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<b>Deliverable Lead authors</b>	E. Piteni (AdSP-MAM), Olimpia Ferrara (SRM), Alessandro Panaro (SRM)
<b>Deliverable Contributors</b>	S. De Santis (AdSP-MAM)
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## Executive Summary

The document examines the impact of COVID-19 on passenger traffic in the Adriatic area with special reference to the Puglia region in Italy. In addition, it highlights the main existing maritime passenger routes between Italy and Croatia. After assessing the existing tourist flows between Puglia and Croatia, the document also examines the potential for the tourist flow between Puglia and Croatia, emphasizing the extent of the catchment area for Puglia. The AdSP-MAM can refer to a wider catchment area, encompassing most of southern Italy. This implies a potentially greater number of passengers on the cross-border ferry lines between the two Countries.

## 1. The impact of COVID-19 on maritime passenger traffic in the Adriatic, and a focus on Apulia

If the impact of COVID-19 on the maritime economy has generally been significant, due to the pandemic continuing for a period of over *two* years, effects have been even more disruptive for passenger traffic.

In particular, this report aims to analyse the impact of COVID-19 on the part of the Adriatic area involved in traffic with Croatia, with specific reference to the role of the Italian region Apulia. The study will also consider other areas along the eastern Italian peninsula, which are potential competitors of this region<sup>1</sup>. Therefore, passenger traffic data will be related to the following Port Network Authorities: Southern Adriatic Sea (AdSP-MAM)<sup>2</sup>, Central Adriatic Sea (AdSP-MAC)<sup>3</sup>, Central-North Adriatic Sea (AdSP-MACS)<sup>4</sup> and North Adriatic Sea (AdSP-MAS)<sup>5</sup>.

As the graph below clearly shows, the drop in traffic in the Adriatic area has been even more pronounced than in the rest of Italy, with flows shrinking by two thirds in 2020 and then recovering in 2021, but at levels still halved compared with 2019 while in the rest of the country the situation returned to 2018 levels, albeit without reaching the peak of 2019. As of 2022, the Adriatic area, with its 1.9 million passengers, accounts for around 5% of the overall Italian ferry transports which amount to 41 million passengers.

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<sup>1</sup> The Trieste area is not included as this is mainly connected via land.

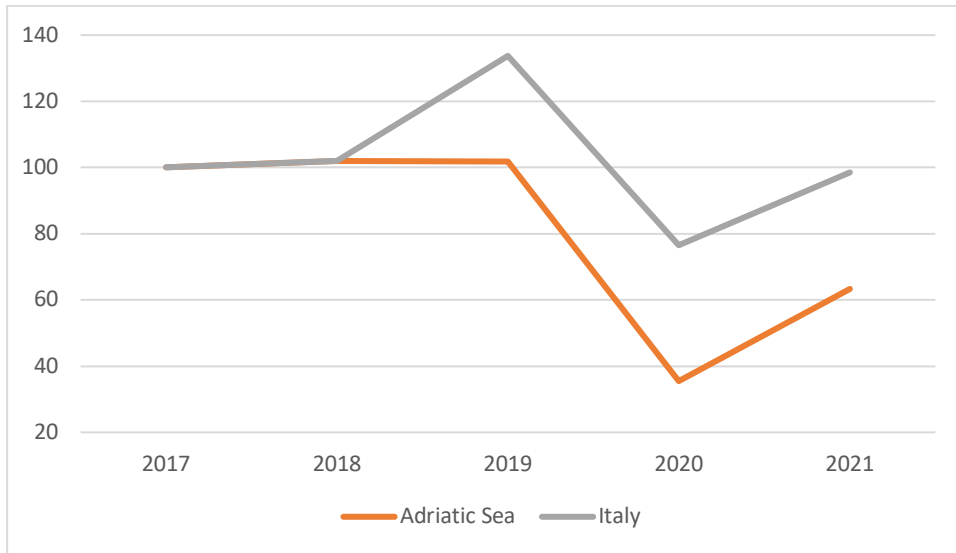
<sup>2</sup> Comprising the ports of Bari, Barletta, Brindisi, Manfredonia and Monopoli. Autorità di Sistema Portuale Mar Adriatico Meridionale (AdSP-MAM)

<sup>3</sup> Comprising the port of Ancona-Falconara, Pescara, Pesaro, San Benedetto del Tronto, Ortona. Autorità di Sistema Portuale Mar Adriatico Centrale (AdSP-MAC)

