourget	Fréjus	514	x	501	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Villaroux	Fréjus	132	x	195	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vimines	Fréjus	1,357	x	1,497	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Viviers-du-Lac	Fréjus	1,144	x	1,491	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Voglans	Fréjus	1,013	x	1,446	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Tot corridor inhabitants		205,392	x	222,339	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Corridor: Fréjus- PIEDMONT																			
Municipality, NUTS 5 Label	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006									
Almese		nv	5,389	5,571	5,658	5,714	5,857	5,932	5,932	6,104									
Avigliana		nv	10,455	11,116	11,075	11,187	11,584	11,791	11,908	11,984									
Bardonecchia		nv	3,036	3,035	3,043	3,037	2,987	3,015	3,056	3,063									
Borgone Susa		nv	2,224	2,270	2,226	2,244	2,276	2,310	2,328	2,337									
Bruzolo		nv	1,336	1,344	1,329	1,336	1,349	1,397	1,412	1,463									
Bussoleno		nv	6,717	6,618	6,450	6,457	6,519	6,560	6,567	6,604									
Buttigliera Alta		nv	6,702	6,601	6,556	6,500	6,517	6,575	6,579	6,525									
Caprie		nv	1,770	1,829	1,891	1,916	1,923	1,958	1,988	2,022									

Venaus		nv	989	969	978	976	979	968	966	962
Villar Dora		nv	2,252	2,636	2,722	2,778	2,811	2,867	2,926	2,952
Villar Focchiardo		nv	2,047	2,061	2,032	2,051	2,042	2,041	2,040	2,031
Tot corridor inhabitants		nv	86,514	88,540	88,316	88,994	90,318	91,358	91,994	92,924

Table 18: IND. 19 - inhabitants forecast 2010 and 2020 in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard					
Region (NUTS 3)	NUTS 3 Code	2005	2010	2020	Growth 2005-2020
Luzern	CH061	356,400	366,600	379,500	6.5%
Uri	CH062	35,100	35,400	35,200	0.3%
Schwyz	CH063	137,500	142,700	152,200	10.7%
Obwalden	CH064	33,300	32,900	33,500	0.6%
Nidwalden	CH065	39,800	42,200	45,100	13.3%
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Zentralschweiz	CH06	708,600	733,400	769,300	8.6%
Corridor: Gotthard (side: Ticino)					
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Ticino	CH07	322,276	331,277	344,657	6.9%
Corridor: Brenner TYR					
Region (NUTS 3)	NUTS 3 Code	2005	2010	2020	Growth 2005-2020
Innsbruck	AT332	278,186	286,066	298,527	7.3%
Tiroler Unterland	AT335	236,609	246,367	258,110	9.1%
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Tirol	AT33	697,435	718,875	746,442	7.0%
Corridor: Brenner S-TYR					
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Provincia Autonoma Bolzano-Bozen	ITD1	482,650	470,846	461,028	-4.5%
Corridor: Mont Blanc VdA					
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Valle d'Aosta	ITC2	123978	124,619	125,183	1.0%
Corridor: Mont Blanc/Fréjus FRANCE					
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Rhône-Alpes		6005000	6,173,149	6,579,147	9.6%
Corridor: Fréjus PIEDMONT					
Region (NUTS 2)	NUTS 2 Code	2005	2010	2020	Growth 2005-2020
Piedmont		4341733	4,275,649	4,174,264	-3.9%

Below are the maps georeferencing the municipal populations along the four MONITRAF corridors; note how the most densely populated municipalities are located along the bottom of the valley, along side the motorways.

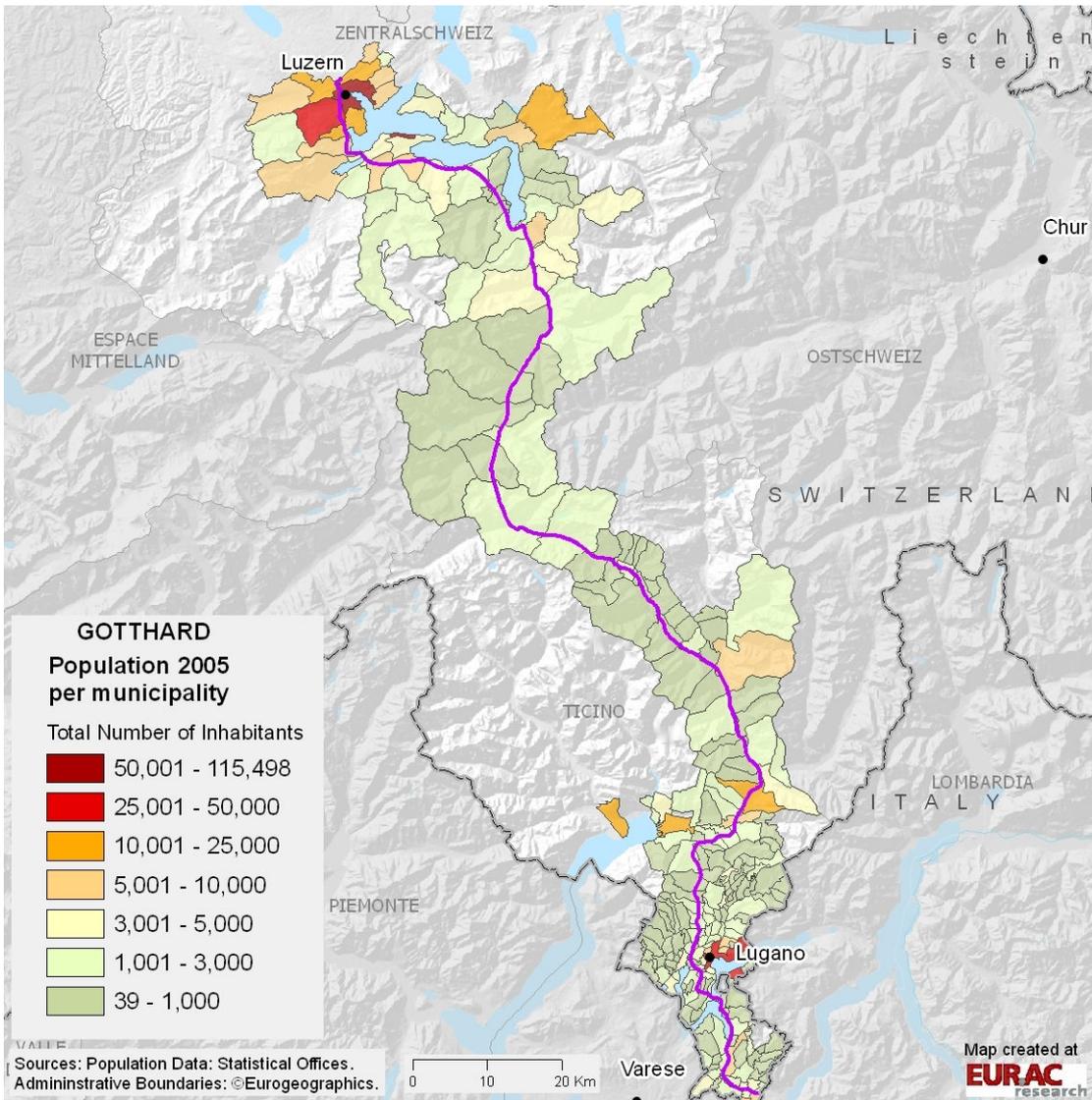


Figure 28: IND. 19 - inhabitants per municipality in Gotthard corridor in 2005

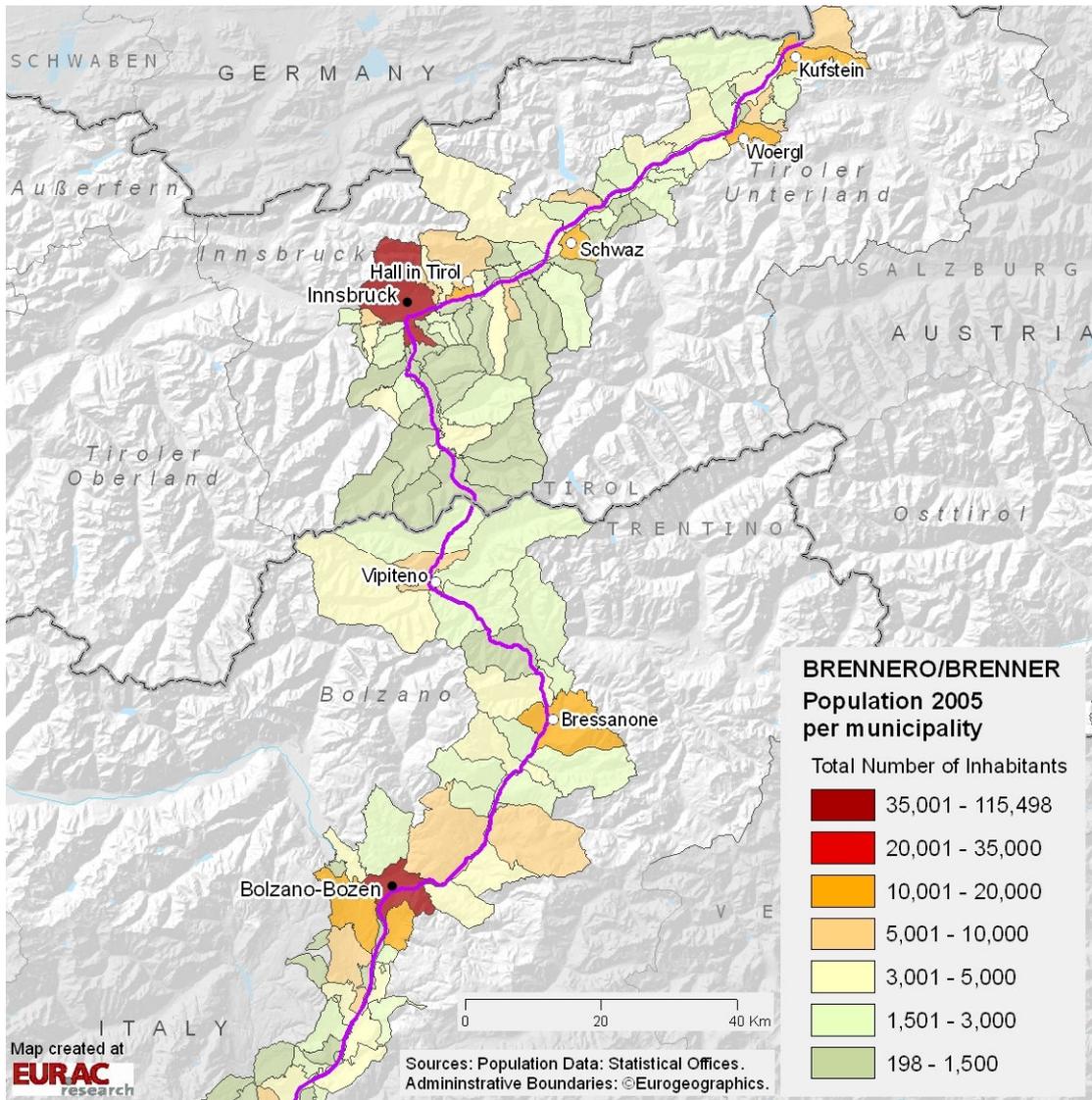


Figure 29: IND. 19 - inhabitants per municipality in Brenner corridor in 2005

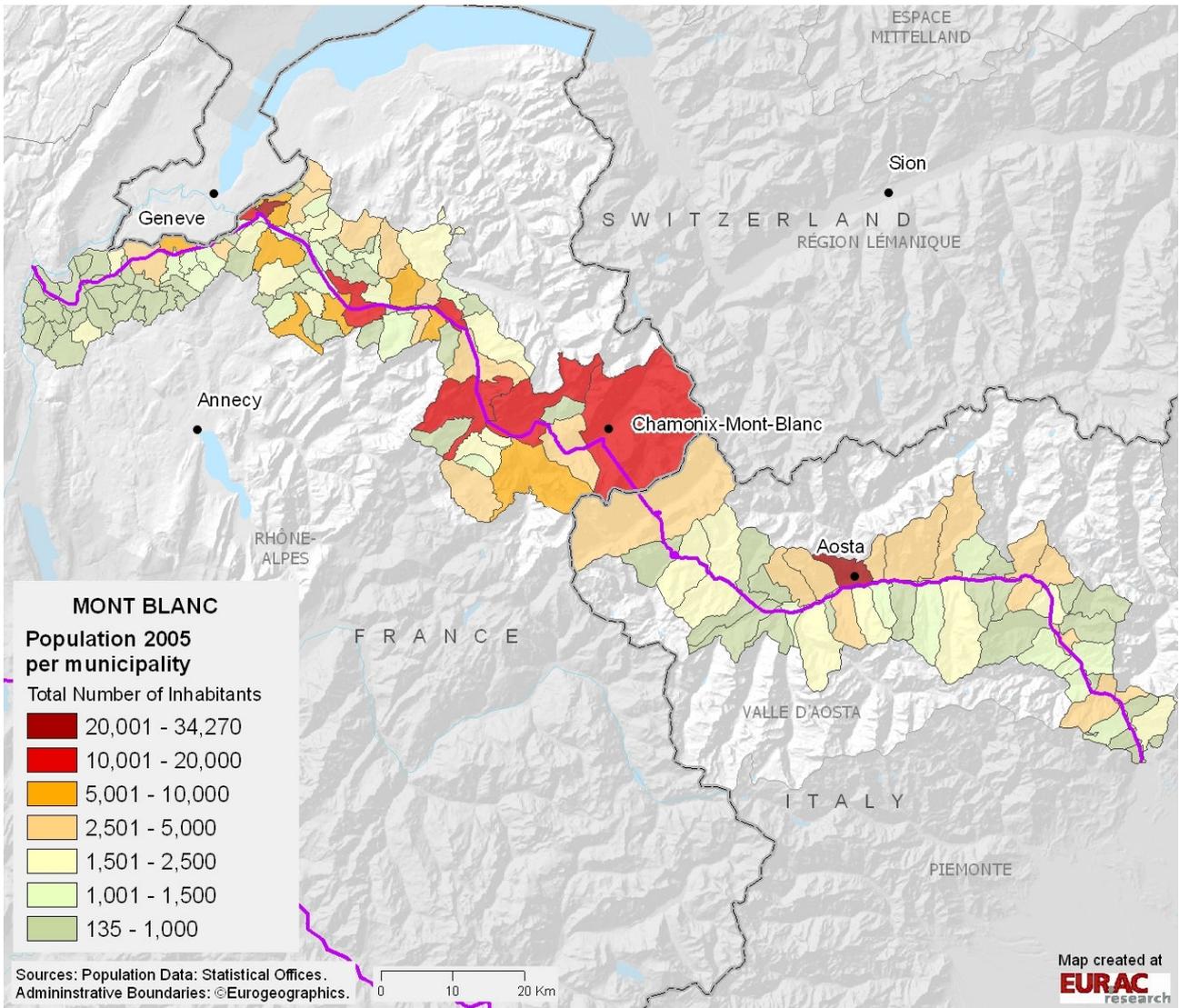


Figure 30: IND. 19 - inhabitants per municipality in Mont-Blanc corridor in 2005

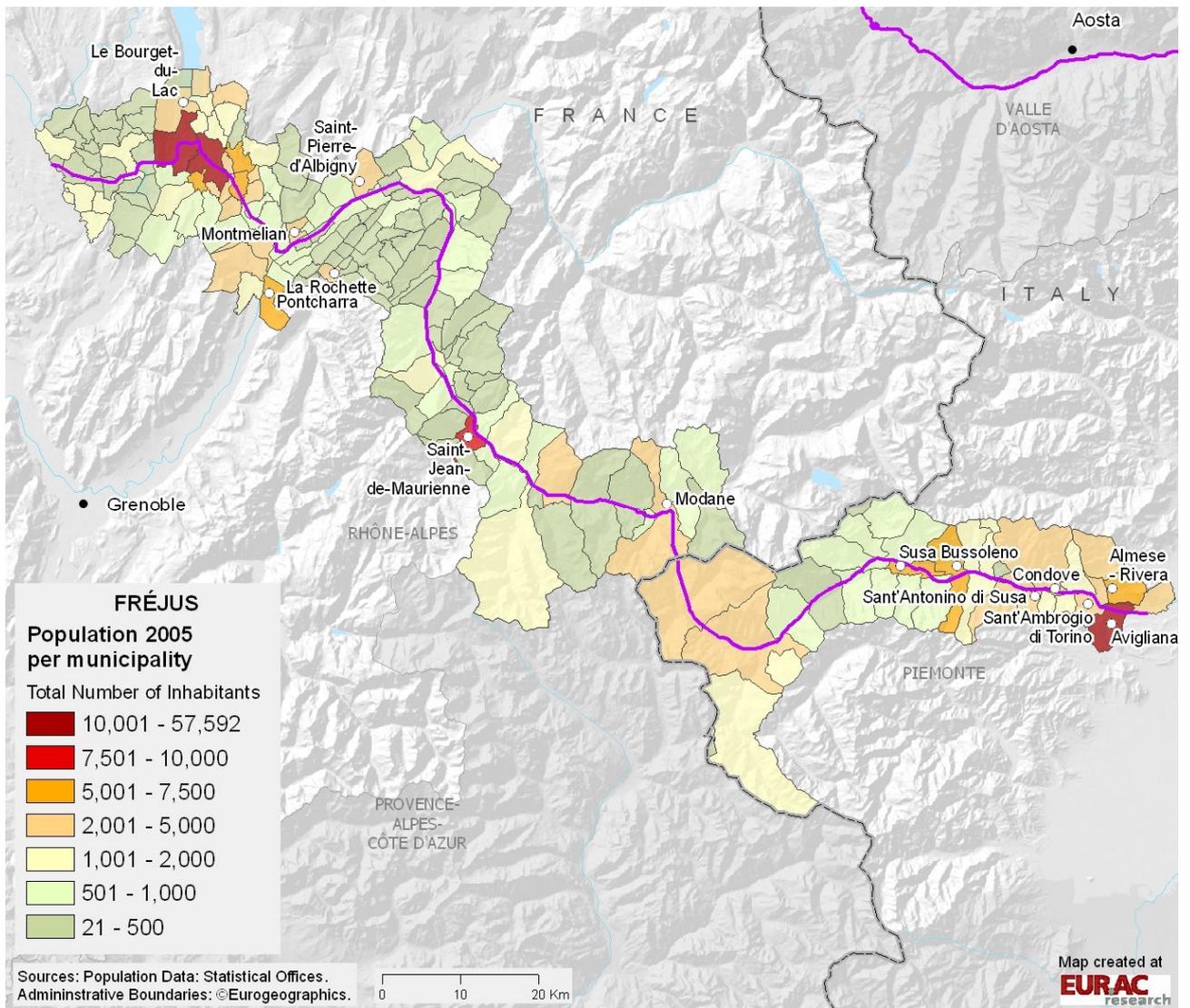


Figure 31: IND. 19 - inhabitants per municipality in Fréjus corridor in 2005

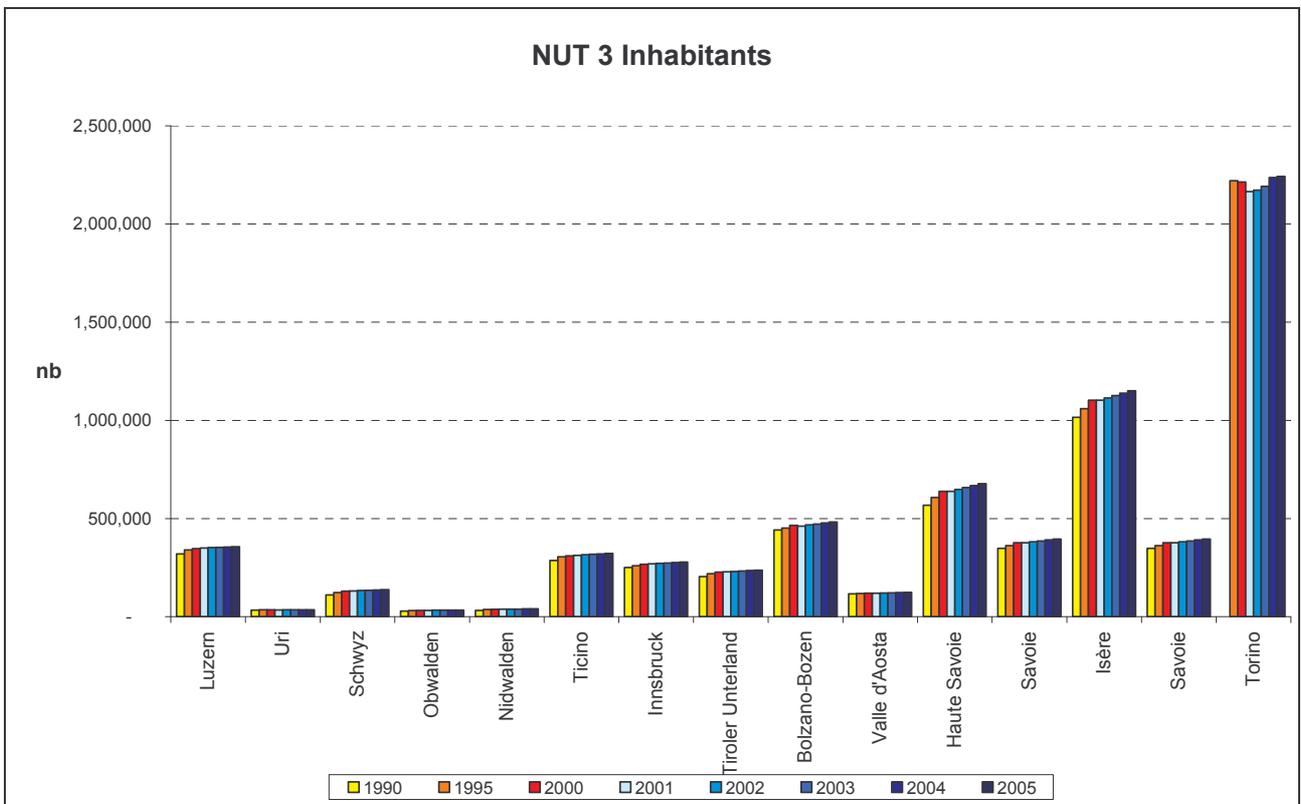
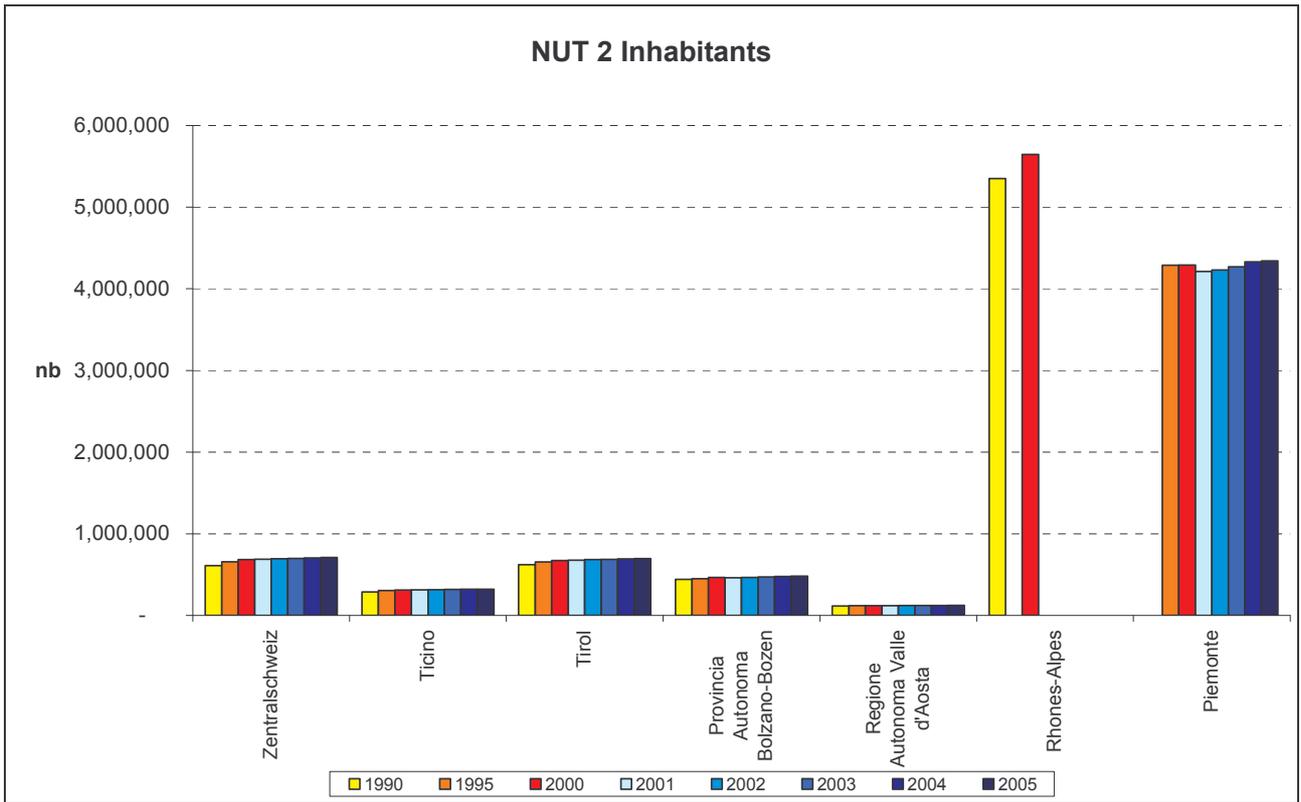


Figure 32: IND. 19 - inhabitants per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Figure 32 highlights the disparity in terms of number of inhabitants between the two large western Alpine regions (Piedmont and Rhône-Alpes), which, for the most part, have a non alpine territory, and the Alpine regions proper, which clearly have less inhabitants. Among the latter, Tyrol and Central Switzerland have a larger population, whilst the Aosta Valley has the lowest number of inhabitants.

Considering the growth rate of the population at NUT3 level, the most significant growths are recorded by the French departments and by the province of Turin (in the latter case only since 2001)

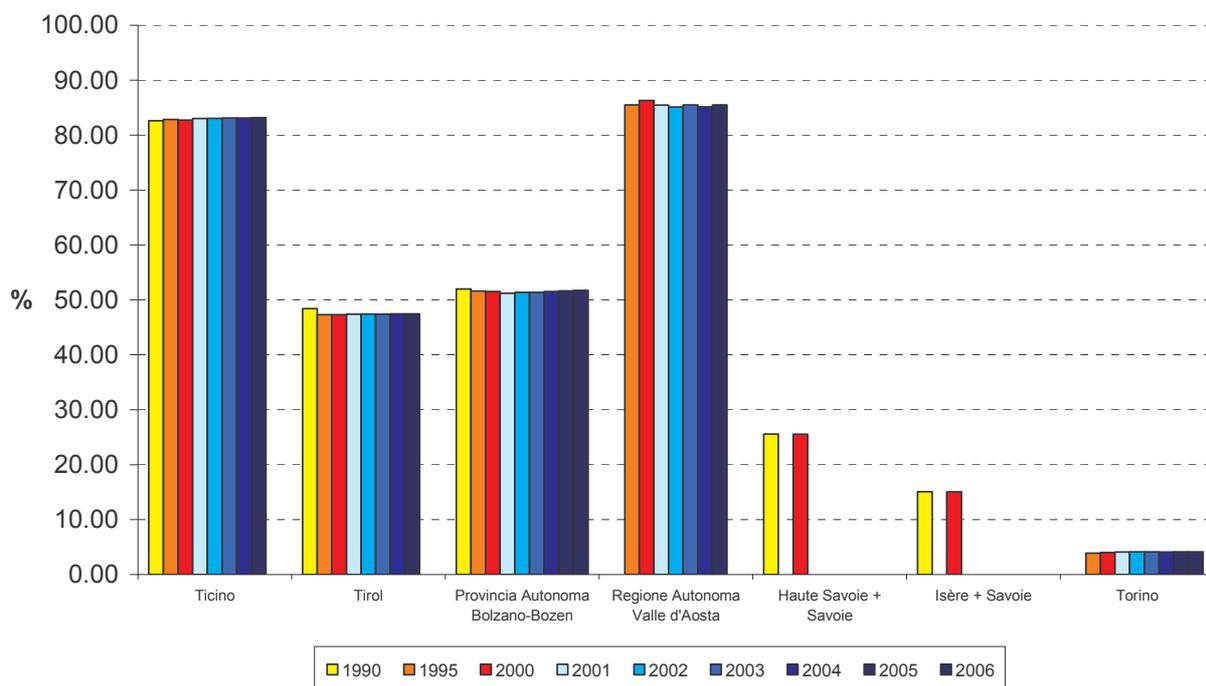


Figure 33: IND. 19 - inhabitants per year in the municipalities along the MONITRAF corridors per regional population

If one analyses in more detail the trend of the population in the Monitraf municipalities crossed by transalpine transit communications infrastructures as shown in fig. 33, it is interesting to notice that in the Ticino area (data on Central Switzerland are not available) and on the Aosta Valley side of Mont Blanc, the population involved represents over 80% of that in the canton/region. The Brenner corridor concerns 50% of the population of the regions/provinces of Tyrol and South Tyrol. Only a small percentage of the population of the great western regions is involved in the passage of transalpine traffic: 25% in the French stretch of the Mont Blanc corridor, 15% in the Fréjus and only 4% in Piedmont. In all cases, growth rates are very low.

