

## SOCIO-GEOGRAPHIC TRANSFORMATION OF IST ISLAND, CROATIA

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Ist Island is one of the small inhabited Croatian islands (9.65 km<sup>2</sup>) which experienced strong socio-geographic transformation in the second half of the 20<sup>th</sup> century. Statistical data about the number of population, different demographic structures, dwellings from different censuses and data about land use in 1900, 1951 and 2003 are analysed in the paper. The comparison of these data helps to reconstruct the processes of deruralization and deagrarisation. It is obvious that today Ist Island is among islands with strong economic regress despite suitable natural-geographic basis for further development of tourism as the most perspective economic sector. The development of agriculture is limited because of the small share of arable land.

**Key words:** Ist Island, socio-geographic transformation, deruralization, deagrarisation, tourism

Otok Ist jedan je od malih naseljenih hrvatskih otoka (9,65 km<sup>2</sup>) koji je u drugoj polovici 20. stoljeća doživio značajnu socio-geografsku preobrazbu. U radu su analizirani statistički podatci vezani uz kretanje stanovništva, pojedine strukture i korištenje stanova različitih popisnih godina, te podatci o korištenju zemljišta iz 1900., 1951. i 2003. godine čija usporedba omogućuje rekonstrukciju procesa deruralizacije i deagrariacije. Očito je da danas otok Ist spada među otoke s izrazitim gospodarskim nazadovanjem unatoč povoljnim prirodno-geografskim uvjetima za razvoj turizma kao najperspektivnije gospodarske djelatnosti. Razvoj poljoprivrede ograničen je zbog pomanjkanja obradivih površina.

**Ključne riječi:** otok Ist, socio-geografska preobrazba, deruralizacija, deagrariacija, turizam

### Introduction

Ist is a small, inhabited Croatian island situated in the NW part of Zadar archipelago. The remains of prehistorical, Liburnian archaeological sites (Gračina in the eastern part of the island; Jabučina and other tumulouses), as well as some medieval ones (Selišća, on the eastern part of the island) testify to long tradition of inhabitation of the area (BATOVIĆ, 1974) that has been continuous until today. Although, present economic and demographic situation on the island is not promising since negative influence of the processes, that directly threaten its dying, can be noticed.

Because of the economic, cultural and social changes in the second half of the 20<sup>th</sup> century the process of emigration toward the mainland was intensified, which led to drastic increase of deagrarisation that endangered traditional rural cultural heritage. Changes in this area are almost the same as on other inhabited Zadar islands, especially those situated farther from the mainland.

Ist Island and its economic and demographic development are not significantly included in the scientific bibliography, but there are very important papers that deal with the same problems of other Croatian islands with similar natural-geographic and demographic characteristics. Among islands of Zadar archipelago the strongest decline in development has been noticed on the Islands of Olib (MAGAŠ, FARIČIĆ, 2002), Rava (MAGAŠ, FARIČIĆ, 1999) and especially Premuda where the number of population decreased from 537 in 1857 to just 58 in 2001 (MAGAŠ ET AL., 1999). In this group there are also Silba, Molat (MAGAŠ, 1981), Zverinac and Sestrunj islands. The latter showed distinctive negative changes in agricultural valorisation in 1981, caused by drastic decrease of population between 1971 and 1981 which was influenced by industrialization on the mainland (MAGAŠ, FILIPI, 1983). On other islands the process of demographic regression is a little bit slower. Analyses of the basic demographic and economic indicators of Ist Island show that it can be put in the mentioned group of islands with negative development characteristics.

Taking in consideration suitable natural-geographical basis of Ist Island, there are many possibilities of economic re-establishment. Tourism, agriculture (especially organic one), fishing and development of traditional island manual occupations like production of baskets, authentic souvenirs, pottery etc., are often marked as strategic sectors of future economic development (Nacionalni program razvitka otoka, 1997), but it is not possible without return of young population on the island. It should be taken in consideration that human potential is the main factor of development of all areas, including Croatian islands (NEJAŠMIĆ, 1998) and Ist among them.