<sup>4</sup> Comprising the port of Ravenna. Autorità di Sistema Portuale Mar Adriatico Centro Settentrionale (AdSP-MACS)

<sup>5</sup> Comprising the ports of Venezia and Chioggia. Autorità di Sistema Portuale Mar Adriatico Settentrionale (AdSP-MAS)

Figure 1 – ferry passenger traffic between 2017 and 2021. A comparison between Italy and the Adriatic area 2017=100

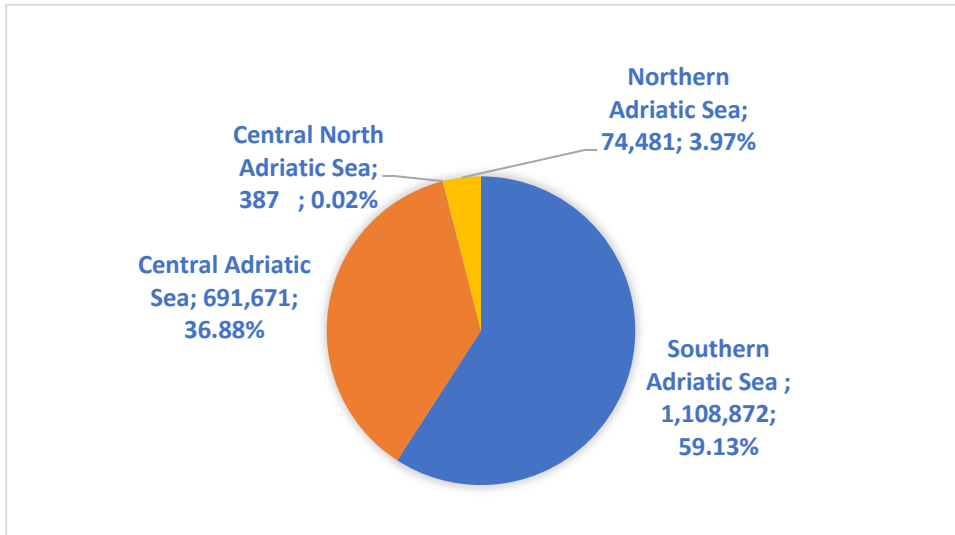


Source: elaboration SRM on Assoporti data

For the Port Network Authority of the Southern Adriatic Sea, passenger traffic is a crucial element of development, just as important as goods traffic, and represents an opportunity not only for diversification of supply but also for the offer of increasingly high-standard services characterised by high quality, sustainability and touristic appeal.

If we take a closer look at the trend of ferry passenger transport in the AdSP-MAM, we can see that its traffic accounts for about 60% of the total on the east coast and thus has the greatest share of passengers, with 1.1 million, which also means that the AdSP-MAM has a strong influence on trends of this traffic in the Adriatic area.

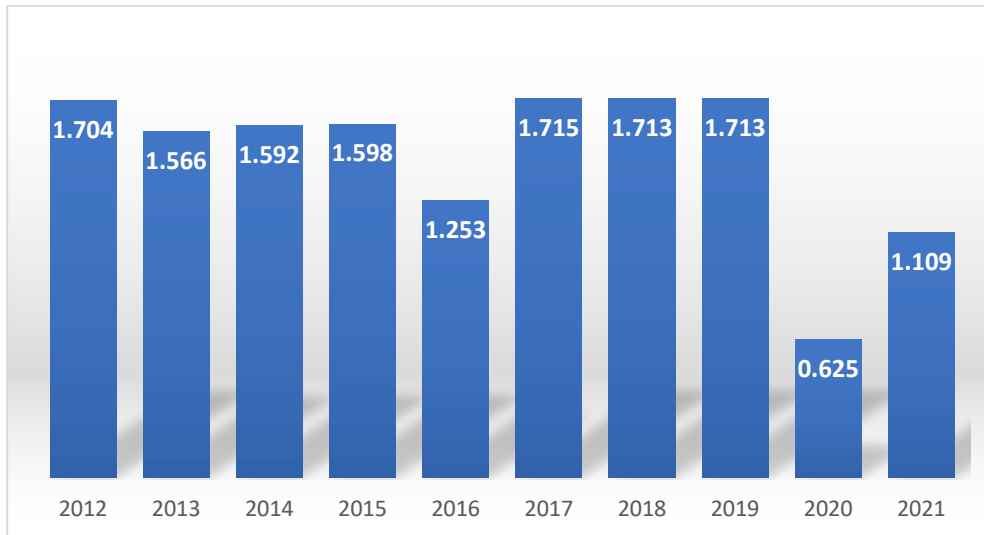
Figure 2 – Ferry passenger traffic by Port Network Authority in the Adriatic Sea – 2021