Inhabitants NUT2 forecast 2005-2020

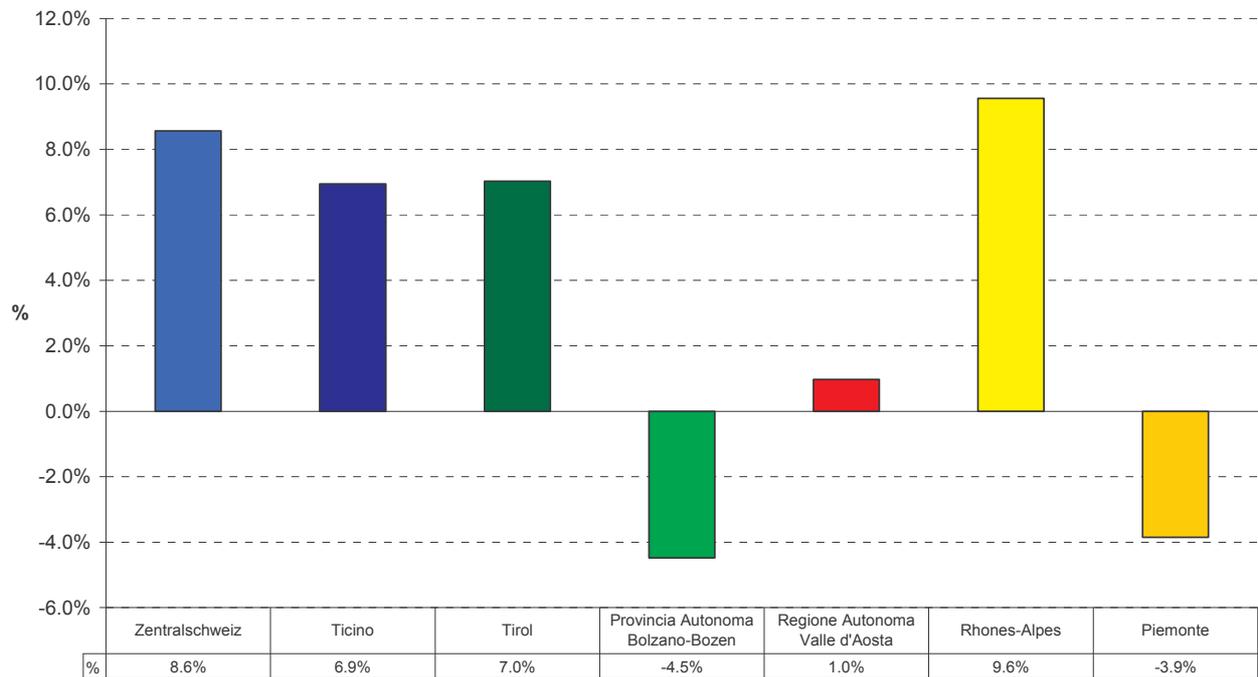


Figure 34: IND. 19 - inhabitants forecast trend from 2005 to 2020 in the MONITRAF regions (NUTS 2)

The forecasts on population trends up till 2020 shown in Fig. 34 for level NUTS2, present a negative trend of approximately 4% for Piedmont and South Tyrol. For Rhône-Alpes there is an indication of strong growth (+9.6%); just slightly lower is the growth in the Swiss cantons and in Tyrol (approx. 7÷8%). A stable situation is foreseen for the Aosta Valley.

Indicator:				Unemployment rate	
Number:	20	Name:	Unemployment rate		
WP7 Codification:	810	Main category:	Society	Unit:	%
Level:	NUTS 3, NUTS 2 and state, if possible LAU 2 (NUTS 5)				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	<p>Proportion between unemployed people and the labour force on municipality level (NUTS 5), regional level (NUTS 3) and for comparison NUTS 2 level and national level (state).</p> <p><u>Unemployed people</u>: Total number of persons from 15 to 74 years, without work; available to start work within the next two weeks; have actively sought employment at some time during the previous four weeks (according to international definition ILO/OECD/EUROSTAT).</p> <p><u>Labour force</u>: Total number of persons employed (independent or dependent) and unemployed aged 15 and older.</p>				
Calculation:	(Number of unemployed / Labour force) * 100				
Data:					
Name:	Unemployed people	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Unemployed people: Total number of persons from 15 to 74 years, without work; available to start work within the next two weeks; have actively sought employment at some time during the previous four weeks (according to international definition ILO/OECD/EUROSTAT). Collected for NUTS 3 level, NUTS 2 level and state and if possible for the selected municipalities along the corridor (NUTS 5).				
Data source (citation basis):	<p>CS: Swiss statistics. Job statistics. http://www.bfs.admin.ch/bfs/portal/en/index/themen/03/02.html</p> <p>Swiss labour market statistics. http://www.amstat.ch/infospc/public/index.jsp.</p> <p>TIC: Seco - Disoccupati 01.1995-01.2007, Data Warehouse del mercato del lavoro ticinese Unità delle statistiche economiche, Ufficio cantonale di statistica, Stabile Torretta, CH-6500 BELLINZONA, tel. +41 91 814 6436;</p> <p>TYR: Amt der Tiroler Landesregierung, Abteilung Raumordnung Statistik;</p> <p>S_TYR: EUROSTAT (only unemployment rates) in %;</p> <p>VDA: ISTAT data;</p> <p>RA: INSEE</p>				
Other Comments:	If it is not possible to collect data on NUTS 5 level, alternatively the percentage of unemployed people (%) could be directly collected. For NUTS 3, NUTS 2 and state level it is advisable to use the harmonised data from EUROSTAT.				
Name:	Employed people	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Employed people: Total number of persons employed (independent or dependent) aged 15 and older at place of residence. Collected for NUTS 3 level, NUTS 2 level and state and if possible for the selected municipalities along the corridor (NUTS 5).				

Data source (citation basis):	<p>CS: Swiss statistics. Job statistics. http://www.bfs.admin.ch/bfs/portal/en/index/themen/03/02.html</p> <p>Swiss labour market statistics. http://www.amstat.ch/infospc/public/index.jsp.;</p> <p>TIC: UST - Censimento federale della popolazione 2000, Data Warehouse del mercato del lavoro ticinese Unità delle statistiche economiche, Ufficio cantonale di statistica, Stabile Torretta, CH-6500 BELLINZONA, tel. +41 91 814 6436;</p> <p>S_TYR: EUROSTAT (only unemployment rates);</p> <p>VDA: ISTAT data;</p> <p>RA: INSEE</p>
Other Comments:	For NUTS 3, NUTS 2 and state level it is advisable to use the harmonised data from EUROSTAT

Data Quality

The sets of data do not have the same kind of time distribution in the countries considered: this depends on the different time frequency of data collection which in some cases varies between NUT3 and NUT2, and on the years chosen for the censuses. Data on the Italian side of the Fréjus are not available. Data at NUT5 level are available only for Ticino and Rhône-Alpes.

IND.20	INDICATORS-VALUES	Unemployed - NUT2	Unemployed - NUT3	Employed - NUT2	Employed - NUT3	Unemployed - NUT5	Employed - NUT5
CS	data detail	1995, 2000-2006	1995, 2000-2006	1990, 2000	1990, 2000	x	x
	detail scale *	1	5	1	5	0	0
	data completeness	89%	89%	22%	22%	0%	0%
TIC	data detail	1995, 2000-2006	1995, 2000-2006	1990, 2000	1990, 2000	1995, 2000-2006	2000
	detail scale *	1	1	1	1	168	168
	data completeness	89%	89%	22%	22%	89%	11%
TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1991, 2001	1991, 2001	x	x
	detail scale *	1	5	1	5	0	0
	data completeness	100%	100%	22%	22%	0%	0%
S_TYR	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	x	x
	detail scale *	1	1	1	1	0	0
	data completeness	89%	89%	89%	89%	0%	0%
VDA	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	x	x
	detail scale *	1	1	1	1	0	0
	data completeness	89%	89%	89%	89%	0%	0%

	1999	1990, 1999	1999	1990, 1999	1990, 1999	1990, 1999	1990, 1999	1990, 1999
RA								
data detail								
detail scale *	1	4	1	4	4	1131	1131	1131
data completeness	11%	22%	11%	22%	22%	22%	22%	22%
data detail	x	x	x	x	x	x	x	x
detail scale *	0	0	0	0	0	0	0	0
data completeness	0%	0%	0%	0%	0%	0%	0%	0%

* = NUTS number

Table 19: IND. 20 - employed people per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard – CS										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	169.087	x	185.274	x	x	x	x	x	x
Uri	CH062	16.180	x	17.323	x	x	x	x	x	x
Schwyz	CH063	58.404	x	70.168	x	x	x	x	x	x
Obwalden	CH064	14.227	x	17.272	x	x	x	x	x	x
Nidwalden	CH065	17.244	x	20.681	x	x	x	x	x	x
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	322.517	x	367.710	x	x	x	x	x	x
Corridor: Gotthard – TIC										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	136.237	x	140.861	x	x	x	x	x	x
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	136.237	x	140.861	x	x	x	x	x	x
Corridor: Brenner - TYR										
Region, NUTS 3	NUTS 3 code	1991	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	12.235	na	na	13.866	na	na	na	na	na
Innsbruck	AT332	124.897	na	na	135.447	na	na	na	na	na
Osttirol	AT333	17.578	na	na	18.799	na	na	na	na	na
Tiroler Oberland	AT334	29.735	na	na	34.988	na	na	na	na	na
Tiroler Unterland	AT335	87.558	na	na	99.126	na	na	na	na	na
NUTS 2 label	NUTS 2 code	1991	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	272.003	na	na	302.226	na	na	na	na	na
Corridor: Brenner S-TYR										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	na	201.700	215.000	216.300	220.400	223.400	221.875	223.300	227.675
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	na	201.700	215.000	216300	220.400	223400	221875	223.300	227.675

Corridor: Mont Blanc - VDA										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	51.000	50.686	53.737	54.586	54.921	53.100	56.000	55.000	nv
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	51.000	50.686	53.737	54.586	54.921	53.100	56.000	55.000	nv
Corridor: Mont Blanc – RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999 (2000)	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		262.845	x	284.878	x	x	x	x	x	x
73 - Savoie		147.948	x	156.724	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	2.308.436	x	x	x	x	x	x
Corridor: Fréjus – RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999 (2000)	2001	2002	2003	2004	2005	2006
38 - Isère		415.177	x	446.109	x	x	x	x	x	x
73 - Savoie		147.948	x	156.724	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	2.308.436	x	x	x	x	x	x
Corridor: Fréjus – PI										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
		x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
		x	x	x	x	x	x	x	x	x

Table 20: IND. 20 - unemployed people per year in the MONITRAF regions (NUT2 and NUT3)

Corridor: Gotthard - CS										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	x	5.427	2.464	2.302	3.780	5.882	5.955	5.784	5.099
Uri	CH062	x	266	93	71	124	188	209	231	192
Schwyz	CH063	x	1.192	508	435	878	1490	1630	1649	1412
Obwalden	CH064	x	250	68	93	168	275	295	283	261
Nidwalden	CH065	x	366	93	124	230	399	408	411	345
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	x	8.858	3.880	3.824	6.717	10.328	10.489	10.185	8.766
Corridor: Gotthard – TIC										
Region, NUTS 3*	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	11.317	4.878	5.073	6.670	7.520	7.899	8.484	7.767
NUTS 2 label*	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	11.317	4.878	5.073	6.670	7.520	7.899	8.484	7.767
Corridor: Brenner - TYR										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	706	915	618	626	687	691	731	747	700
Innsbruck	AT332	3.789	4.553	4.044	4.435	4.826	5.182	5.277	5.574	5.372
Osttirol	AT333	1.429	1.801	1.700	1.764	1.800	1.839	1.815	1.938	1.907
Tiroler Oberland	AT334	2.504	3.219	2.938	3.115	3.206	3.149	3.406	3.631	3.463
Tiroler Unterland	AT335	3.417	5.042	4.255	4.472	4.737	4.883	5.139	5.536	5.254
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	11.845	15.530	13.555	14.412	15.256	15.744	16.368	17.426	16.696
Corridor: Brenner S-TYR										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	n.a.	5.800	4.700	5.200	5.300	5.900	6.000	6.300	6.050
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	n.a.	5.800	4.700	5.200	5.300	5.900	6.000	6.300	6.050
Corridor: Mont Blanc - VDA										

Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	2.000	3.578	2.512	2.399	2.079	1.200	2.000	2.000	nv
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	2.000	3.578	2.512	2.399	2.079	1.200	2.000	2.000	nv
Corridor: Mont Blanc - RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		17.540	x	26.974	x	x	x	x	x	x
73 - Savoie		11.908	x	16.146	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	286.969	x	x	x	x	x	x
Corridor: Fréjus - RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
38 - Isère		42,248	x	57,419	x	x	x	x	x	x
73 - Savoie		11,908	x	16,146	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	286.969	x	x	x	x	x	x
Corridor: Fréjus - PI										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
	x	x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
	x	x	x	x	x	x	x	x	x	x

Table 21: IND. 20 - unemployed rate per year in the MONITRAF regions (NUTS 2 and NUTS 3)

(Number of unemployed / Labour force) * 100

Corridor: Gotthard - CS										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	0.3	3.2	1.3	1.2	2	3.1	3.2	3.1	2.7
Uri	CH062	x	1.6	0.5	0.4	0.7	1.1	1.2	1.3	1.1
Schwyz	CH063	0.1	2	0.7	0.6	1.2	2.1	2.3	2.3	2
Obwalden	CH064	0.1	1.7	0.4	0.5	1	1.6	1.7	1.6	1.5
Nidwalden	CH065	0.2	2.1	0.4	0.6	1.1	1.9	1.9	2	1.6
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Central Switzerland	CH06			1.1						
State	state code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Switzerland	CH	0.5	4.2	1.8	1.7	2.5	3.7	3.9	3.8	3.3
Corridor: Gotthard - TIC										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	1.9	6.7	3.1	2.6	3.5	4.2	4.5	4.9	4.9
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	1.9	6.7	3.1	2.6	3.5	4.2	4.5	4.9	4.9
State	state code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Schweiz/Svizzera/Suisse	CH	0.6	4.2	1.8	1.7	2.5	3.7	3.9	3.8	3.3
Corridor: Brenner - TYR										
NUTS 3	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT 331	na	na	na						
Innsbruck	AT 332	na	na	1.7	1.8	1.6	2.1	u 2,6	u 2,8	na
Osttirol	AT 333	na	na	na						
Tiroler Oberland	AT 334	na	na	5.0	5.2	na	na	na	na	na
Tiroler Unterland	AT 335	na	na	2.1	na	1.8	2.3	u 3,0	u 3,2	na
NUTS 2	SABE Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT 33	na	na	2.5	2.3	2.0	2.5	3.3	3.5	na
Corridor: Brenner S-TYR										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	n.a.	n.a.	2.1	1.9	1.9	2.0	2.7	2.7	n.a.
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma	ITD1	n.a.	n.a.	2.1	1.9	1.9	2.0	2.7	2.7	n.a.

Bolzano-Bozen										
Corridor: Mont Blanc - VDA										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	3.9%	7.1%	4.7%	4.4%	3.8%	2.3%	3.6%	3.6%	nv
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	3.9%	7.1%	4.7	4.4%	3.8%	2.3%	3.6%	3.6	nv
Corridor: Mont Blanc - RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		5.89%	x	7.96%	x	x	x	x	x	x
73 - Savoie		6.94%	x	8.54%	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	12.4	x	x	x	x	x	x
Corridor: Fréjus - RA										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
38 - Isère		8.46%	x	10.23%	x	x	x	x	x	x
73 - Savoie		6.94%	x	8.54%	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			x	12.43%	x	x	x	x	x	x
Corridor: Fréjus - PI										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
		x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
		x	x	x	x	x	x	x	x	x

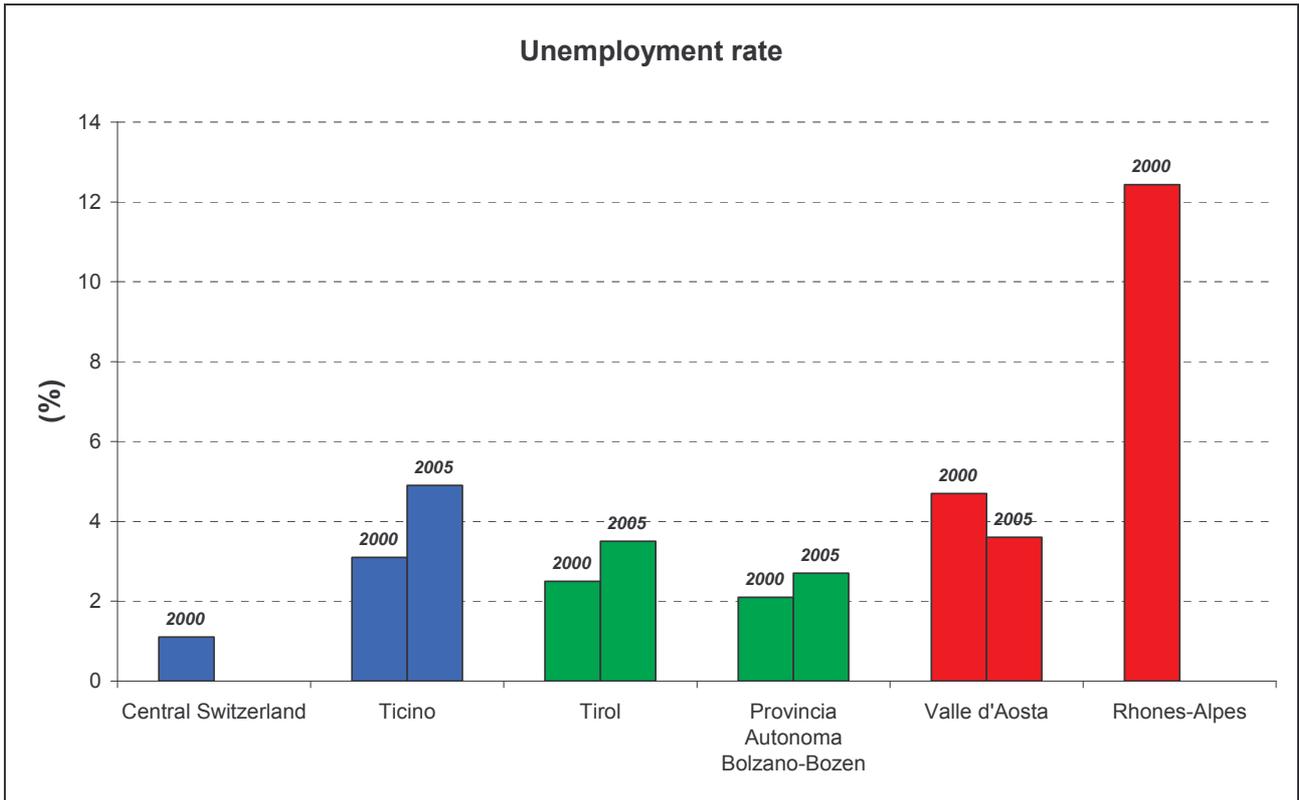


Figure 35: IND. 20 – unemployed rate in MONITRAF regions (2000 – 2005)

Employment rates in Monitraf countries are low: approximately 4.5% over the period considered, a much lower value than the European average (EU15) which, over the same period was 8%. The Rhône-Alpes region is an exception: in 2000 it reached 12.43% unemployment (EU15 7.7% in 2000).

Where data are available, one sees a slight increase in unemployment rates between 2000 and 2005 with the exception of the Aosta valley.

Indicator:			Transport market		
Number:	21	Name :	Number of employees in the transport sector		
WP7 Codification:	724, 725	Main category:	Economy	Unit:	number
Level:	NUTS 3, NUTS 2				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	Number of employed persons in the transport sector (NACE / NOGA) for NUTS 3 level and NUTS 2 level				
Calculation:	Number of employed persons in the transport sector				
Data:					
Name:	Number of employed persons in the transport sector	Unit:	number	Periodicity:	annual
Period:	2000-2006		Reference period:	1990, 1995	
Definition of data to be collected:	Number of employed persons in the transport sector (for EU: NACE sections 60, 61, 62 and 63; for Switzerland: NOGA) for NUTS 3 level and NUTS 2 level				
Data source (citation basis):	<p>CS: Swiss Statistics. Companies Census, Years 1995, 1998, 2001 and 2005. (http://www.bfs.admin.ch/bfs/portal/de/index/themen/06.html in German);</p> <p>TIC: UST - Censimento federale delle Aziende 1995-2005, Data Warehouse del mercato del lavoro ticinese Unità delle statistiche economiche, Ufficio cantonale di statistica, Stabile Torretta, CH-6500 BELLINZONA, tel. +41 91 814 6436;</p> <p>TYR: Amt der Tiroler Landesregierung, Abt. Raumordnung Statistik;</p> <p>VDA: ISTAT;</p> <p>RA: INSEE.</p>				
Other Comments:	<p>RA: Based on the definition used in the demographic census, the active population includes people who declare they are:</p> <ul style="list-style-type: none"> - doing a job, be they wage-earners or not (including part-time jobs) - assisting a member of the family in his/her job (even without pay) - apprentices or interns (even unpaid) - doing their military service (up to the time it was in force) 				
Classification of economic activities					
NACE (EU)					
Section	Description				
60	Land transport, transport via pipelines				
61	Water transport				
62	Air transport				
63	Supporting and auxiliary transport activities; activities of travel agencies				
NOGA (Switzerland)					

Section	Description
60	Land transport; transport via pipelines
61	Water transport
62	Air transport
63	Supporting and auxiliary transport activities; activities of travel agencies

Data Quality

The sets of data do not have the same time distribution in the countries considered; this depends on the frequency of data collection and on the years chosen for the census. No data are available for the Italian side of the Fréjus.

IND.21	INDICATORS-VALUES	NUT2	NUT3
CS	data detail	1995, 2001, 2005	1995, 2001, 2005
	detail scale *	1	5
	data completeness	33%	33%
TIC	data detail	1995, 2001, 2005	1995, 2001, 2005
	detail scale *	1	1
	data completeness	33%	33%
TYR	data detail	1995, 2000-2006	x
	detail scale *	1	0
	data completeness	89%	0%
S_TYR	data detail	2002-2004	2002-2004
	detail scale *	1	1
	data completeness	33%	33%
VDA	data detail	2001	2001
	detail scale *	1	1
	data completeness	11%	11%
RA	data detail	2004	1999, 2004
	detail scale *	1	4
	data completeness	11%	22%
PI	data detail	x	x
	detail scale *	0	0
	data completeness	0%	0%

* = NUTS number

Table 22: IND. 21 - employed people in the transport sector per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard - CS											
Region, NUTS 3	NUTS 3 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	60	x	401	x	410	x	x	x	380	x
		61	x	2	x	2	x	x	x	3	x
		62	x	1	x	1	x	x	x	2	x
		63	x	138	x	149	x	x	x	140	x
Uri	CH062	60	x	65	x	58	x	x	x	57	x
		61	x	0	x	1	x	x	x	1	x
		62	x	2	x	2	x	x	x	1	x
		63	x	10	x	7	x	x	x	10	x
Schwyz	CH063	60	x	219	x	220	x	x	x	205	x
		61	x	1	x	0	x	x	x	1	x
		62	x	3	x	3	x	x	x	3	x
		63	x	49	x	62	x	x	x	67	x
Obwalden	CH064	60	x	50	x	49	x	x	x	48	x
		61	x	0	x	0	x	x	x	0	x
		62	x	0	x	0	x	x	x	0	x
		63	x	20	x	14	x	x	x	16	x
Nidwalden	CH065	60	x	61	x	55	x	x	x	51	x
		61	x	2	x	1	x	x	x	1	x
		62	x	0	x	0	x	x	x	2	x
		63	x	15	x	13	x	x	x	16	x
NUTS 2 label	NUTS 2 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	60	x	874	x	890	x	x	x	855	x
		61	x	8	x	7	x	x	x	10	x
		62	x	7	x	9	x	x	x	12	x
		63	x	273	x	313	x	x	x	313	x
Corridor: Gotthard – TIC											
Region, NUTS 3	NUTS 3 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	60	nv	5,012	nv	4,078	nv	nv	nv	3,932	nv
Ticino	CH07	61	nv	97	nv	97	nv	nv	nv	88	nv
Ticino	CH07	62	nv	225	nv	221	nv	nv	nv	139	nv
Ticino	CH07	63	nv	2,084	nv	2,280	nv	nv	nv	2,156	nv
NUTS 2 label	NUTS 2 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006

Ticino	CH07	60	nv	5,012	nv	4,078	nv	nv	nv	3,932	nv
Ticino	CH07	61	nv	97	nv	97	nv	nv	nv	88	nv
Ticino	CH07	62	nv	225	nv	221	nv	nv	nv	139	nv
Ticino	CH07	63	nv	2,084	nv	2,280	nv	nv	nv	2,156	nv
Corridor: Brenner - TYR											
NUTS 2 label	NUTS 2 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	60		12873	13435	13500	13756	13775	13714	14060	14296
		61		0	7	9	9	11	16	17	18
		62		624	816	849	860	880	901	920	995
		63		2379	2386	2517	2646	2637	2608	3015	2904
Corridor: Brenner S-TYR											
Region (NUTS 3)	NUTS 3 Code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	60	n.a.	n.a.	n.a.	n.a.	6,413	6,292	7,918	n.a.	n.a.
		61	n.a.	n.a.	n.a.	n.a.	0	0	3	n.a.	n.a.
		62	n.a.	n.a.	n.a.	n.a.			26	n.a.	n.a.
		63	n.a.	n.a.	n.a.	n.a.	1,132	1,851	1,872	n.a.	n.a.
NUTS 2 label	NUTS 2 code	NACE / NOGA	1,990	1,995	2,000	2,001	2,002	2,003	2,004	2,005	2,006
Provincia Autonoma Bolzano-Bozen	ITD1	60	n.a.	n.a.	n.a.	n.a.	6,413	6,292	7,918	n.a.	n.a.
		61	n.a.	n.a.	n.a.	n.a.	0	0	3	n.a.	n.a.
		62	n.a.	n.a.	n.a.	n.a.			26	n.a.	n.a.
		63	n.a.	n.a.	n.a.	n.a.	1,132	1,851	1,872	n.a.	n.a.
Corridor: Mont Blanc - VDA											
Region, NUTS 3	NUTS 3 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	60	x	x	x	1581	x	x	x	x	x
	ITC20	61	na								
	ITC20	62	x	x	x	1581	x	x	x	x	x
	ITC20	63	x	x	x	713	x	x	x	x	x
NUTS 2 label	NUTS 2 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	60	x	x	x	1581	x	x	x	x	x
	ITC2	61	na								
	ITC2	62	x	x	x	1581	x	x	x	x	x
	ITC2	63	x	x	x	713	x	x	x	x	x
Corridor: Mont Blanc - RA											
NUTS 3 label	NUTS 3 code	NACE / NOGA	1990	1995	1999	2001	2002	2003	2004	2005	2006
74 - Haute Savoie			X	X	10,978	X	X	X	10,335	X	X
73 - Savoie			X	X	11,471	X	X	X	12,630	X	X

NUTS 2 Label	NUTS 2 Code	NACE / NOGA	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			X	X	X	X	X	X	108,768	X	X
Corridor: Fréjus - RA											
NUTS 3 label	NUTS 3 code	NACE / NOGA	1990	1995	1999	2001	2002	2003	2004	2005	2006
38 - Isère			X	X	17,937	X	X	X	17,522	X	X
73 - Savoie			X	X	11,471	X	X	X	12,630	X	X
NUTS 2 Label	NUTS 2 Code	NACE / NOGA	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes			X	X	X	X	X	X	108,768	X	X
Corridor: Fréjus - PI											
NUTS 3 label	NUTS 3 code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
			X	X	X	X	X	X	X	X	X
NUTS 2 Label	NUTS 2 Code	NACE / NOGA	1990	1995	2000	2001	2002	2003	2004	2005	2006
			X	X	X	X	X	X	X	X	X

Data set dishomogeneity does not allow for a satisfactory elaboration of the indicator

In very general terms one may observe that transport staff represent approximately 4% of the labour force (Aosta Valley, Tyrol, South Tyrol, Isère); the Savoie department has a higher percentage: 7% over the total labour force.