### **Geographical position and natural-geographic characteristics as the basis for development**

Ist Island makes part of the outer line of Zadar islands. It belongs to the western group of these islands, so called Silba-Molat group. Ist Island is situated between Škarda Island on the NW and Molat Island in the SE. Its cadastral commune covers an area of 10.78 km<sup>2</sup> (Ist Island 9.65 km<sup>2</sup>, belonging islets and sea rocks: Vodenjak, Sestrica /E/, Sestrica /W/, Dužac, Črnikovac, Benušić, Hrid, Galiola, Funestrata, Maslinjak, Kamenjak, Velika Tramerka, Križica, Mala Križica 1.13 km<sup>2</sup>). The coast line is 33.13 km long, (Ist 22.31 km, Vela Tramerka 4.42 km, Vodenjak 1.91 km, and all other islets and rocks 1.45 km. The neighbouring little island of Škarda (3.75 km<sup>2</sup>, 12.27 km coast line, 4 inhabitants 2001.) with the hamlet of the same name, belongs statistically and ecclesiastically to Ist village, although cadastraly it is the part of Premuda Island. So the administrative territory of Ist village, which is the same as the area of the catholic parish of Ist, covers an area of 14.53 km<sup>2</sup>. The island of Škarda, which is not the subject of this paper, is expected to be elaborated in a separate paper. Ist Island is divided from Molat Island by Zapuntel Straits, only 170 m wide. There is an idea about constructing a bridge across this straits in order to make easier the economic development of settlements: Ist on

Ist Island and Zapuntel, Molat and Brkulje on Molat island. This connection would influence significantly the establishment of communication and cooperation between two islands, but in the same time would intensify the possibility of endangering long cultural and social island tradition just because of their spatial isolation (DRAGIĆ, 2002). Until the second half of the 20<sup>th</sup> c., because of its geographical position, (Fig. 1) Ist Island was isolated from the main boat services in the region, which had a great impact on the islanders' life. The establishment of boat lines seemed, at the beginning, as a turning point in the development, but as so far ship-lines have not been organized properly, and connections are slow and infrequent, people used them most for emigrating. Introduction of new, fast and modern passenger boats, at this moment, probably would not have more positive effects on the present situation on the island since other conditions for development are not satisfied, but it would probably help developing weekend tourism, which basically refers to the periodical return of people who left island to live and work on the mainland.

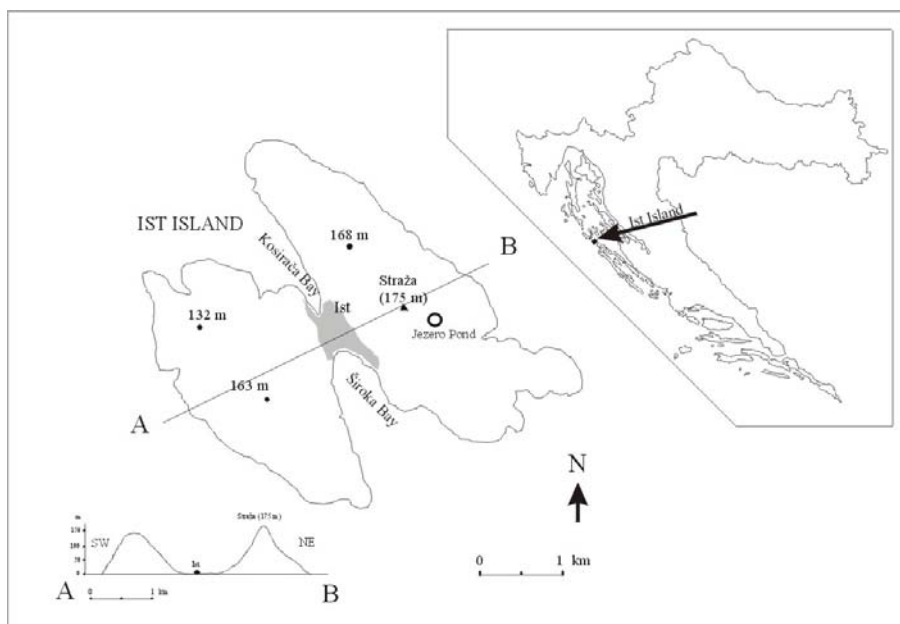


Fig. 1 Geographical position of Ist Island  
*Sl. 1. Geografski položaj otoka Ista*