Source: SRM on Assoporti data

In particular, besides the drop recorded in 2016, movements of passengers had remained steady between 2012 and 2019 with about 1.6/1.7 million units before slowing markedly in 2020, when the COVID-19 crisis halted passenger movements all over the world. As of 2021, this slowdown still has to be completely recovered.

Figure 3 – Trend of ferry passenger traffic between 2012 and 2021 in the AdSP-MAM – millions of passengers



Source: SRM on Assoporti data

Currently, passenger traffic of the AdSP-MAM is mainly concentrated in the ports of Bari, with 796,000 passengers in 2021, and Brindisi, with 312,000.

## 2. Passenger lines between Italy and Croatia

This section analyses the current situation and future scenarios of passenger traffic flows between Italian and Croatian ports with the aim of highlighting potential developments.

The main objective of this work is to spot ways for encouraging traffic flows and connectivity between Adriatic ports so as to contribute to increased competitiveness of the territories served by maritime connections.

Thanks to traffic data, it can be underlined that there are passenger transport connections (RO-PAX) between Italian and Croatian ports. At the moment, there are 9 main lines connecting the

two shores of the Adriatic area<sup>6</sup> of which 4 are RO-PAX for the Central-South and 5 are faster connections from Venice. The connections mainly concern the three Italian cities of Ancona, Bari and Venice, which are linked with six Croatian cities, namely Split, Zadar, Dubrovnik, Pula, Rovinj and Porec. As will be seen in the detailed analysis, these routes are mainly frequented during the summer period and are in any case characterised by a strong seasonality.

The Ancona-Split route is operated by two companies: Snav and Jadrolinija. As for the former, it is part of MSC group and the Ancona-Split connection will be active from 25 May to 2 October 2022, with three round-trip weekly departures in May and September and 4 between June and August. The voyage lasts about 11 hours. There is another RO-PAX line between the same two ports operated by Jadrolinija, the greatest Croatian state-owned shipping liner which operates the Ancona-Split connection all year round. Between January and mid-May there are two round-trip weekly departures, which are increased to three in the periods 15 May -22 June and September-October while the highest frequency of this service, with 4 weekly connections, is reached in the peak summer months. The voyage is about 11 hours long.

The Ancona-Zadar connection is operated by Jadrolinija and is only active in the summer period with one or two round-trip services, between June and September, with a voyage duration of about 9 hours.

In addition, there is a RO-PAX connection between the ports of Bari and Dubrovnik, served by Jadrolinija. The Bari-Dubrovnik route is operational between June and the end of November and voyage time is about 10/11 hours with variations linked to seasons. In the first weeks, there are 2 round-trip weekly departures while in high season these are increased to 4 and then reduced again in autumn, between 31 October and 24 November, when there is only 1.

The short routes are operated by fast catamaran from Venice and do not carry motor vehicles. The Venice-Pula route (no motor vehicles) is operated by Venezia Lines, a Maltese shipping company, and only operates during the summer months, from June to September, with an increase in travel opportunities during the high season. Voyage time is 3 hours and 30 minutes and in June and September there is 1 round-trip weekly departure while there are 2 in July and August.

The Venice-Rovinj route (no vehicles) is operated by the shipping company Venezia Lines from April to September with a voyage duration varying from 3h45 to 5h15, depending on whether

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<sup>6</sup> Excluding Trieste and smaller ports. Also, passenger traffic in the port of Ravenna is so low that it is not relevant in this analysis.

the ferry stops in Pula. The service operates from the end of April with 1 round-trip departure. In the summer months this service runs every day. The Venice-Rovinj route is also operated by the Croatian company Adriatic Lines in the summer months. Voyage time is approximately 3 hours, and the service is available from May to September. During high season there are up to 3 departures per week.

The Venice-Poreč route (no vehicles) is operated by the shipping company Venezia Lines and Adriatic Lines. It lasts approximately 3 hours and is available from May to the beginning of October. During high season there are up to 4 departures per week.