Indicator:		Touristic accomodation capacity			
Number:	22	Name:	Number of tourist beds per inhabitant		
WP7 Codification:	901	Main category:	Economy	Unit:	tourist beds/inhabitant
Level:	NUTS 5, NUTS 3, NUTS 2				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	Number of tourist beds in commercial and non commercial accomodations				
Calculation:	(Number of tourist beds in commercial accomodation + number of tourist beds in non commercial accomodation) / number of inhabitants (indicator n° 19)				
Data:					
Name:	Number of tourist beds in commercial accomodation	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of tourist beds in commercial accomodation for level NUTS 2, NUTS 3 and NUTS 5				
Data source (citation basis):	<p>CS: Swiss statistics. Tourist accomodation statistics. See http://www.bfs.admin.ch/bfs/portal/de/index/themen/tourismus.html;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/;</p> <p>TYR: Amt der Tiroler Landesregierung, Abteilung Raumordnung Statistik;</p> <p>S-TYR:ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), Amt für Wirtschaftsstatistik / Ufficio statistiche economiche;</p> <p>VDA: Dipartimento turismo, sport e commercio - Assessorato turismo, sport, commercio e trasporti - Regione Autonoma Valle d'Aosta</p>				
Other Comments:	<p>CS: No differentiation can be made between commercial and non commercial accomodation, no data have been provided for NUTS 5;</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of tourist beds in commercial accomodation;</p> <p>VDA: data for total beds</p>				
Name:	Number of tourist beds in non commercial accomodation	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of tourist beds in non commercial accomodation for level NUTS 2, NUTS 3 and NUTS 5				

Data source (citation basis):	CS: Swiss statistics. Tourist accomodation statistics. See http://www.bfs.admin.ch/bfs/portal/de/index/themen/tourismus.html ; TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/ ; TYR: Amt der Tiroler Landesregierung, Abteilung Raumordnung Statistik; S-TYR: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), Amt für Wirtschaftsstatistik / Ufficio statistiche economiche; VDA: Dipartimento turismo, sport e commercio - Assessorato turismo, sport, commercio e trasporti - Regione Autonoma Valle d'Aosta				
Other Comments:	CS: No differentiation can be made between commercial and non commercial accomodation, no data have been provided for NUTS 5; TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of tourist beds in commercial accomodation; VDA: data for total beds				
Name:	Inhabitants	Unit:	number	Periodicity:	annual
Period:	2000-2006		Reference period:	1990, 1995	
Definition of data to be collected:	Inhabitants for NUTS 5 level, NUTS 3 level and NUTS 2 level				
Data source (citation basis):	(see indicator n° 19)				
Other Comments:	(see indicator n° 19)				
Definition type of accomodation					
Commercial accomodation					
Description					
e.g. hotel					
e.g. pensions					
TICINO:					
Hotels					
Nursing homes					
Non commercial accomodation					
Description					
e.g. farm stay					
e.g. private accomodations					
e.g. camps					
TICINO:					
Youth hostels					
Private accomodations					
Campsites					

Data Quality

The data set is quite complete but it is not always possible to tell the difference between hotel (commercial) beds and non commercial beds, and when this is possible, the sets are incomplete since they only refer to the years of the general censuses.

IND.22	INDICATORS-VALUES	NUT2	NUT3	NUT5
CS	data detail	1990, 1995, 2000-2003, 2005	1990, 1995, 2000-2003, 2005	x
	detail scale *	1	5	0
	data completeness	78%	78%	0%
TIC	data detail	1995, 2000- 2003, 2005	1995, 2000- 2003, 2005	x
	detail scale *	1	1	0
	data completeness	67%	67%	0%
TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	5	279
	data completeness	100%	100%	100%
S_TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	116
	data completeness	100%	100%	100%
VDA	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	41
	data completeness	100%	100%	100%
RA	data detail	1990, 2000	1990, 2000	x
	detail scale *	1	4	0
	data completeness	22%	22%	0%
PI	data detail	1995, 2000- 2006	1995, 2000- 2006	1995, 2000- 2006
	detail scale *	1	2	37
	data completeness	89%	89%	89%

* = NUTS number

Table 23: IND. 22 - number of tourist beds per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard - CS										
Number of tourist beds in commercial and non-commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	11,057	10,689	11,176	11,307	10,958	10,818	x	11,160	x
Uri	CH062	3,190	3,173	3,386	3,360	3,154	3,169	x	3,338	x
Schwyz	CH063	6,372	5,839	6,195	6,168	6,009	5,989	x	5,642	x
Obwalden	CH064	5,311	4,657	4,684	4,692	4,655	4,590	x	4,505	x
Nidwalden	CH065	2,668	2,585	2,477	2,468	2,484	2,438	x	3,045	x
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	30,181	28,459	29,521	29,681	28,912	28,635	x	29,260	x
Corridor: Gotthard - TIC										
Number of tourist beds in commercial accomodation *										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	25,300	24,442	23,795	23,658	23,448	x	21,995	
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	25,300	24,442	23,795	23,658	23,448	x	21,995	
Corridor: Brenner - TYR										
Number of tourist beds in commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	17,716	17,299	17,109	17,312	16,555	16,575	16,358	16,326	16,086
Innsbruck	AT332	40,037	38,155	36,273	35,434	34,912	35,153	34,560	34,493	33,677
Osttirol	AT333	10,706	11,317	11,029	10,803	10,236	10,467	10,466	10,493	10,737
Tiroler Oberland	AT334	54,210	58,770	62,484	62,727	63,062	63,299	62,812	63,867	66,165
Tiroler Unterland	AT335	95,872	95,062	91,616	90,987	90,160	88,587	89,034	88,463	90,045
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	218,541	220,603	218,511	217,263	214,925	214,081	213,230	213,642	216,710
Number of tourist beds in non-commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	12,795	12,725	12,354	11,483	11,536	11,000	10,744	10,517	10,656
Innsbruck	AT332	17,987	19,003	17,490	17,103	16,642	16,864	16,744	16,447	16,517
Osttirol	AT333	7,915	8,385	8,315	8,034	7,880	7,848	7,877	7,829	7,529
Tiroler Oberland	AT334	30,502	33,579	32,492	32,144	31,297	31,138	30,684	30,738	31,233
Tiroler Unterland	AT335	61,062	61,297	56,019	55,378	55,479	54,367	53,907	55,078	56,447

NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	130,261	134,989	126,670	124,142	122,834	121,217	119,956	120,609	122,382
Corridor: Brenner - S-TYR										
Number of tourist beds in commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	149,705	146,418	146,147	146,288	146,563	146,640	147,721	148,156	149,018
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano/Bozen	ITD1	149,705	146,418	146,147	146,288	146,563	146,640	147,721	148,156	149,018
Number of tourist beds in non-commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	79,739	66,822	65,274	64,743	64,896	65,144	65,832	66,447	67,311
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano/Bozen	ITD1	79,739	66,822	65,274	64,743	64,896	65,144	65,832	66,447	67,311
Corridor: Mont Blanc - VDA										
Number of tourist beds in commercial and non-commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
VALLE D'AOSTA	ITC20	103,605	57,210	52,330	52,520	53,318	53,453	49,260	49,903	50,612
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
VALLE D'AOSTA	ITC2	103,605	57,210	52,330	52,520	53,318	53,453	49,260	49,903	50,612
Corridor: Mont Blanc - RA										
Number of tourist beds in commercial accomodation										
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Savoie									212,012	
Haute-Savoie									208,140	
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes									702,328	
Number of tourist beds in non-commercial accomodation										
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		313,772		335,165						
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Savoie		88,206		96,884						
Haute-Savoie		82,949		95,396						

Corridor: Fréjus - RA										
Number of tourist beds in commercial accomodation										
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Isère									70,749	
Savoie									212,012	
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes									702,328	
Number of tourist beds in non-commercial accomodation										
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		313,772		335,165						
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Savoie		88,206		96,884						
Isère		48,095		47,013						
Corridor: Fréjus- PI										
Number of tourist beds in commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TORINO			25,056	25,918	25,750	26,983	27,499	28,720	29,835	34,598
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
PIEMOND			64,577	66 410	66 150	67 588	68 732	70 632	73 536	81,059
Number of tourist beds in non-commercial accomodation										
Region, NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TORINO			20,891	23,067	23,380	23,398	23,114	23,532	24,245	27,671
VERBANO-CUSIO-OSSOLA			18,906	19,344	20,491	20,306	20,260	20,285	22,535	22,770
NUTS 2 label	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
PIEMONTE			69,724	74 453	77 833	78 694	79 270	81 563	88 347	94,543

Table 24: IND. 22 - number of tourist beds per 100 inhabitants in the MONITRAF regions (NUTS 2 and NUTS 3)

Corridor: Gotthard (Central Switzerland) beds/100 inhab										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	3.5	3.1	3.2	3.2	3.1	3.1	x	3.1	x
Uri	CH062	9.5	8.8	9.6	9.6	9.0	9.0	x	9.5	x
Schwyz	CH063	5.8	4.8	4.8	4.7	4.5	4.4	x	4.1	x
Obwalden	CH064	18.4	14.9	14.5	14.4	14.1	13.8	x	13.5	x
Nidwalden	CH065	8.2	7.1	6.5	6.4	6.4	6.2	x	7.7	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Central Switzerland	CH06	4.95	4.32	4.33	4.31	4.16	4.10	x	4.13	x
Corridor: Gotthard (side: Ticino) beds/100 inhab										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	x	8.29	7.88	7.61	7.50	7.39	x	6.82	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	x	8.29	7.88	7.61	7.50	7.39	x	6.82	x
Corridor: Brenner TYR Inhabitants beds/100 inhab										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	104.20	96.79	93.75	91.20	88.23	86.54	84.84	84.09	
Innsbruck	AT332	23.13	22.04	20.15	19.52	18.99	19.05	18.60	18.31	
Osttirol	AT333	37.53	38.87	38.15	37.32	35.94	36.36	36.33	36.22	
Tiroler Oberland	AT334	96.96	98.23	98.48	97.86	96.31	95.47	94.23	94.48	
Tiroler Unterland	AT335	76.66	71.40	65.07	64.05	63.08	61.47	60.86	60.67	
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	56.09	54.36	51.35	50.45	49.48	48.82	48.13	47.93	
Corridor: Brenner S-TYR _beds/100 inhab										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	51.95	47.22	45.44	45.79	45.25	44.90	44.76	44.46	44.36
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	51.95	47.22	45.44	45.79	45.25	44.90	44.76	44.46	44.36
Corridor: Mont Blanc VdA _beds/100 inhab										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	89.32	48.19	43.87	43.93	44.10	43.80	40.09	40.25	nv
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Regione Autonoma Valle d'Aosta	ITC2	89.32	48.19	43.87	43.93	44.10	43.80	40.09	40.25	nv
Corridor: Mont Blanc FRANCE commercial acc/100 inhab										
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Savoie									53.00	
Haute-Savoie									30.34	
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes									11.70	
Corridor: Mont Blanc FRANCE commercial acc/100 inhab										
NUTS 3	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Savoie									53.00	

Isère									6.09	
Region NUTS 2	NUTS 2 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes									11.70	
Corridor:Fréjus PIEDMONT _beds/100 inhab										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TORINO			4.89	5.34	5.51	5.55	5.47	5.49	5.65	6.46
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Piemonte			8.01	8.49	8.96	9.04	9.03	9.17	9.83	10.55

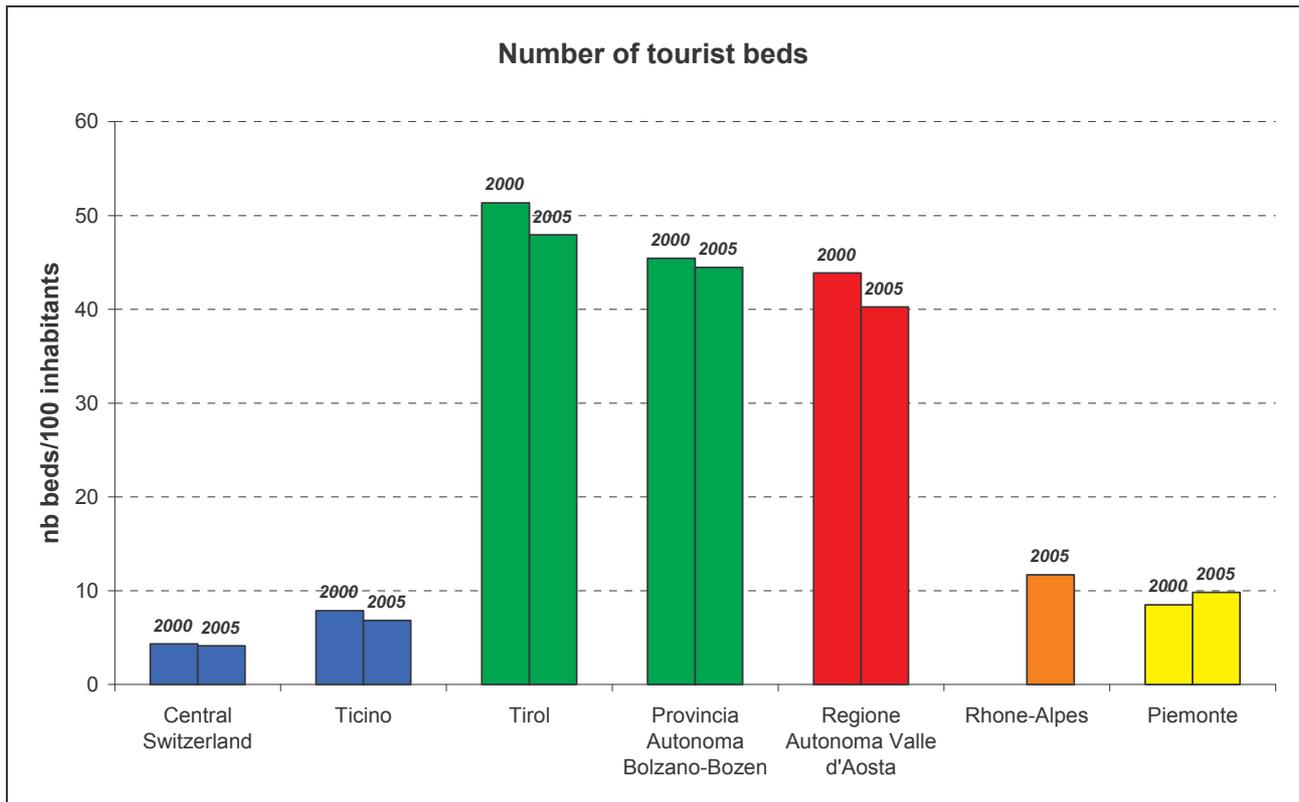


Figure 36: IND. 22 – number of tourist beds per 100 inhabitants in MONITRAF regions (2000 – 2005)

In absolute terms, the country with the highest number of beds is Rhône-Alpes (over 700,000); even the Savoie and Haute Savoie have a number of beds exceeding all other Monitraf regions/cantons.

Tyrol, South Tyrol and the Aosta Valley are all regions with strong tourist infrastructures, revealed by the high beds/inhabitants ratio, ranging between 40 and 47 beds every 100 inhabitants. At NUT3 level, most of the Tyrol departments, with the exception of Innsbruck and the Savoie and Haute Savoie, have clearly higher values coming close, in one case, to 1 bed per inhabitant (Tiroler Oberland)

Between 2000 and 2005 the trend, with the exception of Piedmont which hosted the Winter Olympic games in 2006, is towards a moderate reduction in the number of beds.

Indicator:				Overnight stays	
Number:	23	Name:	Overnight stays		
WP7 Codification:	903	Main category:	Economy	Unit:	n° of stays/month
Level:	NUTS 5, NUTS 3, NUTS 2				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	Number of overnight stays in commercial and non commercial accomodations per month				
Calculation:	Number of overnight stays in commercial accomodation + number of overnight stays in non commercial accomodation				
Data:					
Name:	Number of overnight stays in commercial accomodation	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of overnight stays in commercial accomodation per month for level NUTS 2, NUTS 3 and NUTS 5				
Data source (citation basis):	<p>CS: Swiss statistics. Tourist accomodation statistics. See http://www.bfs.admin.ch/bfs/portal/de/index/themen/tourismus.html;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/;</p> <p>TYR: Amt der Tiroler Landesregierung, Abteilung Raumordnung Statistik;</p> <p>S-TYROL: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), Amt für Wirtschaftsstatistik / Ufficio statistiche economiche;</p> <p>VDA: Dipartimento turismo, sport e commercio - Assessorato turismo, sport, commercio e trasporti - Regione Autonoma Valle d'Aosta;</p>				
Other Comments:	<p>CS: No differentiation can be made between commercial and non commercial accomodation, only annual data are available, no data have been provided for NUTS 5;</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of overnight stays in commercial accomodation per month;</p> <p>VDA: data for total overnight stays</p>				
Name:	Number of overnight stays in non commercial accomodation	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of overnight stays in non commercial accomodation per month for level NUTS 2, NUTS 3 and NUTS 5				

Data source (citation basis):	<p>CS: Swiss statistics. Tourist accomodation statistics. See http://www.bfs.admin.ch/bfs/portal/de/index/themen/tourismus.html;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/;</p> <p>TYR: Amt der Tiroler Landesregierung, Abteilung Raumordnung Statistik;</p> <p>S-TYROL: ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), Amt für Wirtschaftsstatistik / Ufficio statistiche economiche;</p> <p>VDA: Dipartimento turismo, sport e commercio - Assessorato turismo, sport, commercio e trasporti - Regione Autonoma Valle d'Aosta</p>
Other Comments:	<p>CS: No differentiation can be made between commercial and non commercial accomodation, only annual data are available, no data have been provided for NUTS 5;</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of overnight stays in commercial accomodation per month;</p> <p>VDA: data for total overnight stays</p>
Definition type of accomodation	
Commercial accomodation	
Description	
e.g. hotel	
e.g. pensions	
TICINO:	
Hotels	
Nursing homes	
Non commercial accomodation	
Description	
e.g. farm stay	
e.g. private accomodations	
e.g. camps	
TICINO:	
Youth hostels	
Private accomodations	
Campsites	
Collectives lodgings	

Data Quality

The data set is quite complete for NUTS 2 and 3 levels, whilst for NUT 5 data are only supplied for the Brenner corridor. Data relating to Central Switzerland are available only at annual level without monthly details; the Aosta Valley has only supplied data referring to one year: 2002. It is not always possible to tell the difference between hotel (commercial) beds and non commercial beds

IND.23	INDICATORS-VALUES	NUT2	NUT3	NUT5
CS	data detail	1990, 1995, 2000-2003, 2005	1990, 1995, 2000-2003, 2005	x
	detail scale *	1	5	0
	data completeness	6%	6%	0%
TIC	data detail	1990, 1995, 2000-2003, 2005-2006	1990, 1995, 2000-2003, 2005-2006	x
	detail scale *	1	1	0
	data completeness	89%	89%	0%
TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	5	279
	data completeness	100%	100%	100%
S_TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	116
	data completeness	100%	100%	100%
VDA	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	x
	detail scale *	1	1	0
	data completeness	18%	18%	0%
RA	data detail	1995, 2000-2005	x	x
	detail scale *	1	0	0
	data completeness	78%	0%	0%
PI	data detail	1995, 2000-2006	1995, 2000-2006	x
	detail scale *	1	1	0
	data completeness	89%	89%	0%

* = NUTS number

Table 25: IND. 23 - overnight stays per year in the MONITRAF regions (NUTS 2)

Region, NUTS 2	NUTS 2 code	YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Corridor: Gotthard (Zentralschweiz): Commercial + Non Commercial															
Central Switzerland	CH06	1990	x	x	x	x	x	x	x	x	x	x	x	x	3,909,701
Central Switzerland	CH06	1995	x	x	x	x	x	x	x	x	x	x	x	x	3,228,082
Central Switzerland	CH06	2000	x	x	x	x	x	x	x	x	x	x	x	x	3,718,121
Central Switzerland	CH06	2001	x	x	x	x	x	x	x	x	x	x	x	x	3,485,127
Central Switzerland	CH06	2002	x	x	x	x	x	x	x	x	x	x	x	x	3,202,822
Central Switzerland	CH06	2003	x	x	x	x	x	x	x	x	x	x	x	x	3,065,629
Central Switzerland	CH06	2004	x	x	x	x	x	x	x	x	x	x	x	x	x
Central Switzerland	CH06	2005	x	x	x	x	x	x	x	x	x	x	x	x	3,246,832
Central Switzerland	CH06	2006	x	x	x	x	x	x	x	x	x	x	x	x	x
Corridor: Gotthard (side: Ticino): Commercial															
Ticino	CH07	1990	60,454	77,449	159,099	365,672	367,156	405,180	478,385	484,921	481,529	375,174	121,599	77,672	3,454,290
Ticino	CH07	1995	49,524	59,661	140,495	316,455	300,795	309,035	351,172	379,770	343,560	316,570	83,404	60,244	2,710,685
Ticino	CH07	2000	59,299	72,181	171,392	324,149	324,768	355,709	472,514	439,928	411,725	276,518	86,419	69,080	3,063,682
Ticino	CH07	2001	55,717	65,804	146,507	318,258	311,880	354,753	430,389	433,998	402,727	290,451	88,619	63,858	2,962,961
Ticino	CH07	2002	53,834	68,686	184,377	240,584	283,411	288,803	373,099	388,473	317,828	274,034	87,598	62,291	2,623,018
Ticino	CH07	2003	50,954	57,032	134,844	258,331	293,841	282,193	359,002	362,426	317,293	258,126	80,948	63,318	2,518,308
Ticino	CH07	2004	x	x	x	x	x	x	x	x	x	x	x	x	x
Ticino	CH07	2005	51,102	58,849	145,793	204,035	291,886	291,512	389,885	388,323	310,031	261,721	81,746	64,113	2,538,986
Ticino	CH07	2006	51,353	63,012	121,670	278,091	293,496	305,835	385,290	411,486	333,280	280,446	95,942	x	x
Corridor: Gotthard (side: Ticino): Non Commercial															
Ticino	CH07	1990	x	x	x	x	x	x	x	x	x	x	x	x	x
Ticino	CH07	1995	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,991,000
Ticino	CH07	2000	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,611,000
Ticino	CH07	2001	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,506,000
Ticino	CH07	2002	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,446,000

Piemonte		2006	748660	937591	683181	605905	644359	628349	702938	674774	674096	552935	434107	437631	7,727,532
Corridor: Fréjus PIEDMONT: Non Commercial															
Piemonte		1990													
Piemonte		1995	87503	76868	87275	152583	133270	205801	571623	720911	151785	101831	85767	92828	2,470,040
Piemonte		2000	96550	85527	91750	175961	145750	270909	547767	644065	189662	101722	76392	85228	2,513,283
Piemonte		2001	101239	102217	107248	194148	178317	292582	600995	727742	198721	120149	91926	90048	2,807,333
Piemonte		2002	86212	90116	153637	149399	215514	248345	593298	705249	183962	117264	92331	88276	2,725,505
Piemonte		2003	85649	95440	115231	202447	203269	341351	608779	773322	211062	133970	91003	94269	2,957,795
Piemonte		2004	111679	101531	114095	179290	241190	296985	593798	752461	237584	132846	92227	112324	2,968,014
Piemonte		2005	123588	114378	186658	174671	285408	303801	593143	773955	240807	169583	117662	127774	3,213,633
Piemonte		2006	173652	247702	154534	205794	238156	357996	615474	751311	243401	143975	95740	141069	3,370,810

Table 26: IND. 23 - overnight stays per year in the MONITRAF regions (NUTS 3)

Region, NUTS 3	NUTS 3 code	YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Corridor: Gotthard CS: Commercial + Non Commercial															
Luzern	CH061	1990	x	x	x	x	x	x	x	x	x	x	x	x	1,646,733
Uri	CH062	1990	x	x	x	x	x	x	x	x	x	x	x	x	327,811
Schwyz	CH063	1990	x	x	x	x	x	x	x	x	x	x	x	x	690,093
Obwalden	CH064	1990	x	x	x	x	x	x	x	x	x	x	x	x	710,921
Nidwalden	CH065	1990	x	x	x	x	x	x	x	x	x	x	x	x	294,290
Luzern	CH061	1995	x	x	x	x	x	x	x	x	x	x	x	x	1,385,124
Uri	CH062	1995	x	x	x	x	x	x	x	x	x	x	x	x	248,562
Schwyz	CH063	1995	x	x	x	x	x	x	x	x	x	x	x	x	544,254
Obwalden	CH064	1995	x	x	x	x	x	x	x	x	x	x	x	x	565,512
Nidwalden	CH065	1995	x	x	x	x	x	x	x	x	x	x	x	x	279,567
Luzern	CH061	2000	x	x	x	x	x	x	x	x	x	x	x	x	1,659,279
Uri	CH062	2000	x	x	x	x	x	x	x	x	x	x	x	x	248,528
Schwyz	CH063	2000	x	x	x	x	x	x	x	x	x	x	x	x	612,211
Obwalden	CH064	2000	x	x	x	x	x	x	x	x	x	x	x	x	647,429
Nidwalden	CH065	2000	x	x	x	x	x	x	x	x	x	x	x	x	294,948
Luzern	CH061	2001	x	x	x	x	x	x	x	x	x	x	x	x	1,523,102
Uri	CH062	2001	x	x	x	x	x	x	x	x	x	x	x	x	234,577
Schwyz	CH063	2001	x	x	x	x	x	x	x	x	x	x	x	x	565,744
Obwalden	CH064	2001	x	x	x	x	x	x	x	x	x	x	x	x	612,215
Nidwalden	CH065	2001	x	x	x	x	x	x	x	x	x	x	x	x	287,407
Luzern	CH061	2002	x	x	x	x	x	x	x	x	x	x	x	x	1,404,912
Uri	CH062	2002	x	x	x	x	x	x	x	x	x	x	x	x	217,008
Schwyz	CH063	2002	x	x	x	x	x	x	x	x	x	x	x	x	511,310

Ticino	CH07		2003	50,954	57,032	134,844	258,331	293,841	282,193	359,002	362,426	317,293	258,126	80,948	63,318	2,518,308
Ticino	CH07		2004	x	x	x	x	x	x	x	x	x	x	x	x	x
Ticino	CH07		2005	51,102	58,849	145,793	204,035	291,886	291,512	389,885	388,323	310,031	261,721	81,746	64,113	2,538,996
Ticino	CH07		2006	51,353	63,012	121,670	278,091	293,496	305,835	385,290	411,486	333,280	280,446	95,942	x	x
Corridor: Gotthard TIC: Non Commercial																
Ticino	CH07		1990	x	x	x	x	x	x	x	x	x	x	x	x	x
Ticino	CH07		1,995	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,991,000
Ticino	CH07		2,000	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,611,000
Ticino	CH07		2001	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,506,000
Ticino	CH07		2002	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,446,000
Ticino	CH07		2003	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	2,418,000
Ticino	CH07		2004	x	x	x	x	x	x	x	x	x	x	x	x	x
Ticino	CH07		2005	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv
Ticino	CH07		2006	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	nv	x
Corridor: Brenner TYR: Commercial																
AUSSERFERN	AT 331		1990	241,757	321,773	251,918	104,671	98,828	212,998	365,443	407,148	266,903	119,785	22,218	137,048	2,550,490
INNSBRUCK	AT 332		1990	529,538	662,989	555,838	328,535	274,534	476,309	784,828	908,087	597,653	307,692	137,919	352,528	5,916,450
OSTTIROL	AT 333		1990	77,780	109,895	94,385	61,009	32,439	98,545	216,043	260,884	161,396	48,139	10,474	72,250	1,243,239
TIROLER OBERLAND	AT 334		1990	917,259	1,048,621	1,136,172	660,017	170,287	366,947	773,914	840,259	482,396	218,473	155,799	558,160	7,328,304
TIROLER UNTERLAND	AT 335		1990	1,516,579	1,859,685	1,450,446	537,488	570,386	1,085,715	1,818,991	1,917,969	1,297,263	576,310	174,513	880,682	13,686,027
AUSSERFERN	AT 331		1995	287,595	330,328	212,404	75,823	84,954	166,253	287,647	309,395	206,445	107,527	24,352	135,249	2,247,972
INNSBRUCK	AT 332		1995	547,751	596,376	434,388	274,651	254,149	399,513	567,970	698,360	444,614	263,717	125,409	342,474	4,949,372
OSTTIROL	AT 333		1995	129,200	145,443	94,550	51,933	32,987	106,183	199,918	243,765	131,232	45,718	5,874	62,323	1,249,126
TIROLER OBERLAND	AT 334		1995	1,134,595	1,178,407	1,045,177	719,392	143,921	344,058	780,025	769,346	401,475	210,981	131,118	604,648	7,463,143
TIROLER UNTERLAND	AT 335		1995	1,651,154	1,894,614	1,104,830	470,131	558,146	977,027	1,590,829	1,643,274	1,123,234	557,865	194,490	808,086	12,573,680
AUSSERFERN	AT 331		2000	302,118	323,984	258,071	76,677	84,301	195,166	273,121	301,743	226,899	129,742	17,917	147,723	2,337,482
INNSBRUCK	AT 332		2000	552,370	577,178	464,136	288,172	216,499	426,464	588,922	671,006	471,015	295,849	160,382	411,782	5,103,775
OSTTIROL	AT 333		2000	146,346	153,579	114,555	39,552	27,067	97,514	193,811	229,463	127,530	37,350	9,285	94,405	1,270,457