Natural-geographical characteristics of the island had strong influence on the orientation of local people on developing fishing and navigation. Geological basis and relief caused inexistence of larger arable areas so agriculture was limited to smaller, flatter part near the settlement. Greater part of the island is made of limestone. Northeastern part is made of rudist limestone from Upper Cretaceous (Turonian and Senonian), and SW part is a little bit older, made of cretaceous limestone and dolomite in alteration (Cenomanian-Turonian) (MAMUŽIĆ, 1970). Significant appearances of

Pleistocene reddish coloured sandstone with conglomerates characterize NE coast in the area named Tuf. The main autochthonous traditional building material on the island is limestone and here and there sandstone. Mild NE slope of the SE part of the island (Mljake, Mavrela, Selišće, Jezero) was agriculturally highly valorised in the past because of the appearance of dolomite and relatively temperate relief. NE part of the island, where the highest peak called Straža (175 m) is situated, is much steeper, and land structure did not allow development of fertile soil, which made agricultural valorisation impossible. Similar situation is on the SW ridge with the highest top Vrh Gore (163 m). Between these two ridges, a narrow and low central valley is partly suitable for agriculture, as well as for building of Ist village on its NE slopes. Island agriculture in the past was based mostly on the development of olive grow, vine production (on the flatter part nearer to the settlement) and vegetable production in the houses' gardens, while cattle breeding was less represented (DRAGIĆ, 2002). At the moment this land is mostly abandoned.

The seacoast is well carved, with two bigger and several smaller ports and bays. The biggest bay, the Port of Ist (Široka) is opened towards SE, and is not quite good for anchorage (FIJO, 1957). Along the coast there are some morphologic forms like semi caves called "garma" (Crljena Garma, Bela Garma, Pizdina Vela and Mala, Garma pod Binjuš). There are also some pits (Haršova jama, with pigeons). On the islet of Vodenjak the semi caves are very interesting and attractive.

Hydro-geographical characteristics are directly connected with climate and land structure. The area has the characteristics of Mediterranean climate (Csa according to Köppen classification) with hot, dry summers and temperate, rainy winters. Mean monthly temperature measured in the period of thirty years goes from minimum 6.9-7.0 °C in January up to maximum 23-24 °C in July and August (BONACCI, 1998).

Although mean annual precipitations on the island is relatively high i.e. 889 mm (MILKOVIĆ, 1998), it is not well distributed seasonally what often results in summer dryness that has negative impact on agriculture but also on the islanders' life. Small superficies, big vertical division, steep coasts and limestone structure are the reasons why major quantity of water flows into the sea or in the karst underground. Evaporation is less expressed because of the rain domination in colder period (autumn and winter).

There are no streams or similar water flows on the island, so pond Jezero, situated in the NE part of the island, can be mentioned as the only important hydrographical phenomenon. It is placed SE of the peak Straža and in the past it was used as the most important source of water for watering cattle. When it was necessary islanders also used brackish water from the wells Studenac and Bunar placed in the village (FILIP, 1984). On the map from 1740, a well named "Pozzo" is shown in the village not far from the sea coast (FARRETTI ZAPPICH, 1740) (Fig. 5). Some waters called Vodostaj are also used in some plots. Agricultural development depended directly on the climate conditions so in dry years surviving of local people was possible thanks to their engagement in fishing.