Table 1 – Passenger lines between Italy and Croatia in 2022-23

Origin	Destination	Sector/type	Shipping liner	Weekly frequency	Period of activity	Voyage time (hours)
Venice	Pula	no vehicles	Venezia Lines	1-2	June-September	3.30
Venice	Rovinj	no vehicles	Venezia Lines	1-7	April-September	3.45-5.15
Venice	Rovinj	no vehicles	Adriatic Lines	1-3	May-September	3.00
Venice	Porec	no vehicles	Venezia Lines	1-4	April-September	2.45
Venice	Porec	no vehicles	Adriatic Lines	1-4	May-October	3.30
Ancona	Split	<b>Ro-Pax</b>	Snav	3-4	May-October	9
Ancona	Split	<b>Ro-Pax</b>	Jadrolinija	2-4	Year round	10-11
Ancona	Zadar	<b>Ro-Pax</b>	Jadrolinija	1-2	June-September	9
Bari	Dubrovnik	<b>Ro-Pax</b>	Jadrolinija	1-4	June-November	10-11

Source: SRM on shipping liners' websites



Figure 4 – passenger connection routes between Italy and Croatia in 2022



Source: SRM on various sources

The elaboration and combination of these routes together with the subsequent data shows a clear picture of the current traffic flows between the partner ports and in general between the catchment area of each port. This elaboration is also the starting point for the analysis of potential traffic.

- The Port of Bari: this is one of the major ports in South-East Italy and it is located in the central part of Bari Metropolitan Area. The port is traditionally considered the gateway for traffic between Europe, the Balkans and the Middle East and also has connections with Croatia.

In particular, in 2021 the Bari-Dubrovnik connection had almost 24,400 passengers, a figure showing recovery on 2020 but still far from the results of 2018-19. Furthermore, in 2021, 8,200 vehicles were moved, with a fourfold increase on 2020 which nevertheless did not reach pre-crisis levels. Vehicle traffic between Bari and Dubrovnik mainly involved cars (83%), trucks (16%) and coaches.

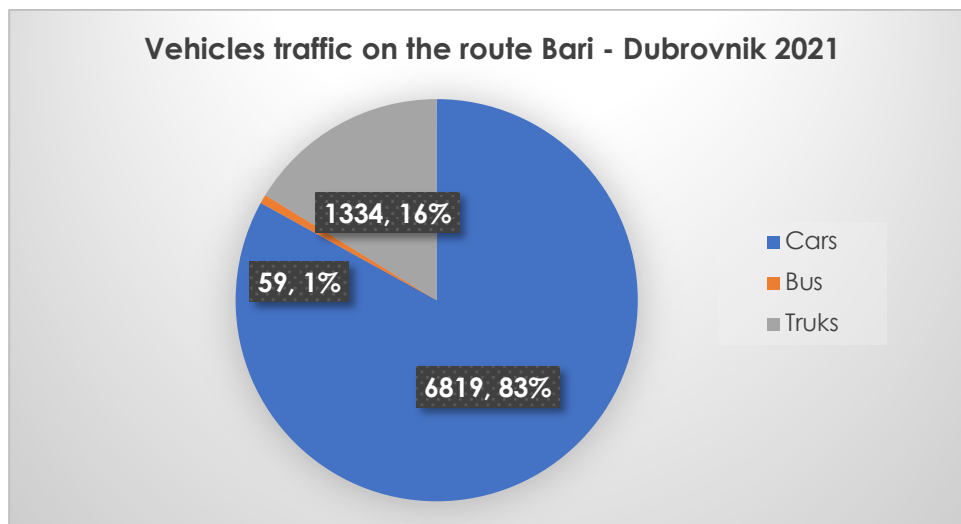
Table 2 – Bari-Dubrovnik RO-PAX route between 2018 and 2021, number of passengers and vehicles

		2018	2019	2020	2021
pax	in	31,345	31,494	3,012	14,001
	out	31,169	25,861	2,125	10,363
	tot	62,514	57,355	5,137	24,364