TIROLER OBERLAND	AT 334		2000	1,343,952	1,334,096	1,390,009	791,373	126,154	346,442	754,102	816,395	436,027	241,697	182,988	866,432	8,629,667
TIROLER UNTERLAND	AT 335		2000	1,839,005	1,998,869	1,458,830	496,573	451,840	954,355	1,505,466	1,604,460	1,134,142	610,873	186,192	943,784	13,184,389
AUSSERFERN	AT 331		2001	297,165	354,052	234,059	89,299	94,638	180,922	273,665	292,059	205,667	126,313	22,113	158,376	2,328,318
INNSBRUCK	AT 332		2001	562,767	622,739	481,292	276,958	236,450	390,149	569,215	662,239	427,218	321,988	184,154	413,507	5,148,676
OSTTIROL	AT 333		2001	153,754	178,206	115,440	56,989	33,933	96,084	197,897	244,323	119,639	40,757	7,042	84,616	1,328,680
TIROLER OBERLAND	AT 334		2001	1,415,859	1,440,571	1,401,525	877,860	125,316	316,469	747,708	796,363	373,759	257,317	197,290	896,194	8,846,231
TIROLER UNTERLAND	AT 335		2001	1,855,351	2,059,559	1,430,187	542,135	515,472	882,972	1,501,858	1,614,503	1,028,643	648,163	198,312	1,024,660	13,301,815
AUSSERFERN	AT 331		2002	290,827	350,726	243,461	63,880	126,611	166,025	272,335	311,132	205,089	124,099	17,457	167,310	2,338,952
INNSBRUCK	AT 332		2002	549,993	648,936	515,913	211,165	254,145	370,442	594,986	694,243	432,744	331,009	187,083	417,594	5,208,253
OSTTIROL	AT 333		2002	145,884	179,064	144,144	30,493	41,678	88,684	189,332	243,149	118,025	40,271	7,255	93,868	1,321,847
TIROLER OBERLAND	AT 334		2002	1,394,627	1,546,253	1,601,205	602,338	170,159	316,795	745,558	817,156	399,371	289,401	197,495	962,808	9,043,166
TIROLER UNTERLAND	AT 335		2002	1,878,459	2,180,045	1,584,219	378,211	638,234	894,380	1,556,488	1,692,089	1,071,319	677,498	194,123	1,043,832	13,788,897
AUSSERFERN	AT 331		2003	270,400	308,845	240,648	84,840	99,901	203,026	255,280	347,381	213,667	123,501	24,308	155,070	2,326,867
INNSBRUCK	AT 332		2003	559,128	605,146	507,108	283,181	227,267	391,442	541,171	729,167	445,096	331,232	197,403	421,242	5,238,583
OSTTIROL	AT 333		2003	160,433	174,812	144,751	51,124	38,117	106,758	186,694	266,136	124,949	39,113	13,732	101,201	1,407,820
TIROLER OBERLAND	AT 334		2003	1,473,879	1,499,158	1,510,260	838,663	173,020	363,126	720,947	898,522	424,356	268,108	200,776	1,015,909	9,386,724
TIROLER UNTERLAND	AT 335		2003	1,867,508	2,107,321	1,568,104	526,003	533,042	981,441	1,401,159	1,820,119	1,141,242	649,468	182,800	998,042	13,776,249
AUSSERFERN	AT 331		2004	281,885	370,096	220,901	98,063	114,125	175,453	253,015	322,344	209,731	109,444	30,318	139,244	2,324,619
INNSBRUCK	AT 332		2004	543,622	658,539	454,815	292,127	248,855	388,089	567,585	701,184	434,349	328,350	198,915	389,154	5,205,584
OSTTIROL	AT 333		2004	154,043	194,880	131,086	58,136	39,088	97,714	185,679	255,836	128,598	40,821	12,862	75,708	1,374,441
TIROLER OBERLAND	AT 334		2004	1,455,376	1,647,106	1,468,020	883,463	163,006	335,255	731,455	889,297	446,173	278,289	203,794	868,534	9,369,768
TIROLER UNTERLAND	AT 335		2004	1,834,382	2,270,082	1,462,929	572,955	577,976	928,238	1,402,827	1,772,481	1,108,236	606,766	208,943	895,868	13,641,683
AUSSERFERN	AT 331		2005	333,920	371,269	293,656	49,358	133,241	162,068	269,704	311,430	199,532	118,203	34,180	146,487	2,423,048
INNSBRUCK	AT 332		2005	625,275	631,717	564,297	220,062	282,289	356,862	585,420	701,004	422,100	332,106	190,776	392,055	5,303,983
OSTTIROL	AT 333		2005	168,434	185,465	174,447	25,175	41,848	90,722	185,730	251,295	127,477	37,505	8,025	79,583	1,375,706
TIROLER OBERLAND	AT 334		2005	1,537,540	1,605,666	1,749,718	530,795	166,540	312,702	754,697	872,603	388,441	283,611	184,272	868,080	9,254,665
TIROLER UNTERLAND	AT 335		2005	2,043,935	2,213,296	1,958,363	324,656	640,515	854,555	1,446,336	1,778,267	1,103,714	635,756	211,925	953,235	14,164,553
AUSSERFERN	AT 331		2006	302,536	347,935	239,430	86,023	86,783	172,352	248,199	264,823	213,225	121,082	33,312	147,334	2,263,034

INNSBRUCK	AT 332		2006	559,508	606,208	481,583	305,186	253,843	382,452	565,285	649,194	450,255	344,634	186,890	418,478	5,203,516
OSTTIROL	AT 333		2006	161,584	177,572	135,294	52,883	33,882	94,418	187,003	224,083	122,650	43,355	9,557	76,522	1,318,603
TIROLER OBERLAND	AT 334		2006	1,469,201	1,596,518	1,507,273	913,452	129,850	339,962	753,310	826,730	447,084	263,253	163,756	898,368	9,308,556
TIROLER UNTERLAND	AT 335		2006	2,004,991	2,251,387	1,672,801	613,931	532,720	953,683	1,474,424	1,618,682	1,195,796	680,925	225,247	991,736	14,216,323
Corridor:Brenner TYR: Non Commercial																
AUSSERFERN	AT 331		1990	50,687	81,751	73,385	27,505	18,789	45,690	114,498	138,746	83,356	22,738	3,744	38,912	699,801
INNSBRUCK	AT 332		1990	87,809	126,993	119,959	71,630	26,195	57,141	146,726	190,184	115,860	32,102	16,834	81,320	1,072,753
OSTTIROL	AT 333		1990	18,826	32,792	27,958	17,824	8,757	42,332	130,588	174,476	96,219	14,690	1,864	24,478	590,804
TIROLER OBERLAND	AT 334		1990	187,733	280,646	328,777	168,596	28,838	66,763	200,350	238,392	115,848	32,671	22,815	149,693	1,821,122
TIROLER UNTERLAND	AT 335		1990	341,040	537,984	381,394	134,940	95,182	237,827	568,005	665,225	376,352	112,480	22,060	276,353	3,768,842
AUSSERFERN	AT 331		1995	55,449	83,080	50,500	15,696	12,817	35,808	76,492	94,097	51,392	17,661	2,003	35,813	530,808
INNSBRUCK	AT 332		1995	81,678	112,971	80,560	48,726	21,614	45,154	111,358	123,023	64,828	22,293	13,093	61,217	786,515
OSTTIROL	AT 333		1995	23,274	33,548	19,180	12,672	6,446	33,503	99,030	126,147	54,570	7,818	796	16,283	433,267
TIROLER OBERLAND	AT 334		1995	228,251	285,002	243,891	144,618	22,699	62,130	174,162	177,153	74,526	27,799	10,904	123,244	1,574,379
TIROLER UNTERLAND	AT 335		1995	326,804	474,268	238,484	90,469	69,366	173,346	396,295	420,187	233,495	70,584	15,441	194,848	2,703,587
AUSSERFERN	AT 331		2000	113,560	135,435	111,615	23,776	14,752	54,593	102,102	124,247	73,897	34,050	3,095	66,636	857,758
INNSBRUCK	AT 332		2000	177,635	206,509	154,009	86,257	27,897	64,947	153,132	189,254	97,139	44,008	28,941	132,307	1,362,035
OSTTIROL	AT 333		2000	46,818	62,881	37,939	20,160	7,548	36,244	115,380	153,475	67,293	9,974	1,774	43,136	602,622
TIROLER OBERLAND	AT 334		2000	440,663	470,135	493,627	231,233	28,472	74,707	226,519	255,336	98,075	41,137	23,953	293,983	2,677,840
TIROLER UNTERLAND	AT 335		2000	622,313	768,848	523,690	141,519	74,822	212,485	497,240	565,592	276,948	107,901	29,421	373,600	4,194,379
AUSSERFERN	AT 331		2001	112,888	150,749	93,377	26,377	17,294	46,442	105,366	129,953	65,757	29,617	3,892	73,455	852,167
INNSBRUCK	AT 332		2001	175,002	222,038	141,848	86,985	30,355	62,545	149,736	187,227	78,164	50,564	32,621	128,729	1,345,814
OSTTIROL	AT 333		2001	48,933	70,119	36,022	23,557	7,416	37,043	114,667	151,852	59,747	13,317	1,664	42,374	606,701
TIROLER OBERLAND	AT 334		2001	453,904	549,770	484,522	283,706	30,889	66,240	220,500	233,312	82,189	40,553	25,503	297,971	2,769,059
TIROLER UNTERLAND	AT 335		2001	607,917	831,150	480,798	159,995	83,322	191,004	489,951	554,578	241,825	116,233	33,879	391,489	4,182,141
AUSSERFERN	AT 331		2002	107,290	162,649	89,656	16,238	28,969	43,929	104,180	128,331	70,467	27,769	2,692	75,109	857,279
INNSBRUCK	AT 332		2002	160,027	241,188	167,740	53,319	39,064	55,148	155,364	193,753	83,474	53,901	36,402	133,917	1,373,297
OSTTIROL	AT 333		2002	37,359	67,782	45,407	9,143	10,363	32,210	113,496	153,065	59,961	12,158	1,362	46,679	588,985

TIROLER OBERLAND	AT 334		2002	430,616	602,550	580,606	164,583	37,254	62,339	211,840	238,617	83,375	45,454	30,097	325,746	2,811,077
TIROLER UNTERLAND	AT 335		2002	613,099	920,614	543,366	99,660	116,838	186,049	489,968	571,702	256,982	119,780	32,628	402,804	4,353,490
AUSSERFERN	AT 331		2003	94,047	133,441	105,520	24,345	18,709	55,672	87,087	149,148	71,834	24,172	2,887	65,923	832,785
INNSBRUCK	AT 332		2003	166,403	217,287	162,509	90,158	30,553	62,361	128,159	201,533	81,214	43,678	34,709	129,400	1,347,964
OSTTIROL	AT 333		2003	46,346	64,806	48,668	19,111	7,973	40,848	104,971	159,718	58,401	10,099	3,382	46,320	610,643
TIROLER OBERLAND	AT 334		2003	471,196	549,564	534,216	251,076	39,476	73,563	197,618	260,023	87,705	42,047	31,721	316,439	2,854,644
TIROLER UNTERLAND	AT 335		2003	601,440	876,486	569,869	161,282	86,808	209,177	426,196	628,397	256,186	104,699	32,792	381,888	4,335,220
AUSSERFERN	AT 331		2004	96,269	161,223	76,651	30,264	21,881	46,262	87,400	135,854	67,204	19,646	3,707	54,012	800,373
INNSBRUCK	AT 332		2004	153,450	242,744	137,981	85,274	30,854	56,303	123,232	194,081	76,548	47,304	35,673	108,771	1,292,015
OSTTIROL	AT 333		2004	44,442	81,040	36,461	22,458	9,280	35,416	104,578	154,714	54,351	9,624	2,313	34,536	589,213
TIROLER OBERLAND	AT 334		2004	447,901	610,874	487,045	270,997	39,613	64,067	187,727	252,696	87,840	45,169	34,335	259,938	2,788,202
TIROLER UNTERLAND	AT 335		2004	595,571	975,301	494,077	189,804	94,339	182,546	407,743	574,139	238,635	93,202	33,746	324,467	4,203,570
AUSSERFERN	AT 331		2005	105,358	159,979	110,561	8,450	24,471	38,786	89,456	123,331	63,967	22,888	4,606	60,077	811,930
INNSBRUCK	AT 332		2005	176,442	219,369	172,800	39,318	34,782	46,365	124,058	183,706	71,060	44,642	33,472	107,827	1,253,841
OSTTIROL	AT 333		2005	52,290	69,608	53,547	4,874	11,428	31,632	103,269	150,546	55,059	9,356	1,874	34,382	577,865
TIROLER OBERLAND	AT 334		2005	502,489	613,872	640,600	123,475	33,614	53,926	186,661	231,304	70,177	42,729	30,556	247,404	2,776,807
TIROLER UNTERLAND	AT 335		2005	717,984	947,096	741,393	66,027	108,952	158,634	423,358	569,535	238,145	100,713	35,150	348,109	4,455,096
AUSSERFERN	AT 331		2006	107,427	148,516	88,039	25,288	16,590	44,036	89,368	108,000	69,987	25,656	6,723	56,848	786,478
INNSBRUCK	AT 332		2006	155,586	203,270	131,932	87,309	28,262	50,035	118,930	164,839	73,751	43,913	30,237	110,565	1,198,629
OSTTIROL	AT 333		2006	46,086	64,080	36,198	17,724	7,982	32,532	99,456	133,415	52,944	10,546	2,011	33,461	536,435
TIROLER OBERLAND	AT 334		2006	447,482	574,001	483,451	257,690	30,557	57,115	168,862	197,472	73,545	35,710	23,248	262,179	2,611,312
TIROLER UNTERLAND	AT 335		2006	697,792	959,319	594,295	187,313	73,176	172,110	401,936	485,161	253,459	102,294	36,222	360,139	4,323,216
Corridor: Brenner S_TYR: Commercial																
Bolzano-Bozen	ITD10		1990	1,007,107	1,299,137	1,259,341	1,118,143	890,620	1,345,847	2,477,244	3,537,944	2,280,845	1,532,358	293,250	826,313	17,868,149
Bolzano-Bozen	ITD10		1995	1,694,984	1,776,307	1,437,179	1,309,378	1,094,749	1,564,777	2,704,841	3,731,448	2,342,473	1,598,669	294,066	877,691	20,426,562
Bolzano-Bozen	ITD10		2000	1,769,949	1,664,662	1,431,457	1,041,100	921,403	1,417,241	2,402,411	3,321,682	2,153,400	1,420,150	290,173	1,087,406	18,921,034
Bolzano-Bozen	ITD10		2001	1,807,859	1,931,234	1,465,773	1,134,688	962,057	1,472,956	2,448,938	3,447,696	2,172,983	1,497,060	352,249	1,117,306	19,810,799
Bolzano-Bozen	ITD10		2002	1,705,569	1,925,080	1,789,682	891,654	1,203,939	1,494,328	2,520,948	3,560,016	2,190,649	1,579,048	329,959	1,162,320	20,353,192

Bolzano-Bozen	ITD10		2003	1,868,463	1,888,013	1,714,670	1,131,231	1,093,580	1,636,996	2,458,038	3,688,718	2,171,794	1,482,460	301,703	1,290,187	20,715,853
Bolzano-Bozen	ITD10		2004	1,966,724	2,156,259	1,605,672	1,170,554	1,098,288	1,538,141	2,488,001	3,593,020	2,179,930	1,430,246	341,622	1,190,391	20,758,848
Bolzano-Bozen	ITD10		2005	2,137,045	2,041,152	2,096,571	716,689	1,191,592	1,442,973	2,535,450	3,634,086	2,177,903	1,466,354	337,202	1,299,517	21,076,534
Bolzano-Bozen	ITD10		2006	2,043,077	1,974,346	1,756,314	1,161,017	1,067,795	1,651,500	2,607,248	3,556,966	2,246,618	1,511,760	353,190	1,390,501	21,320,332
Corridor: Brenner S_TYR: Non Commercial																
Bolzano-Bozen	ITD10		1990	252,085	321,202	295,770	292,343	186,351	336,476	897,872	1,406,248	677,089	353,534	64,518	215,509	5,298,997
Bolzano-Bozen	ITD10		1995	364,119	412,880	281,422	303,388	213,065	367,817	951,417	1,401,957	647,671	344,674	57,077	228,009	5,573,476
Bolzano-Bozen	ITD10		2000	386,485	362,096	267,853	219,893	150,812	308,260	781,229	1,174,066	528,359	253,591	43,480	252,541	4,728,665
Bolzano-Bozen	ITD10		2001	382,443	440,052	260,266	229,370	170,466	313,397	794,765	1,201,821	513,959	272,656	51,822	257,254	4,888,271
Bolzano-Bozen	ITD10		2002	338,400	418,656	336,273	154,864	237,287	294,024	813,294	1,222,827	523,088	297,538	49,184	269,637	4,955,072
Bolzano-Bozen	ITD10		2003	373,763	402,808	306,018	230,656	179,309	349,216	763,625	1,259,936	507,114	255,282	41,132	291,896	4,960,755
Bolzano-Bozen	ITD10		2004	394,457	476,001	247,189	230,400	203,939	315,418	772,740	1,247,531	513,892	245,638	45,290	246,851	4,939,346
Bolzano-Bozen	ITD10		2005	450,187	438,478	381,935	105,905	251,020	286,297	808,399	1,264,249	515,545	257,263	49,359	265,653	5,074,290
Bolzano-Bozen	ITD10		2006	417,762	404,012	286,068	217,274	202,054	374,789	826,544	1,223,018	536,099	275,280	48,469	286,356	5,097,725
Corridor: Mont Blanc VDA: Commercial + Non Commercial																
VALLE D'AOSTA	ITC20		1990	x	x	x	x	x	x	x	x	x	x	x	x	5404664
VALLE D'AOSTA	ITC20		1995	x	x	x	x	x	x	x	x	x	x	x	x	3535016
VALLE D'AOSTA	ITC20		2000	x	x	x	x	x	x	x	x	x	x	x	x	3173334
VALLE D'AOSTA	ITC20		2001	x	x	x	x	x	x	x	x	x	x	x	x	3238550
VALLE D'AOSTA	ITC20		2002	339473	400765	397254	182723	90922	150495	512677	726928	131184	63442	66499	242355	3304717
VALLE D'AOSTA	ITC20		2003	x	x	x	x	x	x	x	x	x	x	x	x	3483938
VALLE D'AOSTA	ITC20		2004	x	x	x	x	x	x	x	x	x	x	x	x	3198175
VALLE D'AOSTA	ITC20		2005	x	x	x	x	x	x	x	x	x	x	x	x	3188886
VALLE D'AOSTA	ITC20		2006	x	x	x	x	x	x	x	x	x	x	x	x	3250539
Corridor: Fréjus PI: Commercial																
TORINO			1990	x	x	x	x	x	x	x	x	x	x	x	x	
TORINO			1995	268891	262203	272293	167453	191207	183241	214004	180650	188376	188945	173672	174419	2,465,354
TORINO			2000	228436	231086	208799	166176	185773	177966	188450	153317	172509	196202	179144	169120	2,256,978

TORINO			2001	267054	285363	269569	175975	186947	176531	186155	147465	181691	185242	171054	172687	2,405,733
TORINO			2002	241016	246794	250427	186347	196944	169817	201626	142612	197019	212774	186670	188955	2,422,001
TORINO			2003	273846	300460	268642	194160	197233	191827	218439	153101	196410	204014	194938	187244	2,580,314
TORINO			2004	290595	315544	326034	240552	214450	189686	216861	168562	247671	310686	274540	197396	2,992,577
TORINO			2005	322352	362267	389889	303522	285936	241628	266323	237695	271260	297072	321453	299371	3,598,768
TORINO			2006	582677	696404	462526	266084	247279	231063	238321	169890	239207	253171	228164	271452	3,886,238
Corridor: Fréjus PI: Non Commercial																
TORINO			1990	x	x	x	x	x	x	x	x	x	x	x	x	
TORINO			1995	61218	55345	58380	53028	55004	53845	103213	120846	48686	56992	55311	57060	778,928
TORINO			2000	62562	64012	60713	62073	62760	61742	101226	105022	65412	59644	53571	55951	814,688
TORINO			2001	72527	78733	74749	73626	65553	78523	124301	117854	65189	65972	60447	63143	940,617
TORINO			2002	62085	67903	80698	66633	68046	77643	106707	117410	62625	61899	64053	60634	888,336
TORINO			2003	55704	70933	75563	81684	75458	88573	130544	142653	74592	69816	57425	58060	981,005
TORINO			2004	73199	70752	70969	65737	68263	77566	100151	141529	80207	60863	58514	77675	945,425
TORINO			2005	83523	84124	112819	97509	98058	102465	114712	140040	80945	96655	83390	91391	1,185,631
TORINO			2006	137271	202469	116647	70632	79065	85880	110063	121700	72467	65522	54332	97465	1,213,513

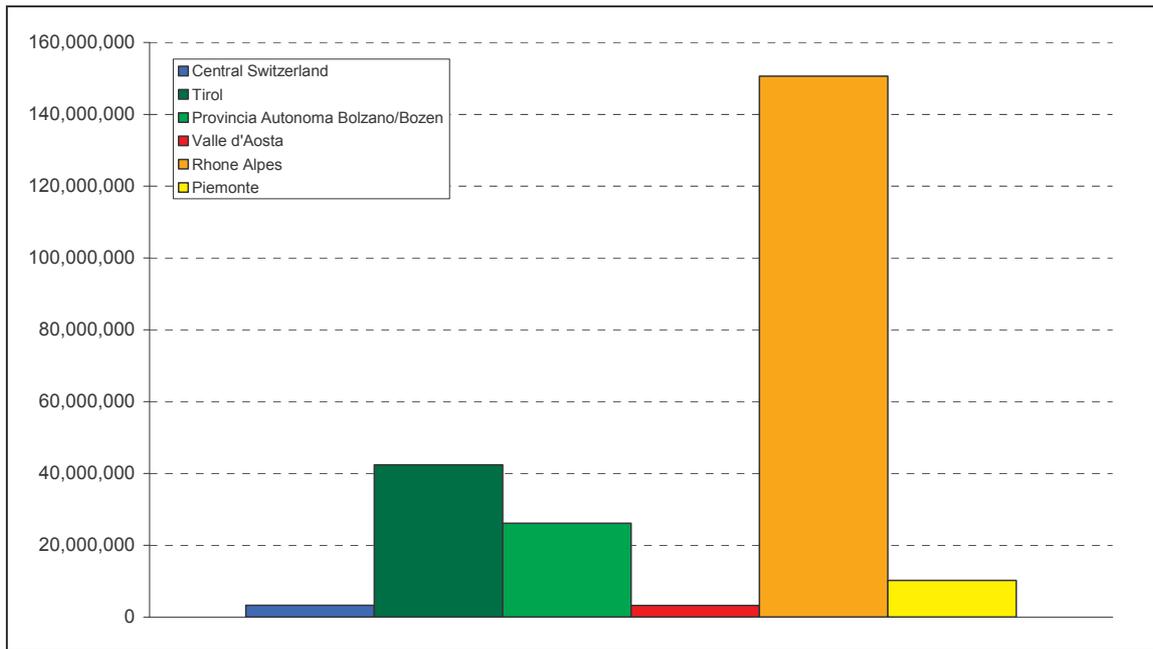


Figure 37: IND. 23 - overnight stays in 2005 in the MONITRAF regions (NUTS 3)

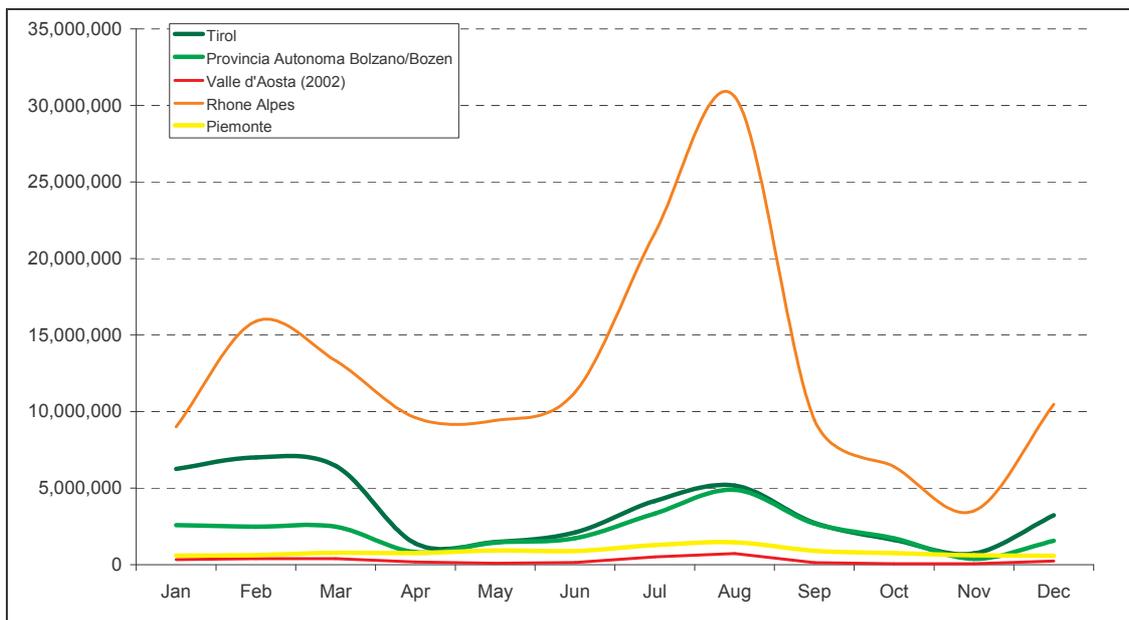


Figure 38: IND. 23 - overnight stays monthly trend in 2005 in the MONITRAF regions (NUTS 3)

The country with the highest number of overnight stays is Rhône-Alpes which, despite it has a rather low number of beds in relation to its inhabitants, has very high absolute values as already highlighted by indicator 22

The data clearly show double seasonality, and yet they suggest that the period with the highest frequency is the summer for Rhône-Alpes and South Tyrol and the winter for Tyrol; seasonality on the other hand, does not lead to peaks in Piedmont. The Aosta valley data, which are only referred to 2002, suggest marked double seasonality with a peak in the summer.

Indicator:				Migration balance	
Number:	24	Name:	Migration balance		
WP7 Codification:	806	Main category:	Society	Unit:	%
Level:	NUTS 5, NUTS 3, NUTS 2				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	Difference in terms of surplus or deficit between the number of registrations (immigration) and cancellations (emigration) at the registry office (population register), related to the number of inhabitants (indicator n°19), per year, for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				
Calculation:	((Number of immigrations - number of emigrations) / number of inhabitants) *100				
Data:					
Name:	Immigration	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of registrations (immigration) at the registry office (population register), for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				
Data source (citation basis):	<p>CS: Swiss Statistical Office, provisory, no data has been provided for NUTS 5, the data for NUTS 2 includes the Canton of Zug;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/; http://www.ti.ch/DFE/USTAT/DATI/superweb/default.asp;</p> <p>S-TYROL: ISTAT (National Statistical Institute of Italy), ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), figures derived from the population register;</p> <p>VDA: ISTAT data;</p> <p>RA: INSEE</p>				
Other Comments:	<p>CS: The NUTS 2 data includes the Canton of Zug;</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of registrations (immigration) at the registry office (population register);</p> <p>S-TYROL: Persons registered in the population register;</p> <p>RA: RM90MIG : Migrants are people whose permanent address on the 1 st January of the year of the past census was different from the permanent address they had at the moment of the census considered. Intermediate migrations are not taken into account.The children born between the 1st January of the year of the past census and the date of reference of the census considered are counted as migrants if the person of reference of the family unit is he/she himself/herself a migrant. For 2005 data only the variation by department is available.</p>				
Name:	Emigration	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of cancellations (emigration) at the registry office (population register), for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				

Data source (citation basis):	<p>CS: Swiss Statistical Office, provisory, no data has been provided for NUTS 5, the data for NUTS 2 includes the Canton of Zug;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/; http://www.ti.ch/DFE/USTAT/DATI/superweb/default.asp;</p> <p>S-TYROL: ISTAT (National Statistical Institute of Italy), ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), figures derived from the population register;</p> <p>VDA: ISTAT data;</p> <p>RA: INSEE</p>				
Other Comments:	<p>CS: The NUTS 2 data includes the Canton of Zug;</p> <p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of registrations (immigration) at the registry office (population register);</p> <p>S-TYROL: Persons registered in the population register;</p> <p>RA: RM90MIG : Migrants are people whose permanent address on the 1 st January of the year of the past census was different from the permanent address they had at the moment of the census considered. Intermediate migrations are not taken into account. The children born between the 1st January of the year of the past census and the date of reference of the census considered are counted as migrants if the person of reference of the family unit is he/she himself/herself a migrant. For 2005 data only the variation by department is available.</p>				
Name:	inhabitants	Unit:	number	Periodicity:	annual
Period:	2000-2006		Reference period:	1990, 1995	
Definition of data to be collected:	Number of inhabitants in the selected municipalities along the corridor (NUTS 5) and on level NUTS 3 and NUTS 2, derived from the population register				
Data source (citation basis):	(indicator n°19)				
Other Comments:	(indicator n°19)				

Data Quality

Altogether, the data sets are quite complete. Data on Central Switzerland are only available for NUT2 and 3 levels; the data on the French side only refer to the periods of the general censuses and the Piedmont data are not available

IND.24	INDICATORS-VALUES	Immigration NUT2	Immigratio n NUT3	Emigration NUT2	Emigration NUT3	Immigratio n NUT5	Emigratio n NUT5
CS	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	x	x
	detail scale *	1	5	1	5	0	0
	data completeness	89%	89%	89%	89%	0%	0%
TIC	data detail	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005
	detail scale *	1	1	1	1	168	168
	data completeness	78%	78%	78%	78%	78%	78%
TYR	data detail	2000-2005	2002-2005	2000-2005	2002-2005	2000-2005	2000-2005
	detail scale *	1	5	1	5	279	279
	data completeness	67%	45%	67%	45%	67%	67%
S_TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	1	1	116	116
	data completeness	100%	100%	100%	100%	100%	100%
VDA	data detail	1995, 2000-2006	1995, 2000-2006	1995, 2000-2006	1995, 2000-2006	1995, 2000-2005	1995, 2000-2005
	detail scale *	1	1	1	1	41	41
	data completeness	89%	89%	89%	89%	78%	78%
RA	data detail	x	1990, 1999	x	x	1990, 1999	x
	detail scale *	0	4	0	0	1131	0
	data completeness	0%	22%	0%	0%	22%	0%
PI	data detail	x	x	x	x	x	x
	detail scale *	0	0	0	0	0	0
	data completeness	0%	0%	0%	0%	0%	0%

* = NUTS number

Table 27: IND. 24 - migration balance per year in the MONITRAF regions (NUTS 2 and NUTS 3): absolute values

Number of immigrations - number of emigrations										
Corridor: Gotthard (Central Switzerland)										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	3002	441	724	2157	1358	849	1318	1238	x
Uri	CH062	-52	-184	-269	-246	-5	-101	-57	-16	x
Schwyz	CH063	1728	822	970	1734	1468	1072	650	921	x
Obwalden	CH064	339	159	73	270	238	86	-39	39	x
Nidwalden	CH065	328	257	199	435	260	224	250	229	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Central Switzerland	CH06									x
Corridor: Gotthard (side: Ticino)										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino*	CH07	x	2083	1290	1551	2639	2312	2627	2451	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino*	CH07	x	2083	1290	1551	2639	2312	2627	2451	nv
Corridor: Brenner TYR										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	x	x	x	x	75	-23	45	-108	x
Innsbruck	AT332	x	x	x	x	1545	1326	2068	2227	x
Osttirol	AT333	x	x	x	x	-298	-184	-69	-27	x
Tiroler Oberland	AT334	x	x	x	x	507	640	-197	449	x
Tiroler Unterland	AT335	x	x	x	x	1281	789	1287	1057	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TIROL	AT33	x	x	1950	3668	3110	2548	3134	3598	x
Corridor: Brenner S-TYR										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	226	808	949	948	2580	2848	3743	3857	3321
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	226	808	949	948	2580	2848	3743	3857	3321
Corridor: Mont Blanc VdA										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	nv	579	405	569	1591	1294	859	1255	826
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	nv	579	405	569	1591	1294	859	1255	826
Corridor: Mont Blanc FRANCE										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		x	x	x	x	x	x	x	x	x
73 - Savoie		x	x	x	x	x	x	x	x	x

NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes		x	x	x	x	x	x	x	x	x
Corridor: Fréjus FRANCE I										
NUTS 3 label	NUTS 3 code	1990	1995	1999	2001	2002	2003	2004	2005	2006
38 - Isère		x	x	x	x	x	x	x	x	x
73 - Savoie		x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS 2 Code	1990	1995	1999	2001	2002	2003	2004	2005	2006
Rhône-Alpes		x	x	x	x	x	x	x	x	x

Table 28: IND. 24 - migration balance per year in the MONITRAF regions (NUTS 2 and NUTS 3): percentage values

Migration Balance											
Corridor: Gotthard (Central Switzerland) Migration Balance											
NUTS 3 label	NUTS code	3	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061		0.94%	0.13%	0.21%	0.62%	0.39%	0.24%	0.37%	0.35%	x
Uri	CH062		- 0.15%	- 0.51%	- 0.76%	- 0.70%	- 0.01%	- 0.29%	-0.16%	- 0.05%	x
Schwyz	CH063		1.56%	0.67%	0.74%	1.32%	1.10%	0.79%	0.48%	0.67%	x
Obwalden	CH064		1.18%	0.51%	0.23%	0.83%	0.72%	0.26%	-0.12%	0.12%	x
Nidwalden	CH065		1.01%	0.70%	0.52%	1.13%	0.67%	0.57%	0.63%	0.58%	x
NUTS 2 Label	NUTS Code	2	1990	1995	2000	2001	2002	2003	2004	2005	2006
Central Switzerland	CH06		0.95%	0.43%	0.40%	0.77%	0.63%	0.42%	0.48%	0.46%	x
Corridor: Gotthard (side: Ticino) Migration Balance											
NUTS 3 label	NUTS code	3	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	Ticino		nv	0.68%	0.42%	0.50%	0.84%	0.73%	0.82%	0.76%	nv
NUTS 2 Label	NUTS Code	2	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	Ticino		nv	0.68%	0.42%	0.50%	0.84%	0.73%	0.82%	0.76%	nv
Corridor: Brenner TYR Migration Balance											
NUTS 3 label	NUTS code	3	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331						0.24%	- 0.07%	0.14%	- 0.34%	
Innsbruck	AT332						0.57%	0.49%	0.75%	0.80%	
Osttirol	AT333						- 0.59%	- 0.37%	-0.14%	- 0.05%	
Tiroler Oberland	AT334						0.52%	0.65%	-0.20%	0.45%	
Tiroler Unterland	AT335						0.55%	0.34%	0.55%	0.45%	
NUTS 2 Label	NUTS Code	2	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33				0.29%	0.54%	0.46%	0.37%	0.45%	0.52%	
Corridor: Brenner S-TYR Migration Balance											
Region (NUTS 3)	NUTS Code	3	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10		0.05%	0.18%	0.20%	0.21%	0.55%	0.60%	0.78%	0.80%	0.68%
Region (NUTS 2)	NUTS Code	2	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1		0.05%	0.18%	0.20%	0.21%	0.55%	0.60%	0.78%	0.80%	0.68%
Corridor: Mont Blanc VdA Migration Balance											

NUTS 3 label	NUTS code	3	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20		nv	0.49%	0.34%	0.48%	1.32%	1.06%	0.70%	1.01%	0.66%
Region (NUTS 2)	NUTS Code	2	1990	1995	2000	2001	2002	2003	2004	2005	2006
Regione Autonoma Valle d'Aosta	ITC2		nv	0.49%	0.34%	0.48%	1.32%	1.06%	0.70%	1.01%	0.66%
Corridor: Mont Blanc FRANCE Migration Balance											
NUTS 3 label	NUTS code	3	1990	1995	1999	2000	2001	2002	2003	2004	2005
74 - Haute Savoie		x	x	x	x	x	x	x	x	x	x
73 - Savoie		x	x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS Code	2	1990	1995	1999	2000	2001	2002	2003	2004	2005
Rhône-Alpes		x	x	x	x	x	x	x	x	x	x
Corridor: Mont Blanc FRANCE Migration Balance											
NUTS 3 label	NUTS code	3	1990	1995	1999	2000	2001	2002	2003	2004	2005
38 - Isère		x	x	x	x	x	x	x	x	x	x
73 - Savoie		x	x	x	x	x	x	x	x	x	x
NUTS 2 Label	NUTS Code	2	1990	1995	1999	2000	2001	2002	2003	2004	2005
Rhône-Alpes		x	x	x	x	x	x	x	x	x	x

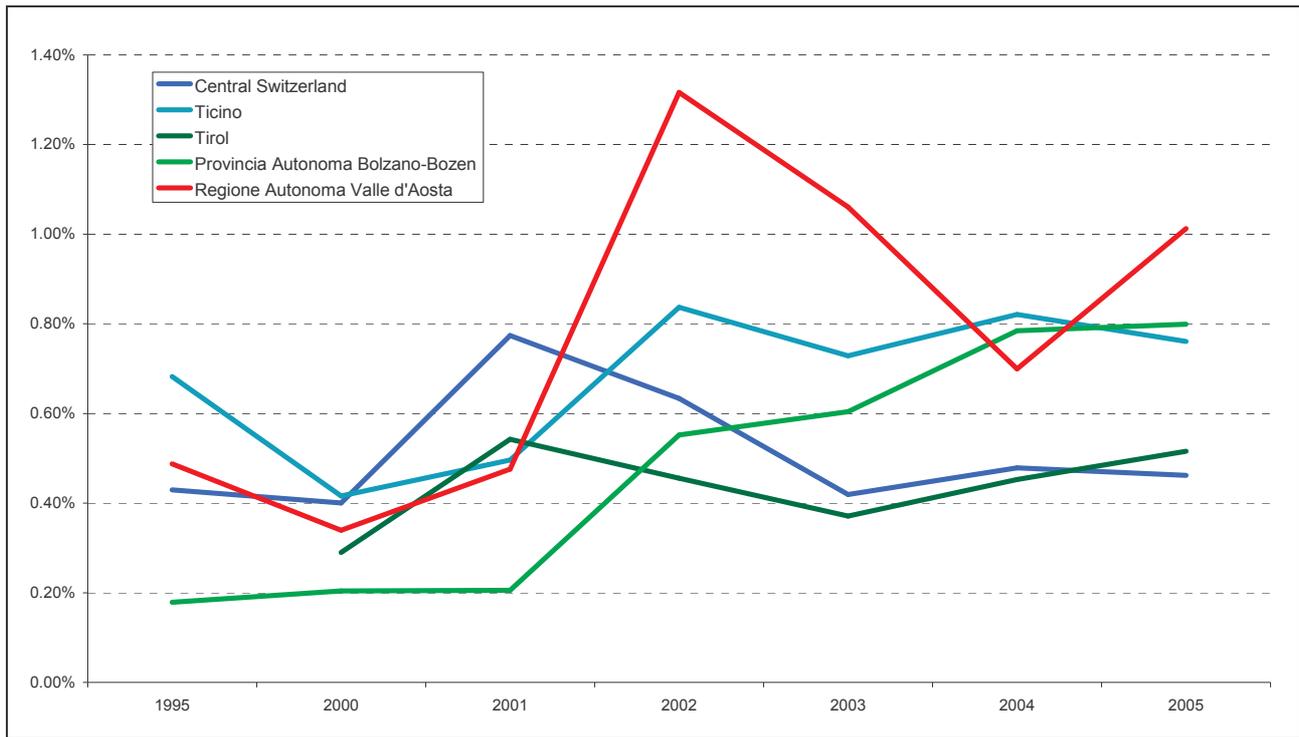


Figure 39: IND. 24 - migration balance per year in the MONITRAF regions (NUTS 3)

At NUTS2 level, the balance is constantly positive with a more marked increase along with time in Tyrol, South Tyrol and in the Aosta Valley; stability in the Swiss cantons. The French data do not allow to assess the trend.

At NUTS3 level there are situations with a negative balance, with prevalence of emigration over immigration in the Uri canton in Central Switzerland and in Osttirol in Tyrol.

Indicator:				Birth balance	
Number:	25	Name:	Birth balance		
WP7 Codification:	805	Main category:	Society	Unit:	%
Level:	NUTS 5, NUTS 3, NUTS 2				
Objective:	Description of the background situation and comparison of the regional development				
Definition of indicator:	Difference in terms of surplus or deficit between the number of births and the number of deaths, related to the number of inhabitants (indicator n° 19), per year, for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				
Calculation:	((Number of births - number of deaths / number of inhabitants) *100				
Data:					
Name:	Births	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of births, for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				
Data source (citation basis):	<p>CS: Swiss Statistics. Komponenten der Bevölkerungsentwicklung. Bilanz der ständigen Wohnbevölkerung.;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/; http://www.ti.ch/DFE/USTAT/DATI/superweb/default.asp;</p> <p>S-TYROL: ISTAT (National Statistical Institute of Italy), ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), figures derived from the population register;</p> <p>VDA: ISTAT data;</p> <p>RA: INSEE;</p> <p>PIEM: http://demo.istat.it/</p>				
Other Comments:	<p>TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of births;</p> <p>RA: data relating to years 1982, 1990, 1999 correspond to the data collected between the latest census and the date considered: for example, for year 1999 account is taken of the number of deaths between 1990 and 1999. Starting from year 2000, the data collected correspond to the number of deaths per year.</p>				
Name:	Deaths	Unit:	number	Periodicity:	annual
Period:	2000-2006	Reference period:	1990, 1995		
Definition of data to be collected:	Number of deaths, for the selected municipalities (NUTS 5) along the corridors and on level NUTS 3 and NUTS 2				
Data source (citation basis):	<p>CS: Swiss Statistics. Komponenten der Bevölkerungsentwicklung. Bilanz der ständigen Wohnbevölkerung.;</p> <p>TIC: USTAT-Ufficio di statistica, Viale S. Franscini 32, CH-6501 BELLINZONA, tel. +41 91 814 6411, http://www.ti.ch/DFE/USTAT/DATI_CANTONE/;</p>				

	http://www.ti.ch/DFE/USTAT/DATI/superweb/default.asp ; S-TYROL: ISTAT (National Statistical Institute of Italy), ASTAT (Statistical institute of the Autonomous province of Bolzano/Alto Adige), figures derived from the population register; VDA: ISTAT data; RA: INSEE; PIEM: http://demo.istat.it/				
Other Comments:	TIC: under each data-table is reported the code of the USTAT-table (or tables) used to derive the number of births; RA: data relating to years 1982, 1990, 1999 correspond to the data collected between the latest census and the date considered: for example, for year 1999 account is taken of the number of deaths between 1990 and 1999. Starting from year 2000, the data collected correspond to the number of deaths per year.				
Name:	Inhabitants	Unit:	number	Periodicity:	annual
Period:	2000-2006		Reference period:	1990, 1995	
Definition of data to be collected:	Number of inhabitants in the selected municipalities along the corridor (NUTS 5) and on level NUTS 3 and NUTS 2, derived from the population register				
Data source (citation basis):	(see indicator n°19)				
Other Comments:	(see indicator n°19)				

Data Quality

The data sets are quite complete. Data on Central Switzerland are only available at NUT2 level and the data on the French side only refer to one year.

	INDICATORS-VALUES						Birth - NUT5	Deaths - NUT5
CS	data detail	2000-2005	2000-2005	2000-2005	2000-2005	2000-2005	x	x
	detail scale *	1	5	1	1	5	0	0
	data completeness	67%	67%	67%	67%	67%	0%	0%
TIC	data detail	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005	1995, 2000-2005
	detail scale *	1	1	1	1	1	168	168
	data completeness	78%	78%	78%	78%	78%	78%	78%
TYR	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale *	1	5	1	1	5	279	279
	data completeness	89%	89%	89%	89%	89%	89%	89%
S_TYR	data detail	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006	1990, 1995, 2000-2006
	detail scale *	1	1	1	1	1	116	116
	data completeness	100%	100%	100%	100%	100%	100%	100%
VDA	data detail	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005	1990, 1995, 2000-2005
	detail scale *	1	1	1	1	1	41	41
	data completeness	89%	89%	89%	89%	89%	89%	89%
RA	data detail	2000-2005	2000-2005	2000-2005	2000-2005	2000-2005	2000-2005	2000-2005
	detail scale *	1	4	1	1	4	1131	1131
	data completeness	67%	67%	67%	67%	67%	67%	67%

PI	data detail	1995, 2000-2006	1995, 2000-2006	1995, 2000-2006	1995, 2000-2006	2002, 2004	2002, 2004
	detail scale *	1	1	1	1	37	37
	data completeness	89%	89%	89%	89%	22%	22%

* = NUTS number

Table 29: IND. 25 - births number per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Birth										
Corridor: Gotthard (Zentralschweiz)										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	*	*	3,894	3,468	3,535	3,436	3,478	3,436	*
Uri	CH062	*	*	413	346	368	336	350	315	*
Schwyz	CH063	*	*	1,577	1,366	1,432	1,525	1,512	1,462	*
Obwalden	CH064	*	*	378	339	323	319	341	304	*
Nidwalden	CH065	*	*	420	369	377	375	374	379	*
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	*	*	7,899	6,993	7,100	7,148	7,157	7,039	*
Corridor: Gotthard (side: Ticino)										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	3,060	3,057	2,715	2,904	2,734	2,753	2,784	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	3,060	3,057	2,715	2,904	2,734	2,753	2,784	nv
Corridor: Brenner TYR Births										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	354	390	303	302	295	270	271	298	
Innsbruck	AT332	2995	3001	2670	2558	2629	2631	2702	2655	
Osttirol	AT333	671	685	569	516	485	519	525	495	
Tiroler Oberland	AT334	1351	1365	1149	1080	1107	1033	1050	1105	
Tiroler Unterland	AT335	2827	2807	2460	2328	2459	2391	2490	2361	
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	8198	8248	7151	6784	6975	6844	7038	6914	
Corridor: Brenner S-TYR Births										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	5236	5189	5426	5469	5208	5388	5450	5525	5409
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	5236	5189	5426	5469	5208	5388	5450	5525	5409
Corridor: Mont Blanc VdA Births										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006

Valle d'Aosta	ITC20	1011	1002	1171	1112	1107	1151	1177	1161	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	1011	1002	1171	1112	1107	1151	1177	1161	nv
Corridor: Mont Blanc FRANCE Births										
NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		na	na	8866	8518	8674	8830	8746	8955	X
73 - Savoie		na	na	4761	4791	4660	4687	4736	4795	X
NUTS 2 Label	NUTS 2 Code	na	na	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	82919	82900	83022	83481	84387	85686	X
Corridor: Fréjus FRANCE Births										
NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
38 - Isère		na	na	14843	15236	14983	14885	15356	15447	X
73 - Savoie		na	na	4761	4791	4660	4687	4736	4795	X
NUTS 2 Label	NUTS 2 Code	na	na	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	82919	82900	83022	83481	84387	85686	X
Corridor: Fréjus PIEDMONT Births										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TORINO		x	17196	19036	18383	18985	19492	19970	19942	20,051
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
PIEMONTE		x	32841	35874	34857	35716	36370	37413	37251	37851

Table 30: IND. 25 - deaths number per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Deaths										
Corridor: Gotthard (Zentralschweiz)										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061	*	*	2,782	2,750	2,714	2,754	2,776	2,821	*
Uri	CH062	*	*	278	299	306	309	291	287	*
Schwyz	CH063	*	*	988	960	939	981	1,006	953	*
Obwalden	CH064	*	*	260	267	253	272	248	276	*
Nidwalden	CH065	*	*	240	255	254	259	251	256	*
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Zentralschweiz	CH06	*	*	5,248	5,185	5,138	5,265	5,232	5,281	*
Corridor: Gotthard (side: Ticino) Deaths										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	2,694	2,812	2,769	2,788	2,923	2,708	2,791	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	CH07	nv	2,694	2,812	2,769	2,788	2,923	2,708	2,791	nv
Corridor: Brenner TYR Deaths										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	259	230	255	221	212	262	225	221	
Innsbruck	AT332	2262	2208	2136	2148	2151	2156	2237	2157	
Osttirol	AT333	394	395	348	384	381	409	372	394	
Tiroler Oberland	AT334	690	621	627	642	615	651	605	696	
Tiroler Unterland	AT335	1615	1619	1700	1676	1641	1635	1612	1685	
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	5220	5073	5066	5071	5000	5113	5051	5153	
Corridor: Brenner S-TYR Deaths										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	3556	3489	3653	3603	3657	3939	3761	3799	3707
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	3556	3489	3653	3603	3657	3939	3761	3799	3707
Corridor: Mont Blanc VdA Deaths										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006

Valle d'Aosta	ITC20	1166	1222	1330	1278	1335	1314	1208	1306	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	1166	1222	1330	1278	1335	1314	1208	1306	nv
Corridor: Mont Blanc FRANCE Deaths										
NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		na	na	4425	4434	4564	4652	4390	4654	X
73 - Savoie		na	na	3222	3250	3140	3338	3083	3178	X
NUTS 2 Label	NUTS 2 Code	1990	1999	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	45724	45985	50240	51509	47544	49357	X
Corridor: Fréjus FRANCE Deaths										
NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
38 - Isère		na	na	7952	8079	8237	8288	7641	8010	X
73 - Savoie		na	na	3222	3250	3140	3338	3083	3178	X
NUTS 2 Label	NUTS 2 Code	1990	1999	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	45724	45985	50240	51509	47544	49357	X
Corridor: Fréjus PIEDMONT Deaths										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
TORINO		x	22338	22132	21102	21938	23585	21447	22416	22091
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
PIEMONTE		x	50095	48527	46840	48288	50625	46251	48253	47400

Table 31: IND. 25 - birth balance per year in the MONITRAF regions (NUTS 2 and NUTS 3)

Birth Balance										
Corridor: Gotthard (Central Switzerland) Birth Balance										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Luzern	CH061			0.32%	0.21%	0.23%	0.19%	0.20%	0.17%	x
Uri	CH062			0.38%	0.13%	0.18%	0.08%	0.17%	0.08%	x
Schwyz	CH063			0.45%	0.31%	0.37%	0.40%	0.37%	0.37%	x
Obwalden	CH064			0.36%	0.22%	0.21%	0.14%	0.28%	0.08%	x
Nidwalden	CH065			0.47%	0.30%	0.32%	0.30%	0.31%	0.31%	x
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Central Switzerland	CH06			0.39%	0.26%	0.28%	0.27%	0.27%	0.25%	x
Corridor: Gotthard (side: Ticino) Birth Balance										
NUTS 3 label	NUTS 3 label	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	Ticino	nv	0.12%	0.08%	-0.02%	0.04%	-0.06%	0.01%	0.00%	nv
NUTS 2 Label	NUTS 2 Label	1990	1995	2000	2001	2002	2003	2004	2005	2006
Ticino	Ticino	nv	0.12%	0.08%	-0.02%	0.04%	-0.06%	0.01%	0.00%	nv
Corridor: Brenner TYR Birth Balance										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Außerfern	AT331	0.32%	0.52%	0.15%	0.26%	0.26%	0.03%	0.14%	0.24%	
Innsbruck	AT332	0.29%	0.31%	0.20%	0.15%	0.18%	0.17%	0.17%	0.18%	
Osttirol	AT333	0.56%	0.57%	0.44%	0.26%	0.21%	0.22%	0.30%	0.20%	
Tiroler Oberland	AT334	0.76%	0.79%	0.54%	0.45%	0.50%	0.39%	0.45%	0.41%	
Tiroler Unterland	AT335	0.59%	0.54%	0.33%	0.29%	0.35%	0.33%	0.37%	0.29%	
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Tirol	AT33	0.48%	0.49%	0.31%	0.25%	0.29%	0.25%	0.29%	0.25%	
Corridor: Brenner S-TYR Birth Balance										
Region (NUTS 3)	NUTS 3 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Bolzano-Bozen	ITD10	0.38%	0.38%	0.38%	0.40%	0.33%	0.31%	0.35%	0.36%	0.35%
Region (NUTS 2)	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Provincia Autonoma Bolzano-Bozen	ITD1	0.38%	0.38%	0.38%	0.40%	0.33%	0.31%	0.35%	0.36%	0.35%
Corridor: Mont Blanc VdA Birth Balance										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC20	-0.13%	-0.19%	-0.13%	-0.14%	-0.19%	-0.13%	-0.03%	-0.12%	nv
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Valle d'Aosta	ITC2	-0.13%	-0.19%	-0.13%	-0.14%	-0.19%	-0.13%	-0.03%	-0.12%	nv
Corridor: Mont Blanc FRANCE Birth Balance										

NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
74 - Haute Savoie		na	na	0.70%						X
73 - Savoie		na	na	0.41%						X
NUTS 2 Label	NUTS 2 Code	1990	1999	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	0.66%						X
Corridor: Mont Blanc FRANCE Birth Balance										
NUTS 3 label	NUTS 3 code	1990	1999	2000	2001	2002	2003	2004	2005	2006
38 - Isère		na	na	0.63%						X
73 - Savoie		na	na	0.41%						X
NUTS 2 Label	NUTS 2 Code	1990	1999	2000	2001	2002	2003	2004	2005	2006
Rhône-Alpes		X	X	0.66%						X
Corridor: Fréjus PIEDMONT Birth Balance										
NUTS 3 label	NUTS 3 code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Torino		x	-0.23%	-0.14%	-0.13%	-0.14%	-0.19%	-0.07%	-0.11%	-0.09%
NUTS 2 Label	NUTS 2 Code	1990	1995	2000	2001	2002	2003	2004	2005	2006
Piemonte		x	-0.40%	-0.29%	-0.28%	-0.30%	-0.33%	-0.20%	-0.25%	-0.22%

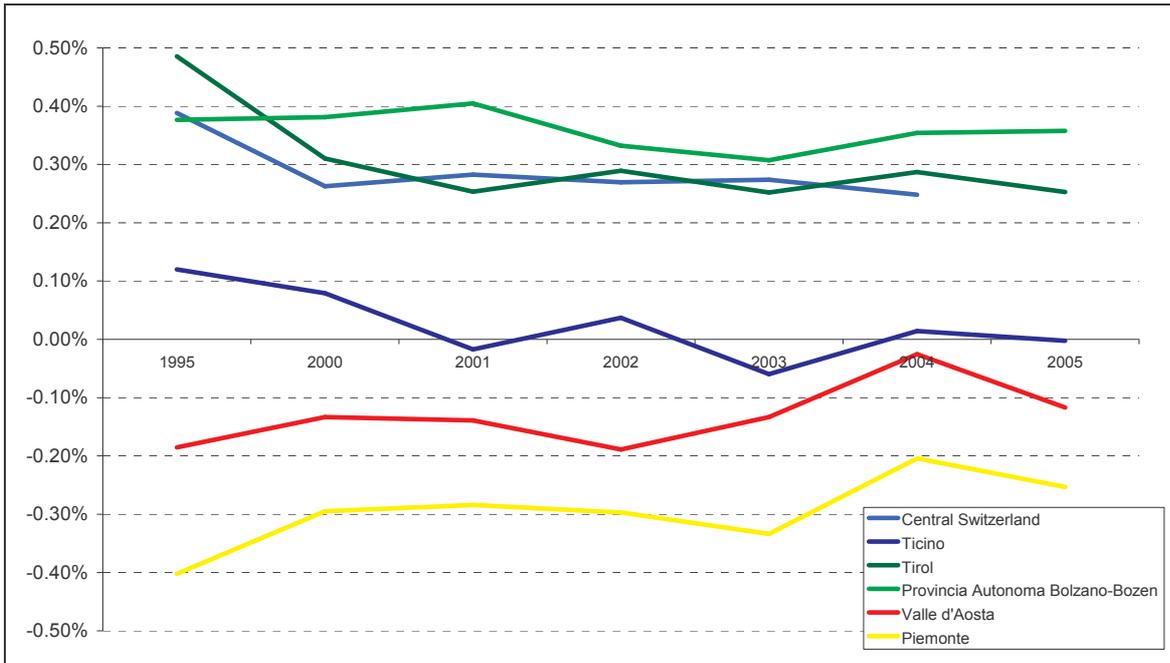


Figure 40: IND. 25 - birth balance per year in the MONITRAF regions (NUTS 2)

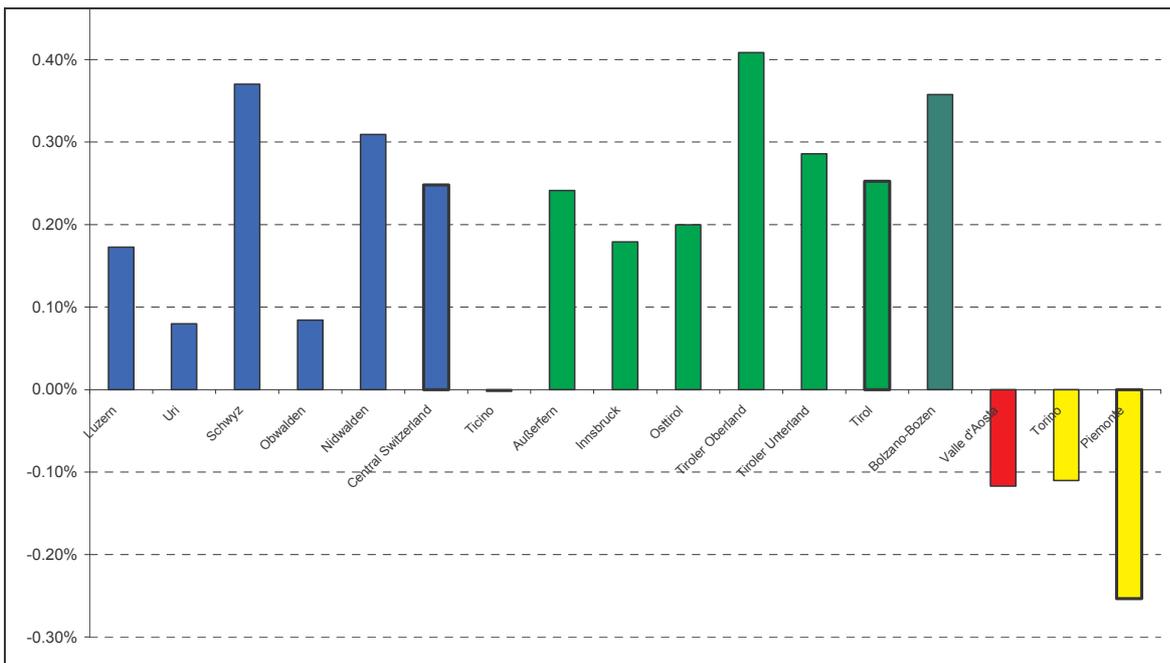


Figure 41: IND. 25 - birth balance on 2005 in the MONITRAF regions (NUTS 2 and NUTS 3)

The demographic balance at NUTS 2 level is negative, with a slight improvement in recent years in the western Italian regions; it is stable around 0 in Ticino and positive with a slightly declining trend in the western sector of the Monitraf countries.

This trend is confirmed also at NUTS 3 level. As regards Piedmont, the data on the Turin province are less negative if compared with the regional data. The liveliest provinces/cantons are Schwyz, Nidwalden, Tiroler Oberland and Bolzano.

PART TWO

SCENARIO ANALYSIS

INTRODUCTION

The careful analysis of the information inferred from the data contained in the first part of the report, has allowed us to depict the present situation and interpret the trends of the past decade. However, in order to better define the information, we must project the future scenarios of some of the most important aspects of across-the border vehicle traffic, taking into account the current technological evolution.

This represents an excellent opportunity, because the set of MONITRAF data – homogeneous data for the main transit corridors – allows for the development of scenarios for the entire Alpine arc, which can reveal the evolutionary trends of traffic and project their effects on the environment in 2025.

The main objective of scenario development is to focus on the effects traffic in the MONITRAF transit corridors has on the environment; for this purpose, measurements of pollutants caused by road transport emissions have been made.

In addition to this, the evaluation of environmental costs must take account of the mountains: emissions are proportional to road slope gradients, therefore having to drive over an Alpine pass implies higher emission rates if compared with the same distance travelled on flat ground.