<b><i>cars</i></b>	<i>in</i>	6,031	5,408	811	3,926
	<i>out</i>	5,171	4,455	641	2,893
	<b><i>tot</i></b>	<b>11,202</b>	<b>9,863</b>	<b>1,452</b>	<b>6,819</b>
<b><i>coaches</i></b>	<i>in</i>	139	181	0	30
	<i>out</i>	222	169	0	29
	<b><i>tot</i></b>	<b>361</b>	<b>350</b>	<b>0</b>	<b>59</b>
<b><i>trucks</i></b>	<i>in</i>	1,004	672	411	827
	<i>out</i>	700	60	259	507
	<b><i>tot</i></b>	<b>1,704</b>	<b>1,232</b>	<b>670</b>	<b>1,334</b>
<b><i>trailers</i></b>	<i>in</i>	0	0	0	0
	<i>out</i>	0	0	0	1
	<b><i>tot</i></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Vehicles Tot</b>	<i>in</i>	7,174	6,261	1,222	4,783
	<i>out</i>	6,093	4,684	900	3,429
	<b><i>tot</i></b>	<b>13,267</b>	<b>11,445</b>	<b>2,122</b>	<b>8,213</b>

Source: Port Network Authority of the Southern Adriatic Sea

Figure 5 – vehicle traffic on the Bari-Dubrovnik route in 2021 (number and percentage)



Source: Port Network Authority of the Southern Adriatic Sea

- The Port of Ancona: The main routes involve the Adriatic Sea and ports of the area. In addition, it represents the benchmark port of call for this analysis as it has the largest number of passengers travelling to and from Croatia.

In 2021, approximately 70,000 passengers passed through the port of Ancona on their way to or from Croatia. For this port of call in the Marche region, there was also a recovery in 2020 (a year strongly affected by Covid-19), but without reaching the 2018-19 levels.

At present, passenger handling from Croatia accounts for 10% of the total handling for the port of Ancona, up from 20% in 2018-19. Overall, as of 2021, approximately 21,000 cars and 4,900 trucks were handled by the port involving Croatia.

Table 3 – Ancona-Croatia routes in 2018-21. Number of passengers and vehicles

Ancona	2018	2019	2020	2021
<b>Pax</b>	221,446	218,499	31,069	69,786
<b>Cars</b>	n,d,	43,511	7,891	20,876
<b>TIR</b>	6,734	6,235	3,848	4,915

Source: Port Network Authority of the Central Adriatic Sea

- The Port of Venice has a terminal dedicated to RO-RO (Venice Ro Port Mos) and a RO-PAX terminal in Fusina with connections mostly to and from Greece, while hydrofoils to Croatia are located in San Basilio (historical centre of Venice) and they are managed by VTP (Venezia Terminal Passeggeri), the same operator in charge of cruise ships. Figures for passengers travelling to Croatia, after standing at 90-100,000 per year, reached zero in 2020 and showed a gradual recovery in 2021.

Table 4 – Venice-Croatia routes in 2018-21. Number of passengers

	2018	2019	2020	2021
<b>Venice</b>	<b>100,069</b>	<b>93,254</b>	<b>0</b>	<b>16,503</b>

Source: Port Network Authority of the North Adriatic Sea

### 3. The catchment area of the South Adriatic Sea and further potential

In order to be able to assess the development potential of other possible connections between Italy and Croatia, the analysis of tourist flows between the two countries was used, and in particular the data on tourist arrivals of Italians to Croatia and Croatians to Italy.

In order to assess the potential market of traffic flows in the Adriatic ports, it is advisable to process general data on tourist flows between Italy and Croatia which may help determine potential customers. Especially for the central-southern area, connections take place mainly by sea and therefore make it possible to highlight the catchment area of the maritime services of the individual partner ports.

The aim is to highlight the differences and similarities, alongside strengths and weaknesses, between the partner ports in order to create the basic background for the potential traffic analysis.

A statistical traffic model<sup>7</sup> is implemented to predict the future trend of exchange flows across the study area. For each partner port, a catchment area and an origin-destination matrix of tourist flows are defined.

The trend of Croatian tourists who - through whatever means of transport - chose Italy for their trips experienced a steady growth between 2015 and 2019, only to slow down decisively at the height of the pandemic, dropping from about 300,000 arrivals in Italian accommodation facilities to about 73,000.