Proper models on the environmental effects of concentrations of pollutants in the air and of noise levels, require very detailed data, together with a time schedule and computational tools which are not foreseen by this project. This is the work done by the Interreg ALPNAP, to which we suggest you refer to.

Data deriving from the elaboration of MONITRAF indicators and European traffic forecast data coming from the countries participating in the project, have been used to elaborate the scenarios herein.

The completeness and homogeneity of the data available and the impossibility to define certain options to be assessed with the scenarios, have conditioned the comprehensive nature of the information inferred from the scenarios that have been developed. And so it has been impossible to define scenarios that take into account parameters such as noise, because of the fragmentary nature of the basic data.

No account was taken of the hypothetical introduction of political options, such as the effects of modal shift from road to rail or the introduction of Transit Exchange, because of the lack of sufficiently reliable and complete input data, especially as regards the evaluation of resulting vehicle flows.

In these cases, the point is to develop new scenarios that are potentially useful for decision makers and technical engineers; an evolution of MONITRAF results, and more generally of transalpine sector studies, should be the collection and processing of sufficiently reliable information, allowing to develop scenarios on the opportunities for the environment and on the environmental sustainability of the various action options.

DESCRIPTION OF THE METHODOLOGY

There has been a dual approach to scenario development: on the one hand traffic flows have been taken into account, on the other the emissions resulting from the flows of traffic and the types of vehicles have been considered.

The following scenarios have been taken into account:

- **2005 Scenario:** it represents the present situation. It is based on traffic data collected and processed with MONITRAF indicators 1 - *Traffic volume all vehicles*, 2 - *Traffic volume heavy duty vehicles* and 3 - *Composition vehicle fleet*; year 2005 has been chosen as a reference since it is the most recent year with the most complete data.
- **BAU2025 Scenario:** is a scenario forecast which describes the results, in 2025, of the “natural” traffic trends, where account is taken of the technological evolution and the partial renewal of vehicle fleets, without considering the corrective measures foreseen because of the forecasted increase in traffic coming from the projections made on the Torino-Lyon corridor and those on the Gotthard relating to the entire Alpine arc. In the latter case, estimates are based solely on limits imposed by Swiss legislation on traffic flows. The scenarios do not yet take account of the launch of the newly planned rail infrastructure projects.

The study “Traffic development along the Brenner” - BBT – was not available for the survey of WP8.

- **BAT Scenario:** analyses the effects produced on emissions by the total renewal of the vehicle fleet, based on year 2005 vehicle flows; the reason for choosing 2005 and not 2025, is to check the improvement potential based on today’s best technical know-how. It is therefore assumed that the increase in heavy vehicles forecasted for 2025 will be absorbed by the increase in the transportation of freight via railway.

All three scenarios consider traffic and emissions data of both light and heavy duty vehicles.

For the first scenario the main data used were the MONITRAF indicators recorded in the database; in the case of the other two scenarios, the parameters used were the ones agreed with MONITRAF’s external partner: INFRAS, the research and consulting body on technical and environmental issues with Headquarters in Zurich.¹

For each of the three scenarios, vehicles were split into classes based on engine power ratings; an emission factor was assigned to each class. Then, emissions were calculated based on engine classes for the entire vehicle fleet and for monitored and forecasted traffic flows, in year 2005 and 2025 for each scenario.

To this we added the road slope gradient parameter, which allowed us to define the gap between emissions on level ground and emissions produced when travelling on mountain roads

¹ Luftschadstoff-Emissionen des Strassenverkehrs 1980-2030. [Émissions polluantes du trafic routier de 1980 à 2030]. [Pollutant emissions from road transport 1980-2030]. Schriftenreihe Umwelt Nr. 355. Swiss Agency for the Environment, Forests and Landscape / INFRAS, Bern.
http://www.hbefa.net/documents/sru_355_d.pdf [German]

Handbook Emission Factors for Road Transport. Swiss Agency for the Environment, Forests and Landscape / INFRAS, CD ROM, Bern.

[Manuel informatisé des coefficients d'émission du trafic routier MICET]

http://www.bafu.admin.ch/publikationen/index.html?lang=en&action=show_publ&id_thema=18&series=VU&nr_publ=5014

The main inputs for emissions calculations are:

1. Vehicle fleets circulating along MONITRAF corridors
2. Registered and foreseen traffic flows
3. Road slopes
4. Emission factors: essential for calculation

The 4 MONITRAF corridors were the object of analysis and the Ventimiglia and Tarvisio passes were used to benchmark emissions of heavy duty vehicles alone. The decision to also survey the two more external corridors of the Alpine arc was dictated by the fact that any eventual change in Alpine traffic could easily produce effects on the borders of the area analysed.

INPUT DATA

Data are processed by individual monitoring stations, as indicated by MONITRAF indicators 1 and 2, and by transit corridors.

The results are shown through a set of histograms which are particularly effective in comparing different corridors and scenarios.

The original data on traffic flows collected by Project Partners lack homogeneity because of different typology definitions and because of different subdivisions of light and heavy duty vehicle classes; simplification and data consistency were achieved when the indicators were processed. For the scenarios we therefore used standardised data.

For the definition of light and heavy duty vehicles please refer to indicators 1 and 2.

As to data on slopes, comparability was guaranteed by the fact that calculations on the various corridors were made following one single method, based on the gradients of the individual significant stretches that make up the corridors (a stretch being the distance between one motorway or a tunnel toll station and the other)

In the case of vehicle fleets and emission factors, comparability and consistency are guaranteed by the use of the same data processing methodology and the unique engine rating classes and emission factors.

Hereafter is a detailed analysis of the sets of data used to develop the scenarios.

1. *VEHICLE CIRCULATION*

In order to be able to estimate vehicle emissions, it is of utmost importance to know the distribution of vehicle fleets: the most recent engines produce lower emissions.

The original data are supplied by tunnel managers and are used for MONITRAF indicator n. 3 for heavy vehicles, year 2005; for light vehicles, INFRAS data – the Swiss Research Centre – are used. The estimated vehicle fleets are therefore the ones in transit solely along the four corridor passes which have been taken into account.

For the BAU 2025 Scenario the fleet projections give: 50% Euro 5 and 50% Euro6.

For the third BAT Scenario, the following assumptions were made:

All vehicles are Euro 6;

50% of light duty vehicles are diesel fuelled and 50% are petrol fuelled.

The highest foreseeable level of technology assumes the adoption of Euro 5 engines for heavy duty vehicles and Euro 4 for light duty vehicles, in that the emission factors for the higher classes are still to be defined.

For the Euro 6 option in the third scenario, INFRAS has calculated specific emission factors assuming a trend that starts off like the ones we now know of.

In the following diagram there is the subdivision, by engine power ratings, of heavy duty vehicles in 2005 along the various transalpine corridors. The last column shows a comparison between the situation in 2005 and the INFRAS forecast through to 2025 in the BAU scenario.

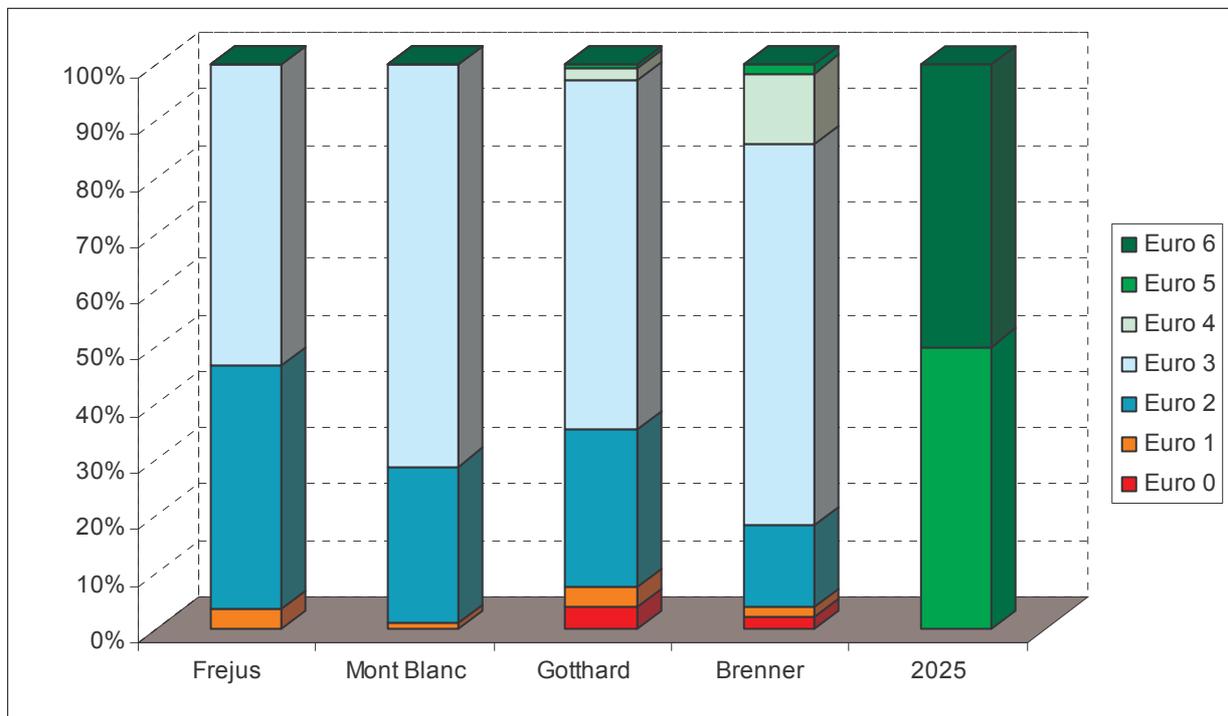


Figure 42: Vehicle fleet: Heavy Duty Vehicles per corridor in 2005 and forecast through to 2025

The most represented engine class is Euro 3; there are differences in the presence of other engine classes in the various corridors: Fréjus still records a strong presence of Euro 2, but Euro 0 vehicles are absent, since their transit is forbidden, as in the case at Mont Blanc; Brenner still records a small percentage of Euro 0 and 1 class vehicles, but it has a fairly good number of Euro 4 vehicles and is starting to record class Euro 5 ones, thus ranking first in terms of vehicle fleet quality among the four corridors. It would be interesting to compare these data with the length of the journeys made by the vehicles to check whether the better quality vehicle park is connected to longer distances covered for the transport of the goods.

The following graph compares the light vehicle fleet homogeneously applied to the four corridors in 2005 and the situation of the fleet in 2025, following foreseeable technological evolution, based on INFRAS estimates.

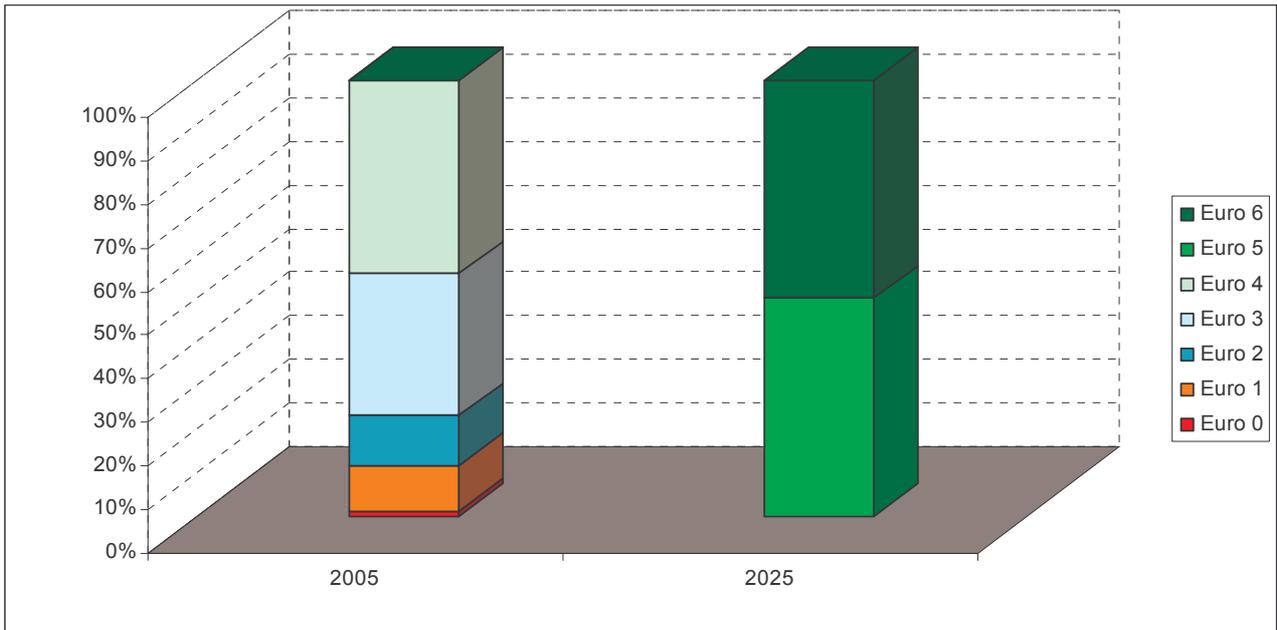


Figure 43: Vehicle fleet: Light Vehicles

From the two diagrams one gathers that in the year 2025 there will be a total renewal of the vehicles.

2. TRAFFIC FLOWS

The second data input needed for the development of the scenarios on road traffic concerns the flows of heavy and light vehicles transiting in the MONITRAF corridors.

Two data bases were examined:

For year 2005, the data collected by Project Partners in the stretches between traffic monitoring stations along the four corridors, and processed for MONITRAF indicators 1 and 2;

For year 2025, the estimates produced by the "Study on freight traffic – LTF Liason Lyon-Turin Ferroviaire (september 2006)".

The study was an anticipatory forecast on freight traffic flows along the Alpine arc which used the CAFT 2004 data bank as reference data. The results extrapolated referred to a BAU 2022 scenario, with a 1.8% growth in GDP per annum, with an evolution in tariffs, but without any new political measures taken on transport. The flows, estimated by corridors, were then disaggregated by road stretches as indicated by MONITRAF indicators and brought forward to al 2025, given that this is the year chosen as reference year for the forecast scenario.

The third traffic situation analysed was the one foreseen by the Swiss Government for the Gotthard corridor through to 2025, which estimates an admissible 5% increase in heavy vehicle traffic versus the situation of 2005.²

² Botschaft zur Güterverkehrsvorlage, 07.047, Schweizerischer Bundesrat, Bern, 08.06.2007
<http://www.admin.ch/ch/d/ff/2007/4377.pdf> [German]
 [Message sur le projet de législation concernant le transport de marchandises 07.047, Conseil fédéral suisse, Bern, 8 juin 2007]
<http://www.admin.ch/ch/f/ff/2007/4147.pdf> [French]

Future scenario estimates for light duty vehicles have been found from swiss data (+ 13%). This has meant increasing present day flows of light vehicles in developing the scenarios and considering their technological evolution.

The following diagrams show light and heavy vehicle flows in all the stretches of the MONITRAF corridors; the following average increases in heavy vehicle traffic are foreseen, per corridor, for 2025:

- +47% for Fréjus,
- +62% for Mont Blanc,
- +17% for Gotthard
- +74% for Brenner.

Flows of heavy vehicles at the Ventimiglia and Tarvisio passes are included. The LTF study estimates a 53% increase in traffic through Ventimiglia.

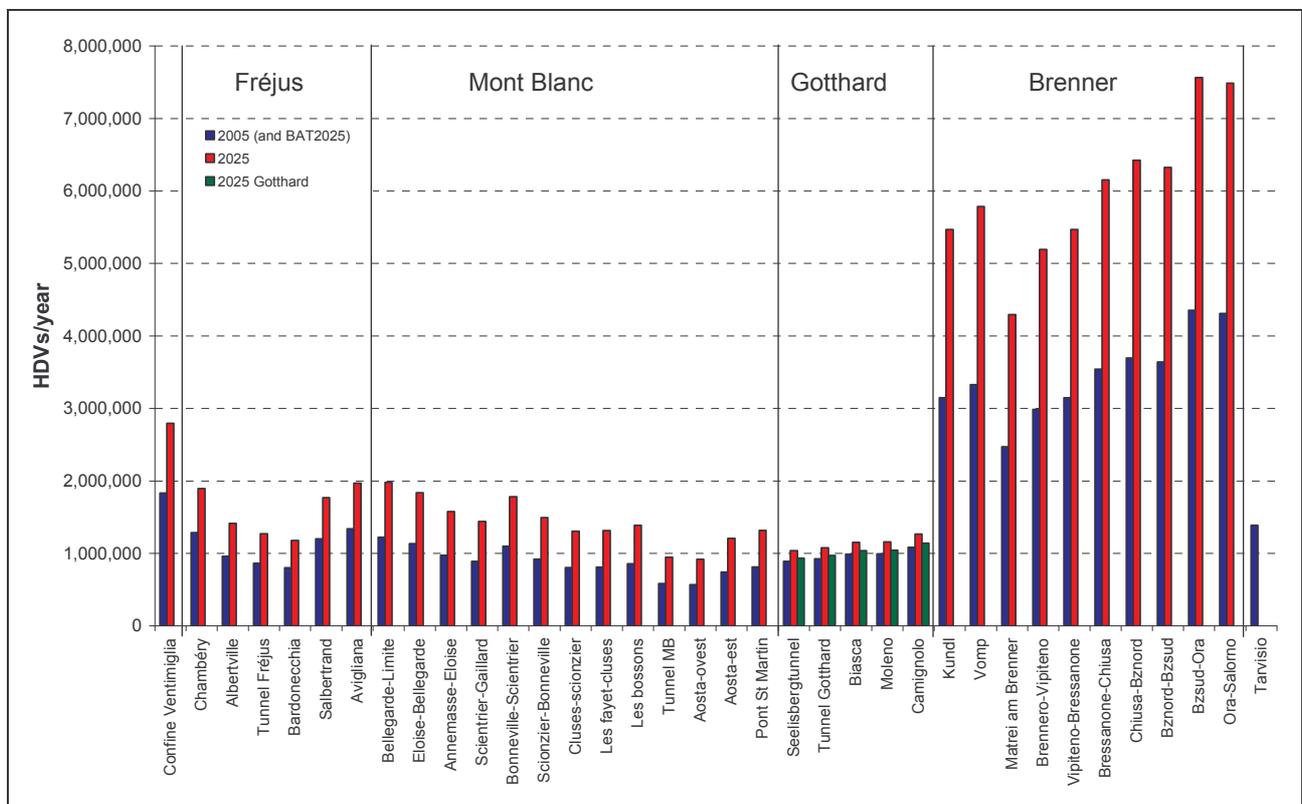


Figure 44: Vehicle flows: Heavy Duty Vehicles per road stretch

The percentage increment is especially high along the Mont Blanc and Brenner corridors, but in absolute terms the increase in traffic at the Brenner is much more significant, followed at a distance by Ventimiglia.

The following graph therefore, reports the actual situation in 2005, highlighting the importance of light duty traffic for the two central-western corridors, with a peak in the Austrian stretch of the Brenner, and the 2025 forecast (swiss data of + 13% for every corridor).

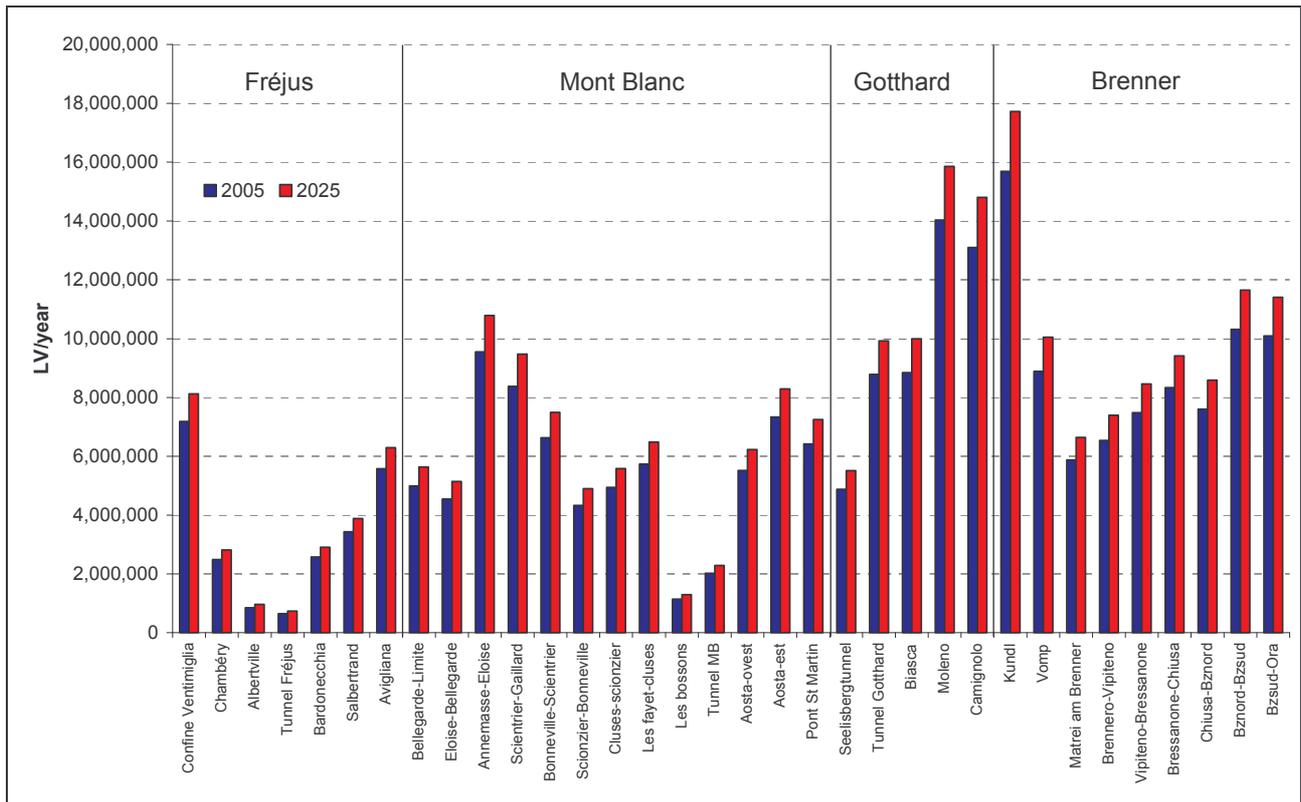


Figure 45: Vehicle flows: Light Vehicles per road stretch in 2005 and 2025.

3. SLOPE GRADIENTS ALONG ROAD STRETCHES

In addition to the indicators mentioned previously, Project Partners were asked to supply data on MONITRAF corridor road slope gradients. It has thus been possible to assess the increase in emissions due to the greater slope gradients, typical of Alpine regions. The following table shows road stretches with slope gradients (stretch being the distance between two monitoring stations)

Trafo Fréjus (French side)	2%
Aosta Est	2%
Trafo Mont Blanc (Italian side)	4%
Gotthard	0%
Matrei am Brenner	2%
Brennero-Vipiteno	4%
Bolzano Nord-Sud	2%

Slope gradients of road stretches expressed as a percentage

The corridors with the highest slope gradients are the Mont Blanc, along the Aosta Valley stretch, and the Brenner. The slope gradient along the Piedmont motorway in the Fréjus is 2% and in the Gotthard road stretch the slope is 0%.

4. EMISSION FACTORS

Emission factors allow to calculate emissions for each polluting substance, once known vehicle flows and their typology. These multiplying factors are expressed in g/km*vehicle and come from the “Handbook Emission Factors for Road Transport, version 2.1, February 2004, INFRAS. Editor: Swiss Agency for the Environment, Forests and Landscape, Bern”.

The emission factors considered are the ones related to the polluting substances most strictly connected to road traffic: Nitrogen Oxide (NOx), Carbon Dioxide (CO2) and PM10 dust. PM10 dust factors include resuspension equivalent to 0,047 g/km*vehicle for light vehicles and 0,074 g/km*vehicle for heavy vehicles.

The following tables show these factors for the three scenarios considered; in 2025 the increases in emissions are mainly due to the ageing of the vehicles; for the BAT scenario, emission factors for class Euro 6 were developed by applying correction coefficients to Euro 4 emission factors for light vehicles and Euro 5 emission factors for heavy duty vehicles.

It is clear from the table, that emissions decline with technological progress.

FE (g/km*vehicles)	Fuel	Euro class	CO2	NOx	PM10
Light Vehicles	gasoline	conventional	254.59	2.78	0.05
	gasoline	Euro1	234.08	0.88	0.05
	gasoline	Euro2	231.72	0.22	0.05
	gasoline	Euro3	227.75	0.07	0.05
	gasoline	Euro4	225.25	0.04	0.05
	diesel	conventional	254.48	0.74	0.23
	diesel	Euro1	242.43	0.69	0.17
	diesel	Euro2	248.02	0.82	0.11
	diesel	Euro3	224.68	0.63	0.09
	diesel	Euro4	220.90	0.42	0.07
Heavy Duty Vehicles	diesel	Euro0	724.89	9.85	0.64
	diesel	Euro1	655.65	6.86	0.29
	diesel	Euro2	692.33	7.84	0.18
	diesel	Euro3	710.93	5.57	0.19
	diesel	Euro4	715.97	3.21	0.09

Emission factors per pollutant and vehicle class (scenario 2005)

FE (g/km*vehicles)	Fuel	Euro class	CO2	NOx	PM10
Light Vehicles	gasoline	conventional	253.17	2.83	0.05
	gasoline	Euro1	245.86	1.15	0.05
	gasoline	Euro2	245.12	0.34	0.05
	gasoline	Euro3	234.60	0.14	0.05
	gasoline	Euro4	208.64	0.06	0.05
	diesel	conventional	254.97	0.79	0.26
	diesel	Euro1	250.52	0.70	0.17
	diesel	Euro2	256.43	0.82	0.12
	diesel	Euro3	230.04	0.62	0.09
	diesel	Euro4	205.72	0.42	0.07
Heavy Duty Vehicles	diesel	Euro0	736.57	9.95	0.63
	diesel	Euro1	653.10	6.85	0.29
	diesel	Euro2	673.23	7.67	0.18
	diesel	Euro3	695.64	5.44	0.19
	diesel	Euro4	700.10	3.13	0.09
	diesel	Euro5	720.13	1.70	0.09

Emission factors per pollutant and vehicle class (2025)

BAU2025	CO2	NOx	PM10
LV diesel/Euro5	205.72	0.30	0.05
LV ess/Euro5	208.64	0.05	0.05
LV diesel-ess-mix/Euro6	207.18	0.11	0.06
HDV/Euro5	720.13	1.70	0.09
HDV/Euro6	720.13	0.85	0.09

Emission factors per pollutant and vehicle class (scenario BAU 2025)

delta EF	CO2	NOx	PM10 exhaust
LV diesel Euro6	1	0.47	0.87
LV essence Euro6	1	0.47	0.87
HDV Euro6	1	0.5	0.88

Correction coefficient for the calculation of Euro 6 Emission Factors

BAT 2025	CO2	NOx	PM10
LV	207.18	0.11	0.06
HDV	720.13	0.85	0.09

Emission factors per pollutant and vehicle class (BAT scenario)

DEVELOPMENT OF EMISSION SCENARIOS

Nitrogen Oxide, Carbon Dioxide and PM10 dust emissions are calculated from emission factors times vehicle flows for all roads stretches in the MONITRAF corridors.

1. 2005 SCENARIO

The following table shows, for year 2005:

- emission values in metric tons/kilometre per year in correspondence to the entry stations of the corridors and of the passes;
- the percentage contribution of heavy vehicles to total road emissions.

One can observe that for all corridors and all pollutants considered, absolute emission values are higher at the passes; this is mainly due to the fact that at the passes there are practically only transborder flows, whilst in the valleys there are also flows of local traffic. The observation is confirmed by the weight of heavy vehicles over total emissions, which increases markedly at the passes; this phenomenon is particularly evident in the case of CO₂ and PM10.

Furthermore, the Brenner corridor has the highest emissions in that it has the highest traffic flows.

Road stretch	CO ₂	NO _x	PM10	% HDV (CO ₂)	% HDV (NO _x)	% HDV (PM10)
Chambéry	2526	10.73	0.68	36%	79%	36%
Fréjus Tunnel	798	5.96	0.21	76%	96%	76%
Avigliana	1714	9.90	0.46	55%	89%	55%
Pont Saint Martin	2075	7.13	0.56	28%	71%	27%
Mont Blanc Tunnel	671	3.99	0.18	61%	91%	61%
Bellegarde	2120	9.33	0.57	41%	81%	40%
Camignolo	3938	11.14	1.07	19%	61%	20%
Gotthard	1754	7.26	0.48	37%	79%	38%
Reiden	4437	15.77	1.20	29%	72%	30%
Matrei am Brenner	3732	16.68	1.00	46%	83%	46%
Vomp	5864	23.63	1.57	40%	79%	39%
Brennero-Vipiteno	3411	18.65	0.91	61%	90%	60%
Ora-Salorno	5283	27.39	1.40	57%	88%	56%

Total traffic emissions and percentage weight of heavy vehicles at notable points of the

MONITRAF corridors (year 2005)

The following diagram shows heavy vehicle emissions of the three pollutants measured in correspondence of the four MONITRAF passes and of the Ventimiglia and Tarvisio passes. Please note that the emissions at the two outer passes are lower than those at the Brenner but higher than those at the three Alpine passes.

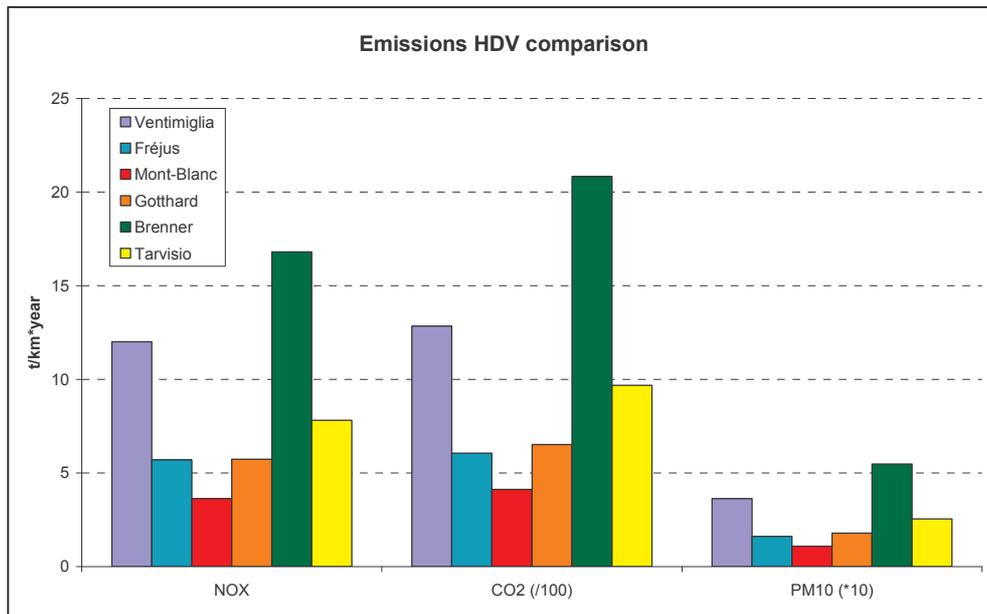


Figure 46: HDV emissions for Alpine corridors (year 2005)

The influence of slope in some stretches of the MONITRAF corridors is accounted for in the following diagrams on NOx and CO₂ emissions for heavy duty vehicles.

As regards NOx, for slope gradients of:

- 2% there are 7% more emissions compared with situations with flat roads
- 4% there are 63% more
- 6% there are 121% more

As regards CO₂, for slope gradients of:

- 2% there are 13% more emissions compared with situations with flat roads
- 4% there are 61% more
- 6% there are 115% more

For PM10s there are significant increases only in the case of gradients > 4%.

These increases in emissions can also be interpreted as there being an increase in traffic going through: in the following graphs you see the difference in emissions on slopes versus flat roads, expressed in terms of additional equivalent heavy vehicles. This evaluation isn't possible for the Gotthard with a 0% slope.

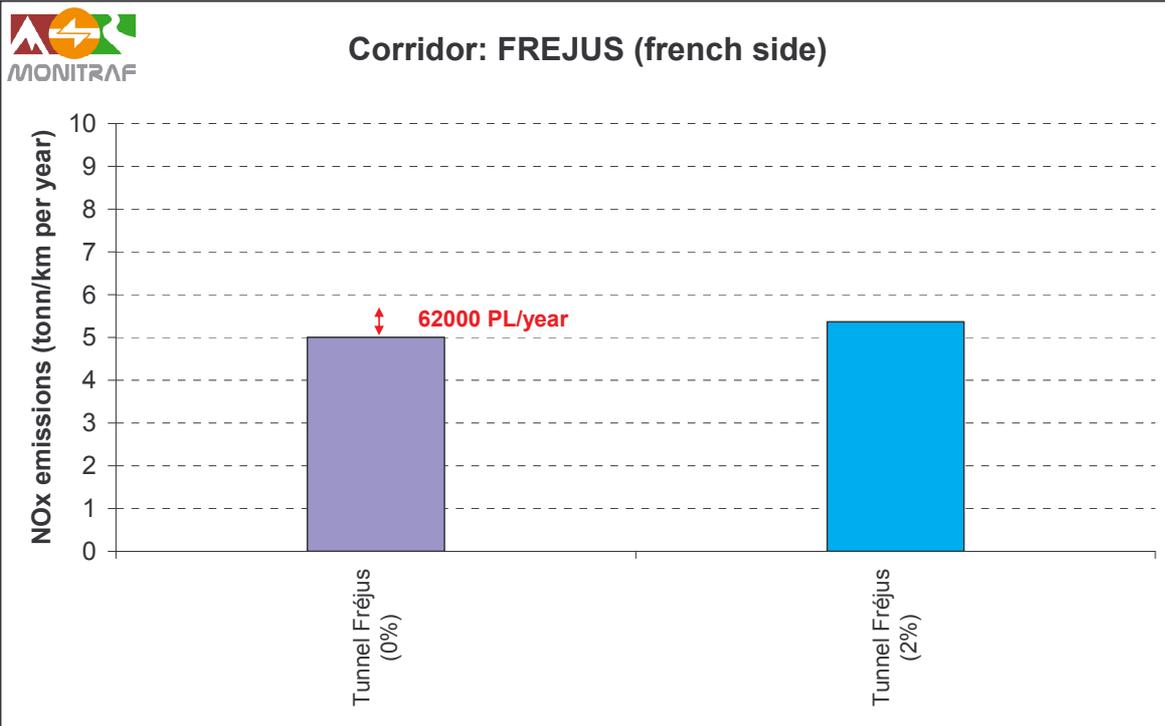


Figure 47: NOx emissions in the Fréjus corridor: slope effect (year 2005)

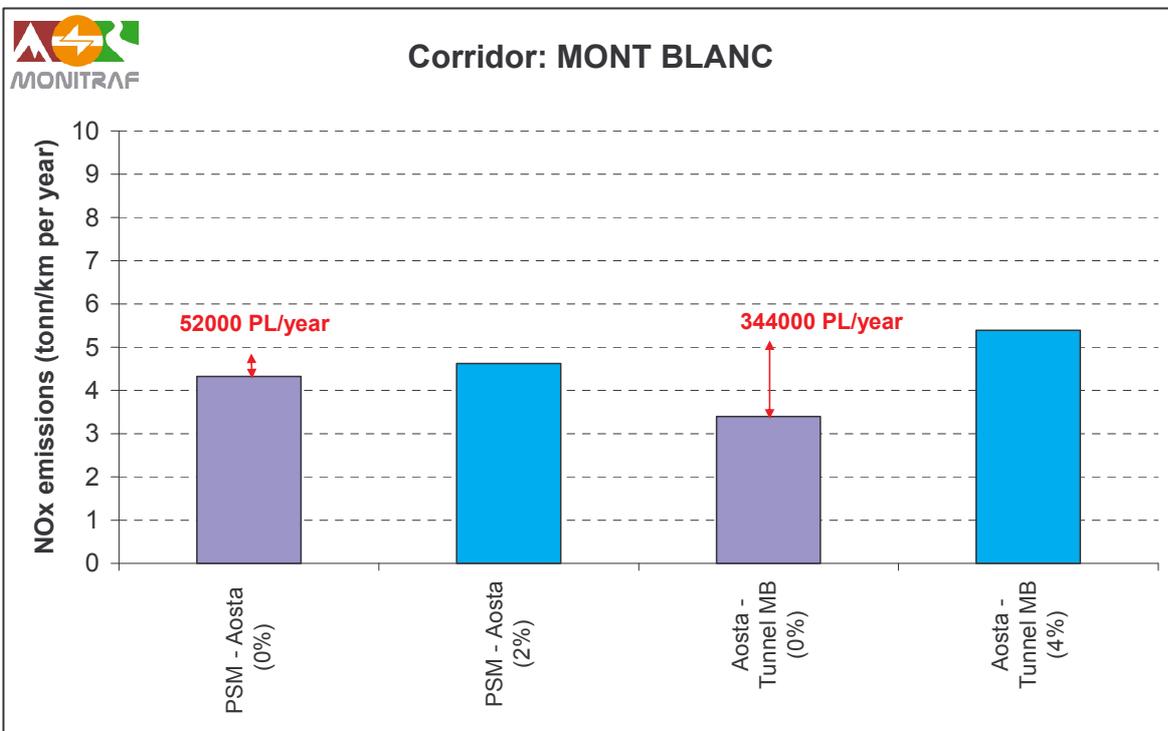


Figure 48: NOx emissions in the Mont Blanc corridor: slope effect (year 2005)

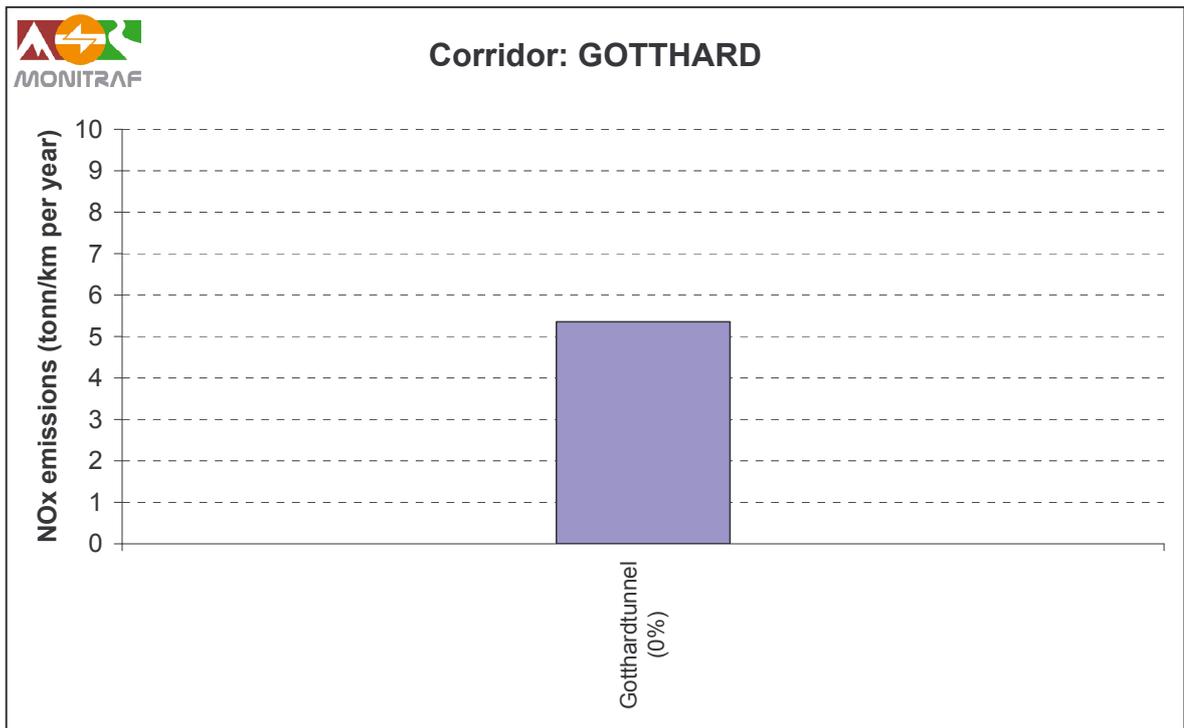


Figure 49: NOx emissions in the Gotthard corridor: slope effect (year 2005)

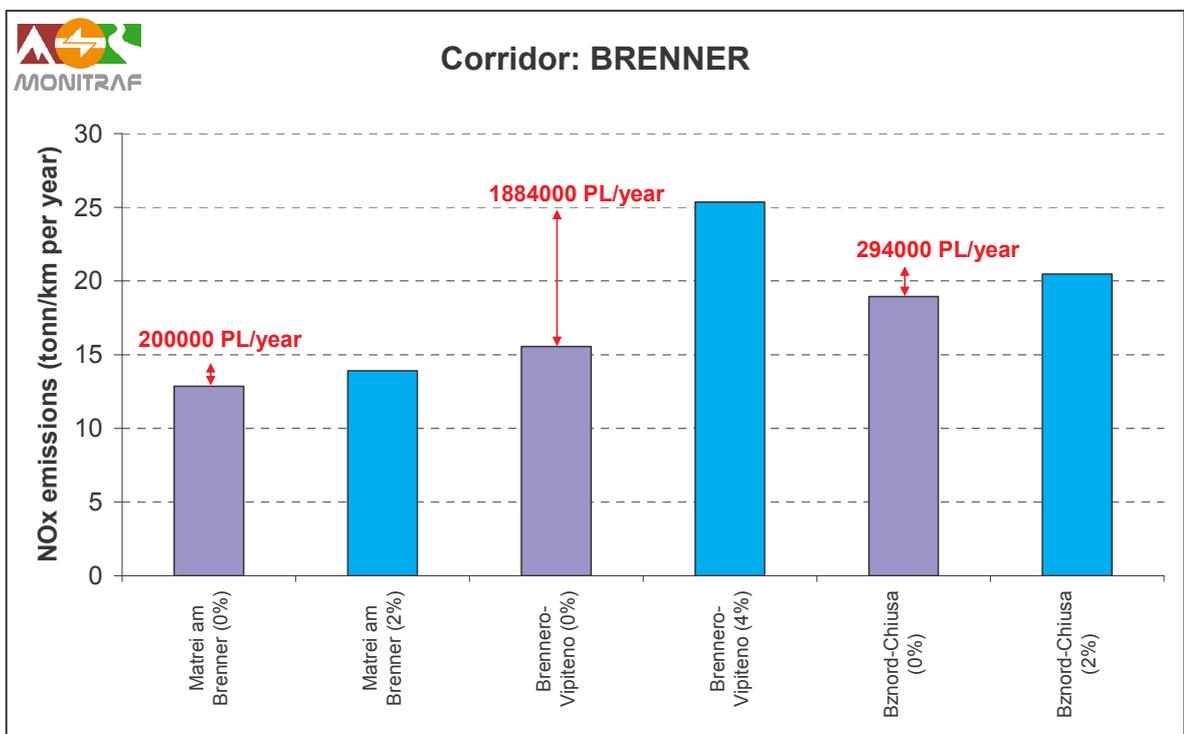


Figure 50: NOx emissions in the Brenner corridor: slope effect (year 2005)

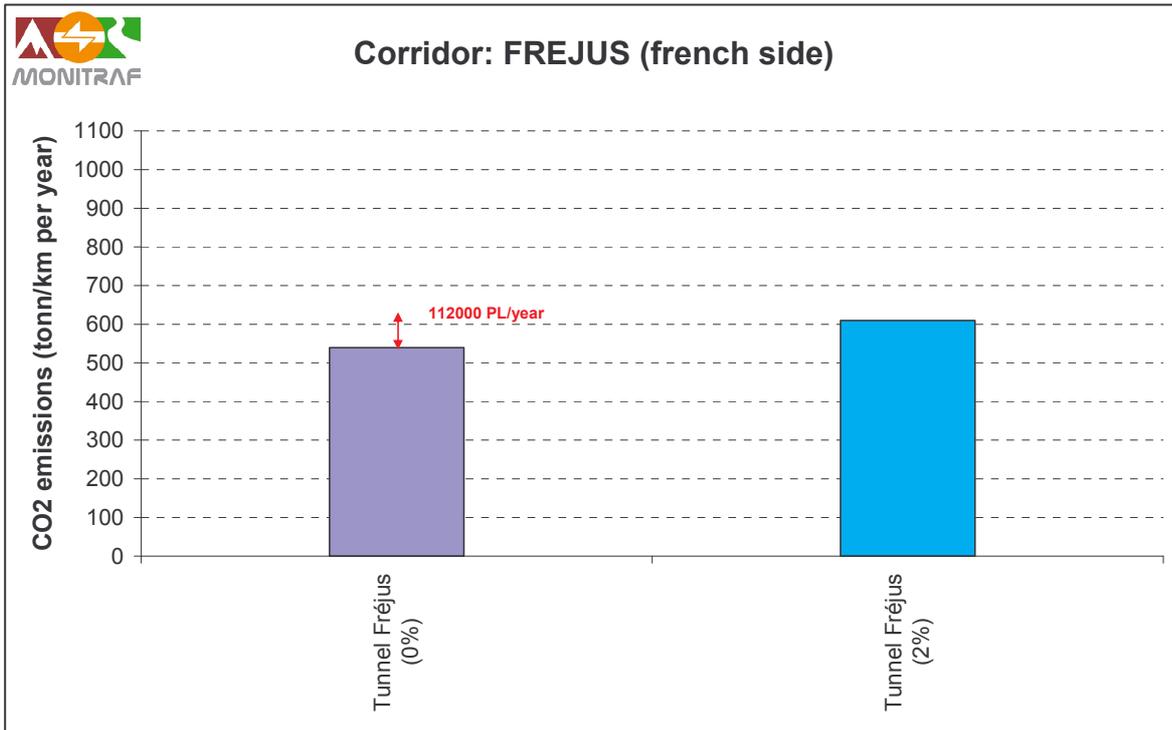


Figure 51: CO₂ emissions in the Fréjus corridor: slope effect (year 2005)

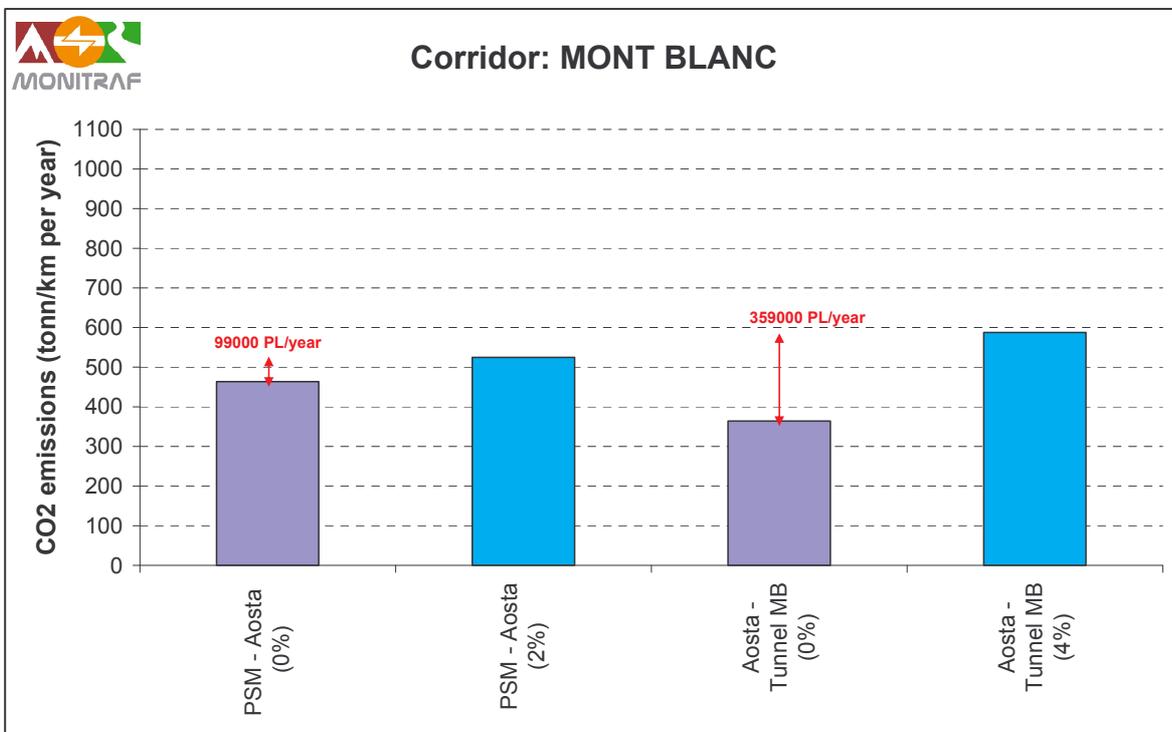


Figure 52: CO₂ emissions in the Mont Blanc corridor: slope effect (year 2005)

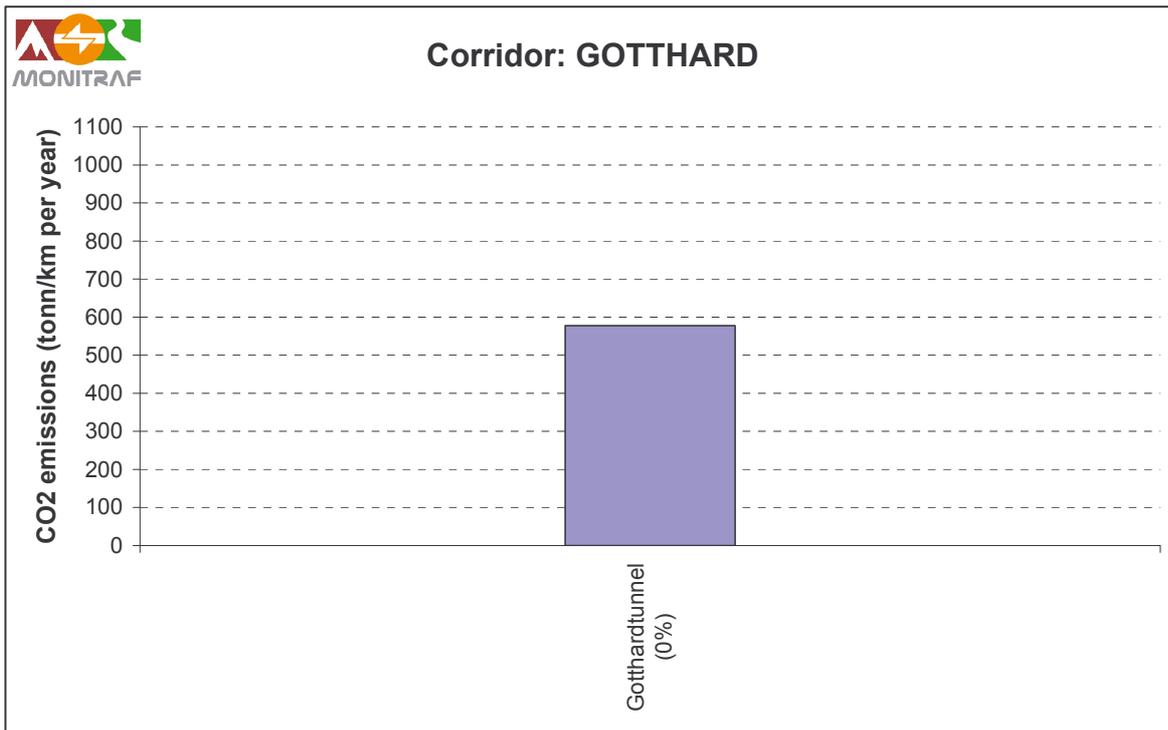


Figure 53: CO₂ emissions in the Gotthard corridor: slope effect (year 2005)

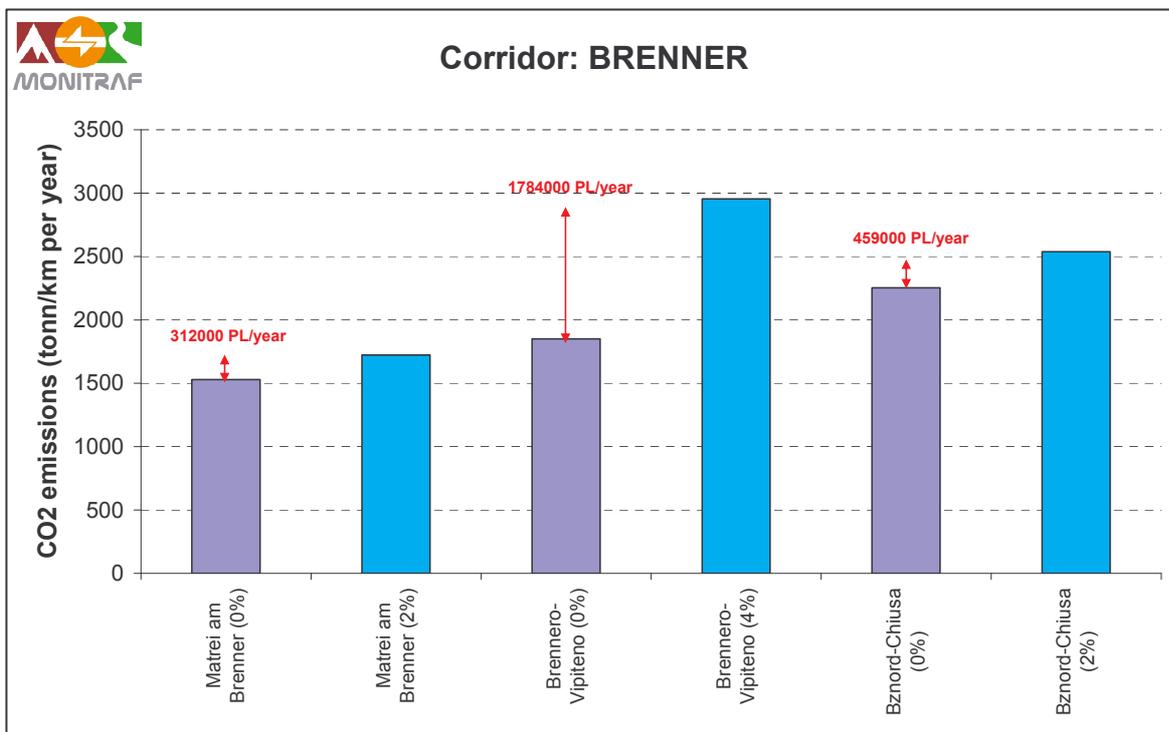


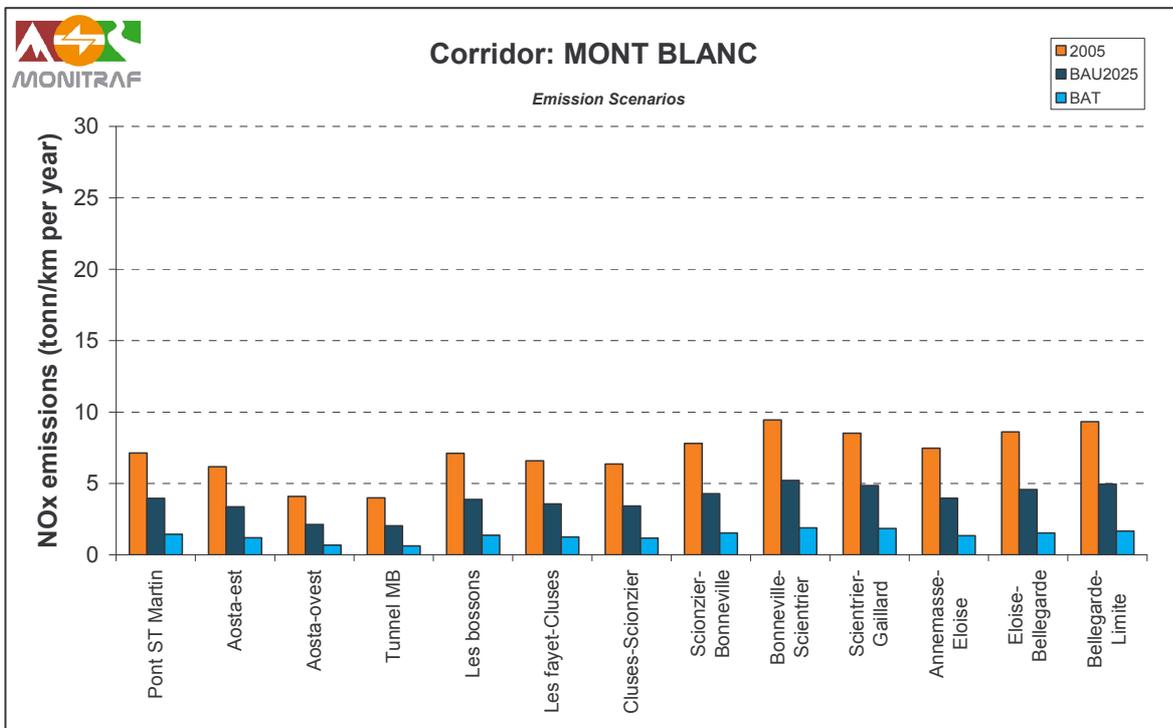
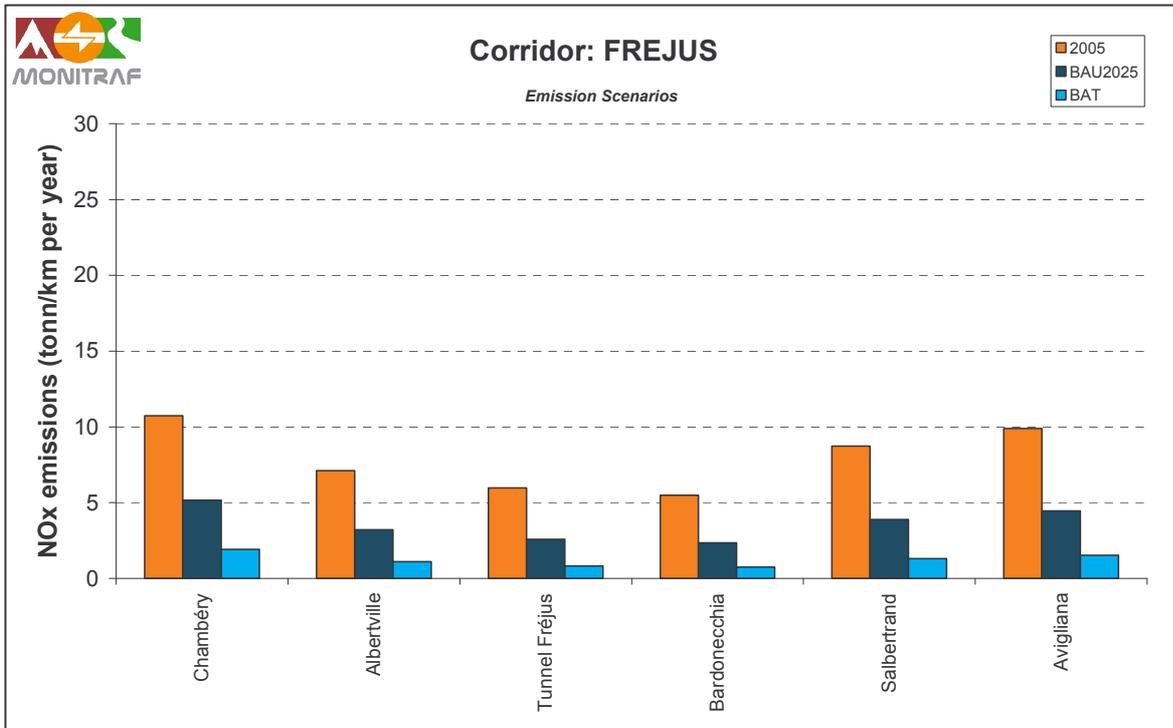
Figure 54: CO₂ emissions in the Brenner corridor: slope effect (year 2005)

The reading of the diagram leads to the calculation of the global weight of additional emissions due to slope, in equivalent heavy vehicles. All together the cost for the mountain territory is equivalent to nearly 6500 additional transits over the passes per day, that is equal to 44% of present day Alpine heavy traffic.