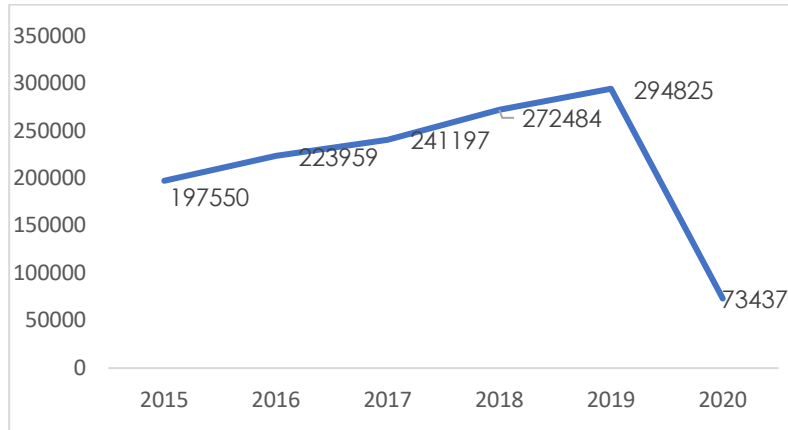
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<sup>7</sup> The statistical traffic model is based on the analysis of tourist arrival and attendance flows.

It is developed in several steps of a qualitative-quantitative nature:

- 1) On the basis of "consensus" data from leading international forecasters (including the UNWTO), forecasts of national arrivals and presences (distributed by month through a seasonality history) are made.
- 2) Regional distribution (top down) of the national forecast data is made through a matrix of weights (Region/Month) calculated on the basis of the historical distribution and seasonality corrected with qualitative assessments of SRM analysts dealing with regional themes and forecasts available on a local basis.
- 3) From the base scenario calculated in this way, two scenarios (one less optimistic and one more optimistic) are then derived by % differences, which are elaborated on the basis of qualitative scenario assessments related to the foreseeable critical issues (for 2022: Covid evolution, geopolitical tensions, price dynamics and impact on disposable income) see also SRM, 2022, *Il turismo nel Mezzogiorno. Scenari regionali e nuove prospettive di rilancio*, in order to publish.

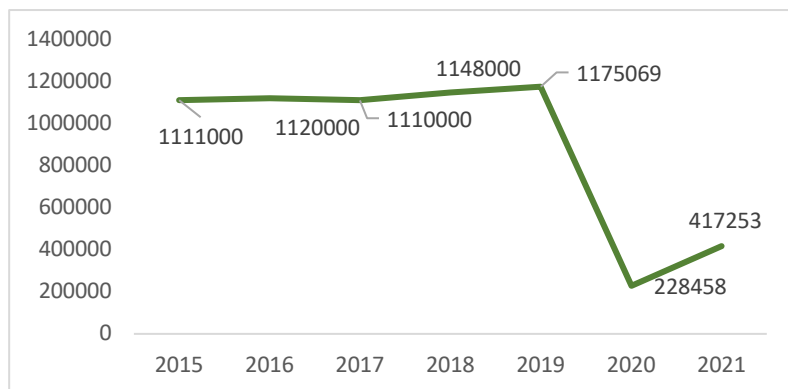
Figure 6 – trend of tourist arrivals to Italy from Croatia. 2015-2020



Source: SRM on Istat data

On the other hand, as regards arrival flows of Italians going to Croatia, after a steady trend of around 1.1-1.2 million passengers in the period 2015-2019, there was an abrupt contraction due to Covid in 2020 when tourist numbers decreased to about 230,000. This figure almost doubled as early as 2021.

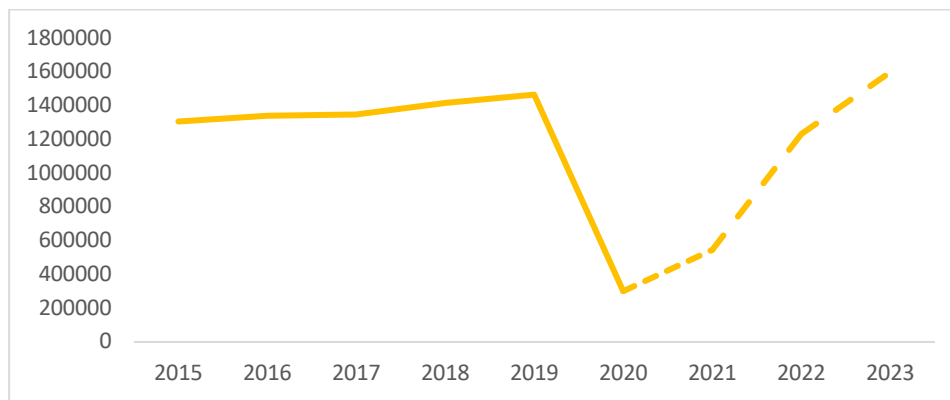
Figure 7 – Trend of tourist arrivals to Croatia from Italy