BAU2025 and BAT SCENARIOS

The emission calculation presented above for year 2005 was repeated for the BAU 2025 and BAT scenarios.

In the following diagrams, total emissions are reported for the three scenarios, referring to the sum of light and heavy vehicles and to the three pollutants considered, per corridor and per stretch.



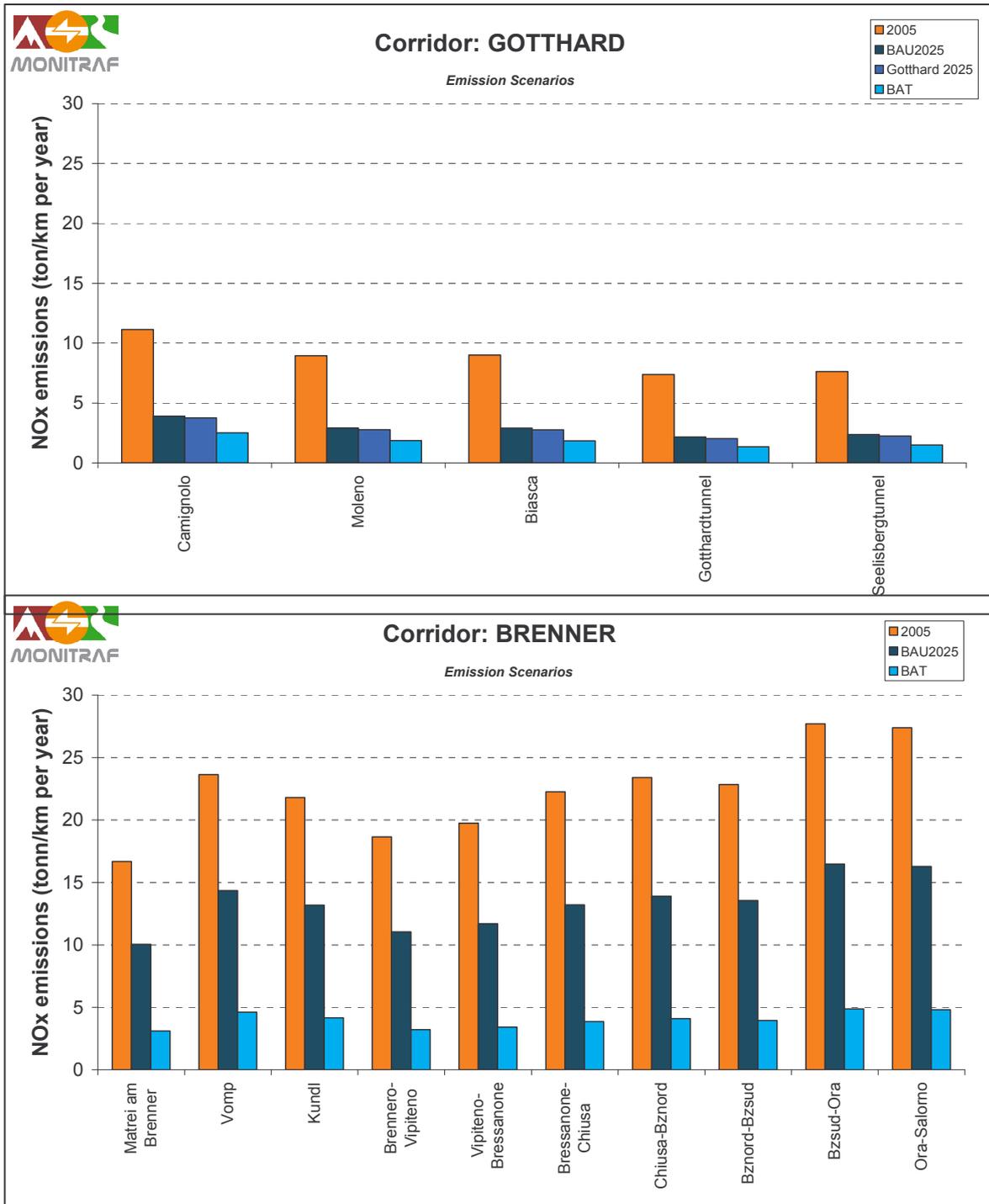
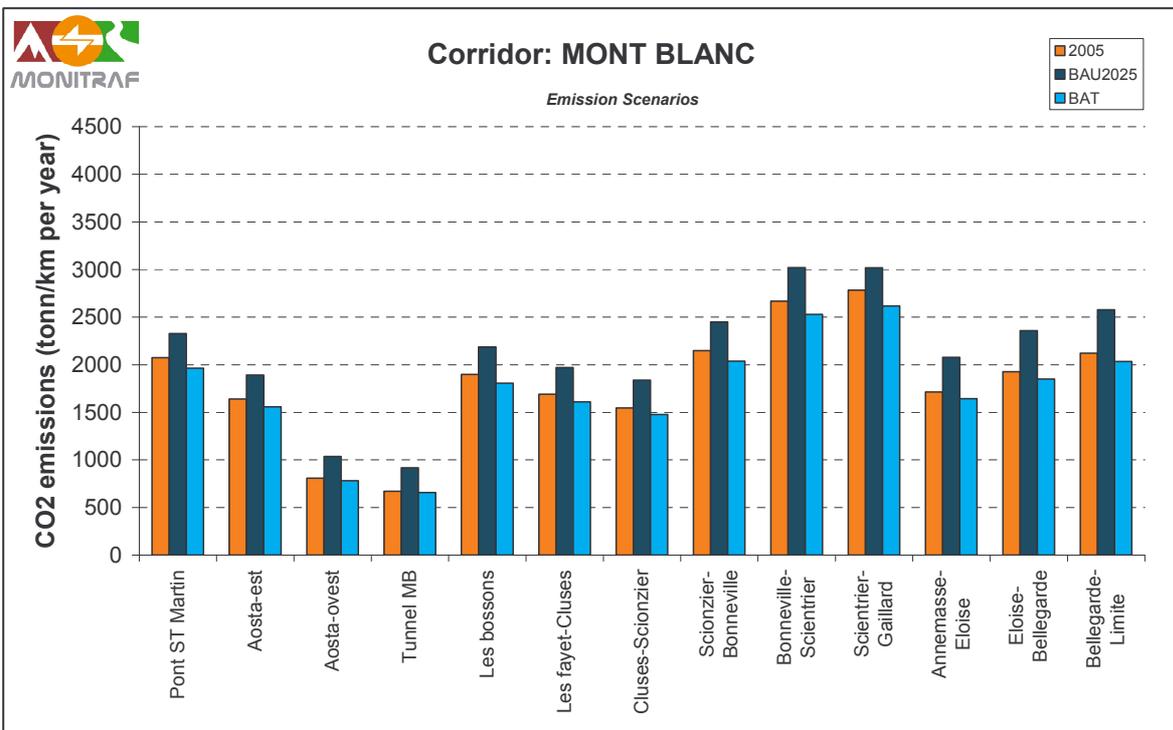
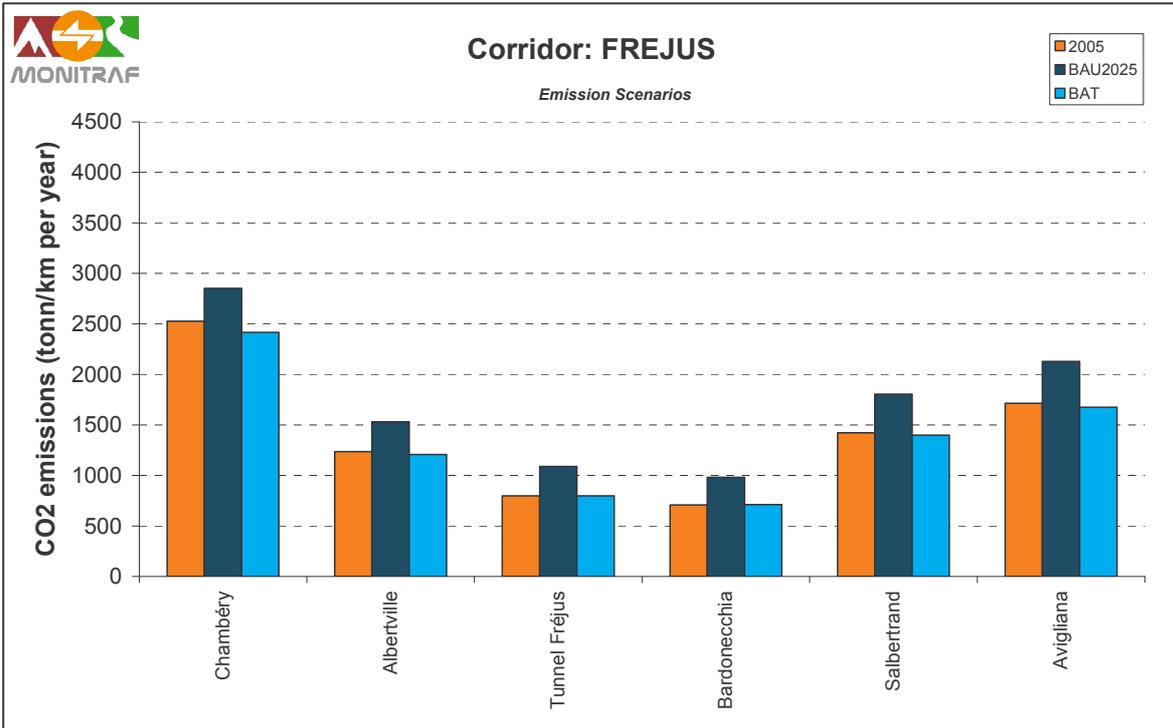


Figure 55: NOx emissions in the corridors: scenario comparison



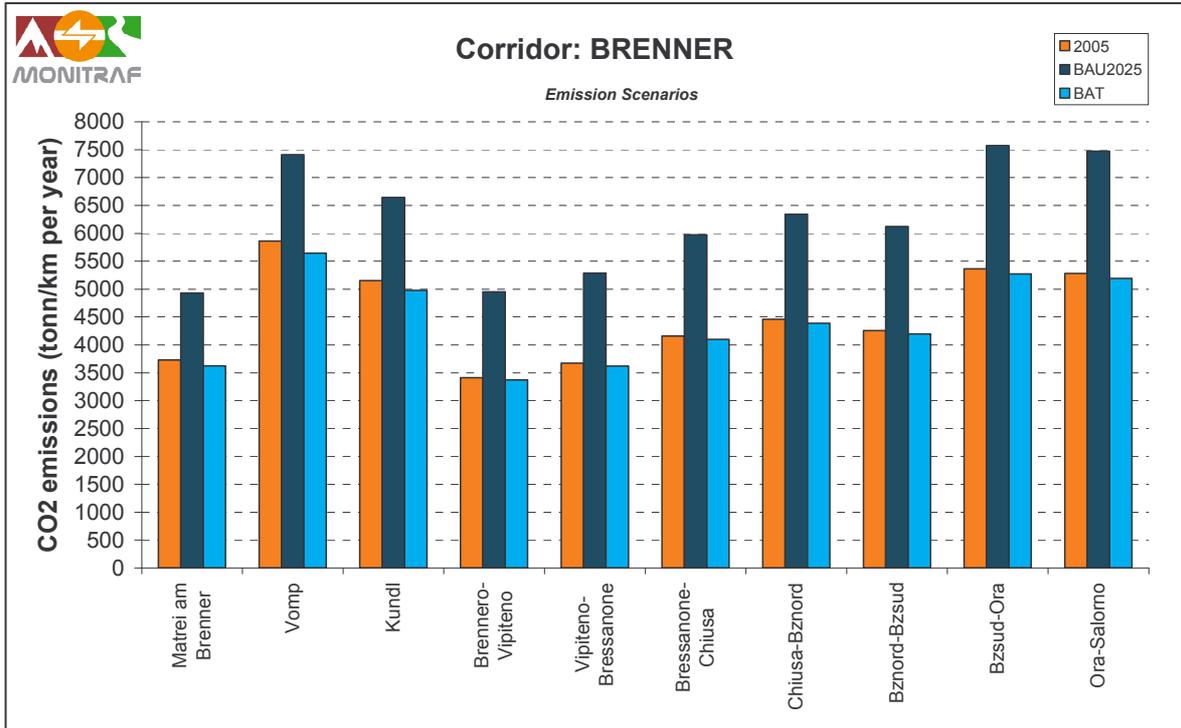
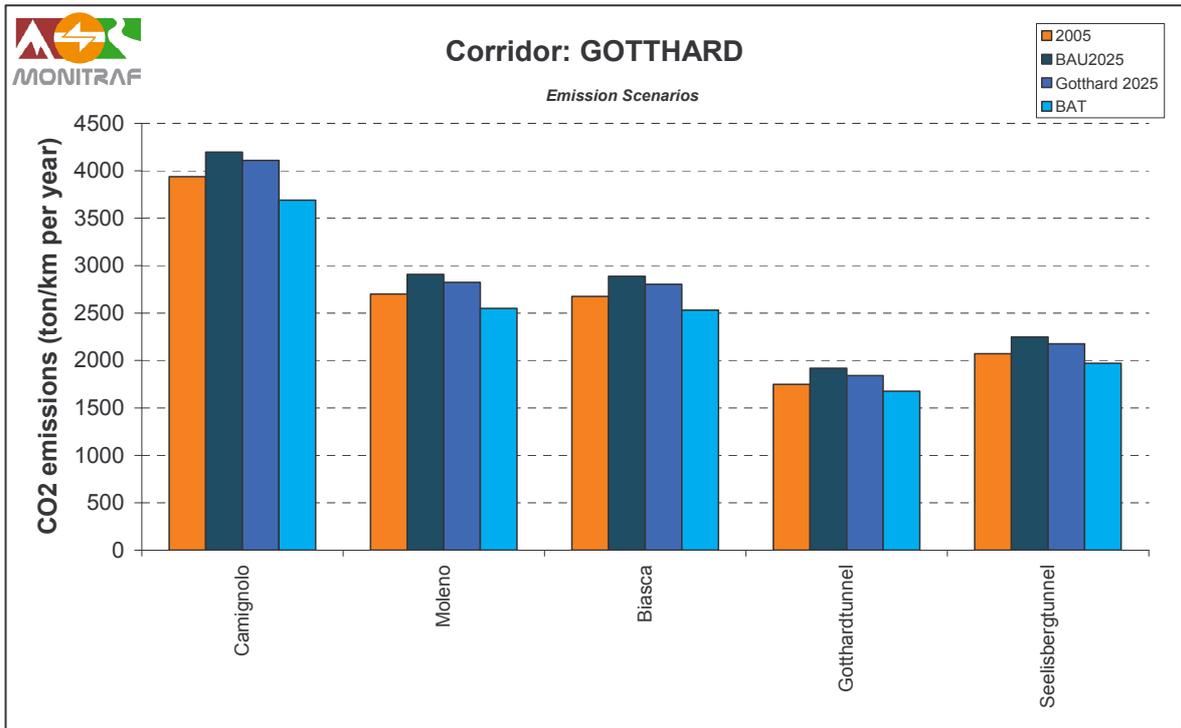
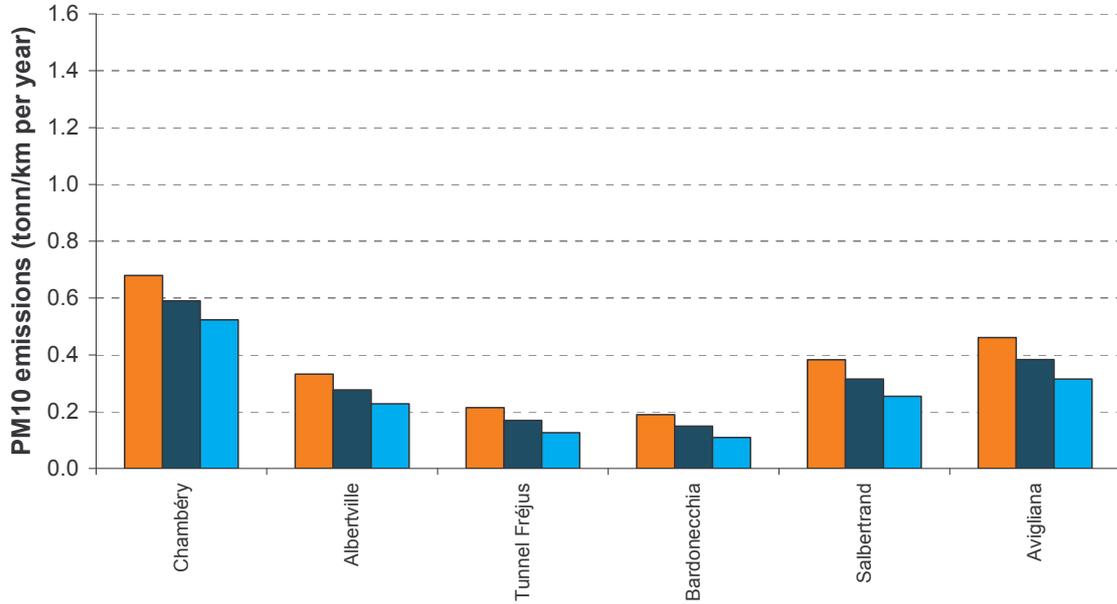
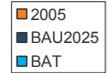


Figure 56: CO₂ emissions in the corridors: scenario comparison



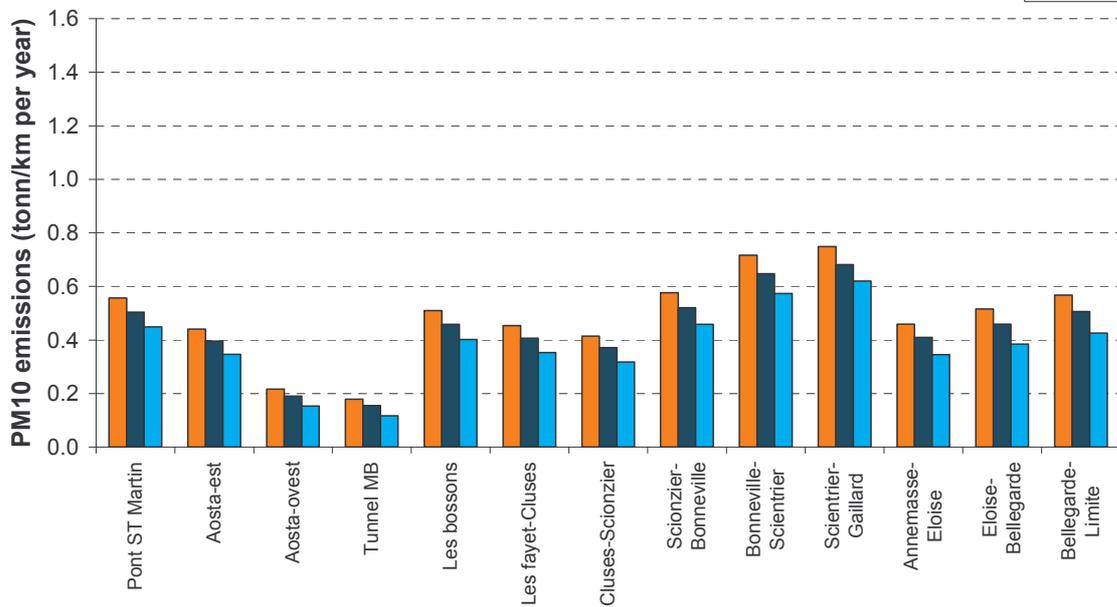
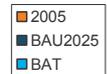
Corridor: FREJUS

Emission Scenarios



Corridor: MONT BLANC

Emission Scenarios



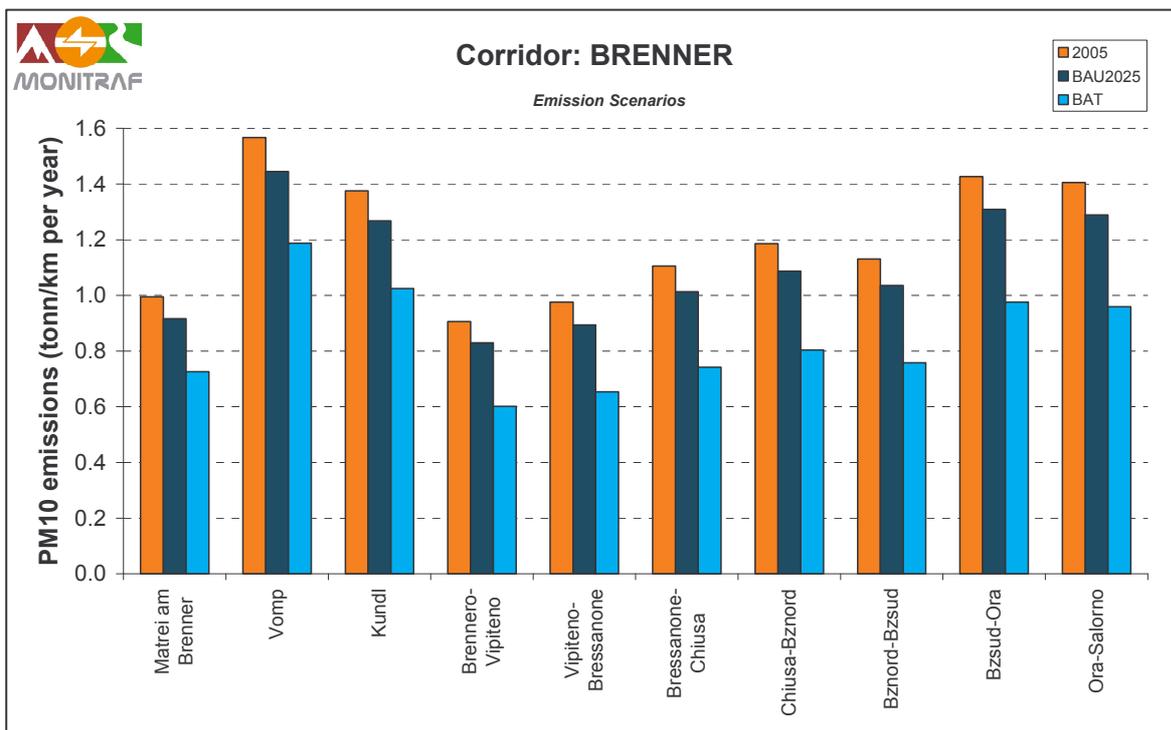
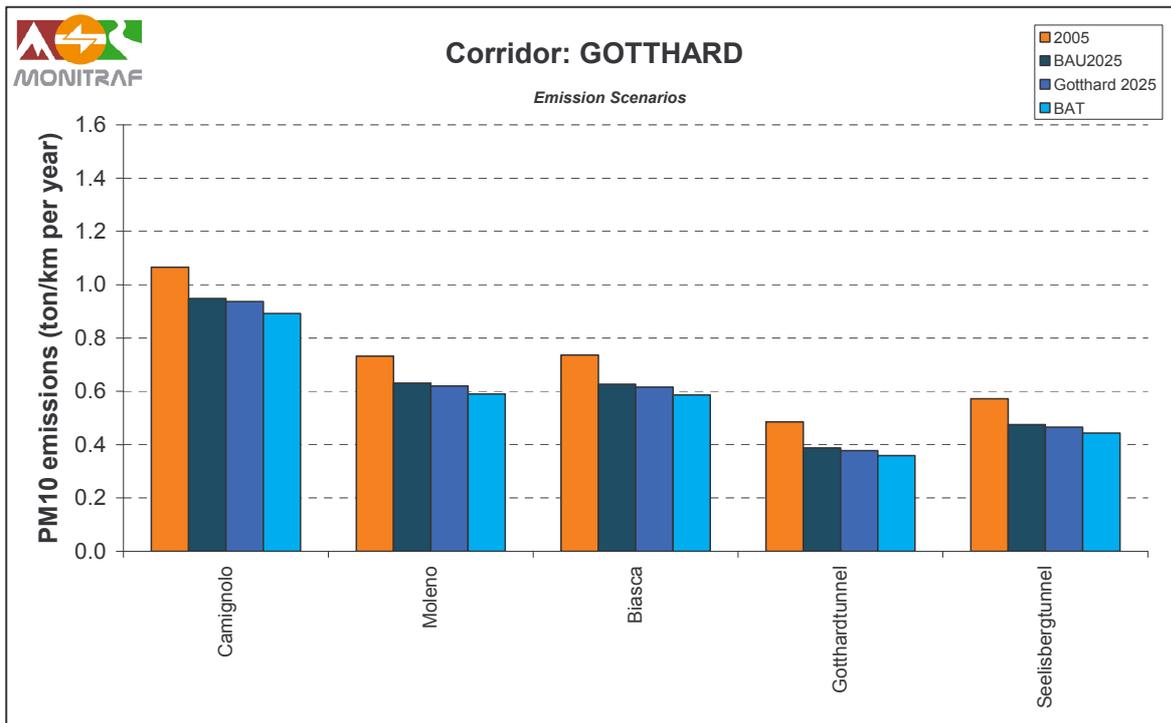


Figure 57: PM10 emissions in the corridors: scenario comparison

Definitely higher emissions are recorded along all the stretches of the Brenner corridor because of greater traffic flows; in the case of the other three corridors, the figures are smaller and more similar to each other.

The values at some stations, particularly Chambéry and Avigliana, are higher in all three scenarios. This is very likely due to the proximity to urban centres and the resulting traffic effecting emissions.

In the following table there is a summary of the variations of CO₂, NO_x and PM₁₀ emissions per corridor versus the 2005 scenario, taking account of the total vehicles transits in the respective scenarios.

Emission variations	CO ₂			NO _x			PM ₁₀		
	BAU 2025	Gotthard 2025	BAT	BAU 2025	Gotthard 2025	BAT	BAU 2025	Gotthard 2025	BAT
Fréjus	32%		-2%	-69%		-85%	-18%		-34%
M. Bianco	26%		-4%	-62%		-81%	-9%		-23%
Gotthard	7%	5%	-6%	-66%	-67%	-78%	-14%	-15%	-19%
Brenner	45%		-2%	-59%		-82%	-9%		-30%

Emission variations per pollutant in the MONITRAF scenarios

The following emerges from the comparison of the results:

	BAU2025 / Gotthard 2025 Scenario	BAT Scenario
CO₂	<p>☹ A general increase in emissions is recorded in that, in the case of this pollutant, the improvements of the vehicles in circulation do not compensate the expected greater flow of vehicles.</p> <p>☺ For the Gotthard alone there is a reduction in both the options examined because there is a modest increase in traffic, hence technological improvement prevails.</p> <p>☹ The greatest increases are recorded at the Brenner and the Fréjus.</p>	<p>☺ In all corridors not very significant emission reductions are recorded.</p>
NO_x	<p>☺ Considerable emission reductions – approx. 60% - are recorded in all corridors.</p>	<p>☺☺ Considerable emission reductions – approx. 80.% - are recorded in all corridors</p>
PM₁₀	<p>☺ Approx.9-18% reductions are recorded in all corridors, with the best results at the Fréjus and the worst at the Brenner.</p>	<p>☺ Reductions between 19 and 34% are recorded in all corridors. In this case the best results are at the Brenner and the Fréjus, the worst at the Gotthard.</p>

The reductions for all three pollutants are more significant in the BAT scenario versus the BAU2025 scenario. Indeed, in this scenario the increase in traffic reduces the effects of the improvement of the vehicle fleet. Furthermore, the reductions in NOx are much higher than those of PM10s in both scenarios.

Analyzing the reductions in the four corridors one notices that as concerns CO₂, the best conditions are to be found at the Gotthard, whilst as regards NOx e PM10, the most significant reductions are foreseen at the Fréjus.

With the Gotthard 2025 scenario (5% maximum increase in heavy traffic through to 2005) reductions are slightly in excess of those in BAU 2025, in that traffic flows are quite similar.

CONCLUSIONS

In reading the results of the scenario analysis, one draws the conclusion that technological evolution together with the radical renewal of the vehicles in circulation (BAT Scenario) is what produces the best results.

However, traffic growth estimated through to 2025, strongly reduce the margin for improvement (BAU2025scenario) as to NOx and PM10s, and there is even an increase in CO₂ emissions. Technological development and modal shift therefore aren't sufficient to guarantee traffic sustainability; it has to be supported by actions aiming at reducing greenhouse gasses. These actions should aim at more significant reducing flows through specific measures as for example the Freight Exchange or Shift to Rail.

MONITRAF's next step should be to focus on estimating the flows deriving from these measures, as soon as they are better defined by the transalpine countries.

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