Source: SRM on Croatian Bureau of Statistics

According to global and Italian overall forecasts<sup>8</sup>, a recovery of tourist flows to pre-Covid levels is expected in the next few years. In particular, as far as foreign tourist demand in Italy is concerned, it has been forecast that in 2022 international tourist stays will account for 83% of 2019 levels. SRM model estimates suggest that there will be a progressive recovery of traffic in the next biennium. A further specific estimate has been conducted for tourist flows between Italy and Croatia. On the whole, for both Italian tourists in Croatia and Croatian tourists in Italy, as shown by the graph, there will probably be an increase in the next two years. This would bring traffic back to pre-Covid levels while opening up avenues for the launch of new RO-PAX or fast connection lines.

Figure 8 – Trend of tourist arrivals from Italy to Croatia and Croatia to Italy. 2015-2023

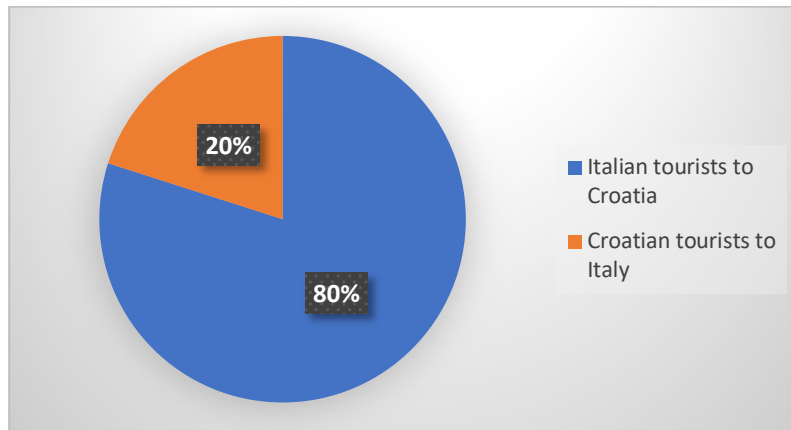


Source: SRM on Istat, Croatian Bureau of Statistics and WTO

As of 2019, which is currently the most stable figure to analyse, there was an overall number of tourist arrivals standing at around 1.5 million, with 1.2 million of these (80%) being Italian tourists travelling to Croatia.

<sup>8</sup> SRM, 2022, *Il turismo nel Mezzogiorno. Scenari regionali e nuove prospettive di rilancio*, in order to publish.

Figure 9 – Direction of tourist flows between Italy and Croatia (%)



Source: SRM on Istat and Croatian Bureau of Statistics

In order to better understand tourist flows and assess the catchment areas in terms of tourist presence, regional data have been used<sup>9</sup>. This allowed us to highlight traffic concentration and the areas served by each port.

As the following graphs and figures clearly show, most traffic is concentrated in North-East Italy and especially in Friuli Venezia Giulia, partly due to the ease and speed of road connections between the two countries through this Italian region.

Nevertheless, these flows involve all Italian regions, albeit with varying significance.

Taking a closer look at data referring to tourist arrival/destination at regional level, alongside passenger lines already analysed above (see Sect.2), allows us to:

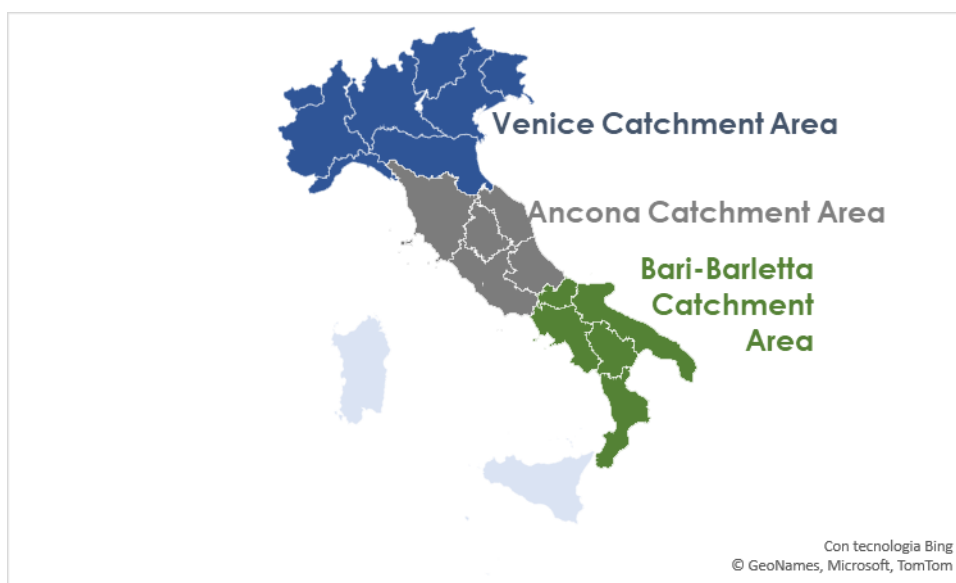
- a) Outline catchment areas of origin and destination for tourist flows between the different areas of Italy and Croatia<sup>10</sup>. In fact, due to matters of geographical proximity and intensity of tourist flows, there are three main catchment areas. Obviously, this does not imply that there cannot be variations in the choices of origin or destination of an area, but in principle the following three macro blocks are identified:

<sup>9</sup> It should be noted that to standardise data processing methods, estimates were used for the regional tourist flows of Italians to Croatia, considering the overall data for Italy from the Croatian Bureau of Statistics to which the regional percentage of tourist arrivals from the Bank of Italy was applied.

<sup>10</sup> See also the results of the study European Union, 2018, *Interreg Italy-Croatia*, “D.4.1.3 Comprehensive report on the future scenarios of traffic flows between Italia-Croatian ports”.

- i. The catchment area of the Port of Venice (AdSP-MAS) serving the regions of Northern Italy
- ii. The catchment area of the port of Ancona (AdSP-MAC) comprising the regions of Central Italy
- iii. The catchment area of Apulia's ports of the AdSP-MAM involving the southern Italian regions (excluding islands).

Figure 10 – Catchment areas of ports



Source: SRM

- b) Quantify the overall tourist flows of individual regions. This is particularly important for the Southern area, whose regions are highlighted in yellow in the table below. Tourist arrivals to and from Croatia in the Southern area amounted to approximately 110,000 units and are the reference for the AdSP-MAM. Moreover, compared to Northern Italy, the Southern Italy area is more easily connected to Croatia by sea or by air than by land. This also brings a marked environmental advantage by decongesting traffic and promoting the intermodal switch.
- c) Identify a tourist potential for Southern Italy-Croatia connections that is almost twice as high as passenger flows along the Bari-Dubrovnik route. Comparing the tourist flow data



for 2019 (stable pre-pandemic year), which are equal - for the catchment area identified- to over 110,000 tourists (see table below, data in yellow) with the passenger flows handled by the Bari-Dubrovnik route (just over 57,300 units- see table 2), this potential is in fact highlighted.

- d) this potential traffic could be covered by the implementation of a new ferry line between the AdSP-MAM and Croatia **or by plane** that, in this area, is competitive.

Table 5

Tourist arrivals from and to Italy-Croatia	
Friuli-Venezia Giulia	541,351
Lazio	186,746
Lombardy	149,674
Veneto	141,486
Piedmont	127,118
<b>Campania</b>	<b>83,391</b>
Tuscany	57,167
Marche	41,082
Trentino-Alto-Adige	29,979
Emilia-Romagna	26,401
Abruzzo	25,998
Sicily	19,425
<b>Apulia</b>	<b>18,623</b>
Liguria	5,204
<b>Molise</b>	<b>4,751</b>
Sardinia	3,544
Umbria	3,519
<b>Basilicata</b>	<b>2,356</b>
Valle d'Aosta	1,074
<b>Calabria</b>	<b>937</b>
<b>TOTAL</b>	<b>1,469,825</b>
<b>Catchment Area of AdSP- MAM</b>	<b>110,058</b>

Source: SRM on Croatian Bureau of Statistics and Bank of Italy

## Conclusions

This work considered the catchment areas of the Italian territory for the Italy-Croatia passenger flow. The evolution of the flow before and after the outbreak of the COVID-19 has been quantitatively assessed. It is found that the ports of the AdSP-MAM may refer to a wider catchment area, encompassing most of southern Italy. This implies a potentially greater number of passengers on the cross-border ferry lines between the two Countries.

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## Sitography

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