The problem of water lack in summer months is present in almost all small, inhabited Croatian islands except on those directly connected to the regional water-supplying systems. At the moment people from Ist Island use water from private wells for their everyday needs, and when it is necessary (mostly during summer) water is brought to the island by water-carriers. Any serious attempt to practice tourism, which is at present the strongest economic branch on most of Croatian islands (MAGAŠ, BRKIĆ VEJEMELKA, 2002), is regularly confronted with the problem of water supplying. When it is a question of small islands, such as Ist, situated at a distance from the mainland, it is

difficult to supply islanders with water in an economically profitable way. So the biggest water consumers (catering establishments, tourist apartments etc.) in summer season can rely only on the water-carriers, which cannot supply properly all Zadar islands. With renovation of currently abandoned village well significant quantity of water can be collected and used in summer months, but stronger economical development, and especially tourism can be expected only with connection of Ist Island with main regional water-supplying system as it was already scheduled in Spatial plan from 1978 (MAGAŠ, 1999).

The island of Ist belongs phytogeographically and climazonally to the Mediterranean Holm oak (*Quercus ilex*) association area. Mediterranean sorts are numerous, and traditionally were significantly exploited in everyday life. High quality Holm oak wood was used for getting lime from limestone. A dozen of limekilns can be seen along the coast of the island, as well as on the neighbouring island of Škarda. The present day high and low maquis and garigues predominate and, here and there, even larger specimens of trees grow. It is significant that cypresses and groups of pines can be seen on certain locations. The reforestation increased after the island was electrified, the bottle gas introduced in housing, the modern materials used in building instead of wood, and cattle breeding decreased. Some old names testify previous or recent vegetation (Crnikovac, Gora, Paprinjak, Jabučina...).

### **Basic demogeographic changes**

Population is one of the basic components used to follow socio-geographic transformation of an area. If there is no population, it is impossible to talk about economic, cultural and historical development as well as about revitalisation of geographical space, in this case of Ist Island. One of the strategic aims of National Programme of Islands' Development (*Nacionalni program razvitka otoka*) is the return of population on the islands. But, in the first place it should be clear which basic "push" factors were essential for provoking an unfavourable demographic situation and their repercussions on the island's ambiance.

According to the tradition and different data, recent population of Ist Island is partly the remainder of old Liburnian and Romanised population who in early medieval centuries mixed with Croatian population, and later with Croatian immigrants from the continent, partly from Bosnia. The number of inhabitants slowly increased from 16<sup>th</sup> c. (in 1527 – 95 inhabitants) to the mid 20<sup>th</sup> c. (1603 - 100, 1754 - 205, 1804 - 195, 1869 - 332, 1869 - 348, 1880 - 409, 1910 - 433, 1921 - 433, 1931 - 476, 1948 - 466). For the last fifty years there was a constant decrease of the number of inhabitants (1953 - 458, 1961 - 435, 1971 - 386, (FIJO, 1957; FILIPI, 1960; KORENČIĆ, 1979). Ist village became an autonomous catholic parish from 1729, after it was divided from Molat parish (FIJO, 1957; FILIPI, 1960). The most "cakavian" Croatian characterizes rich Glagolitic cultural tradition (CVITANOVIĆ, 1960).

After the Second World War Zadar islands became the area of strong depopulation caused by lower and lower natural increase and strong emigration (FRIGANOVIĆ, 1974). Emergence of demographic regression and progressive dying of small isolated Croatian islands was already in 1970ies apostrophised as a problem which should be solved as soon as possible. In spite of it the situation has been getting worse so far. The result of island population dying is the most noticeable in physical changes of traditional island settlements where so called "Dalmatian architectonic element" has been

seriously endangered, and the process of deagrarisation, which unavoidably follows demographic regression of rural areas, has resulted in decrease of arable areas and redomination of typical Mediterranean vegetation in agricultural zones that once were cultivated. These areas were spatially limited, and today they are mostly neglected owing to the lack of labour.

### Population trends and its basic elements

The population figures during the 20<sup>th</sup> century are the basic indicator of an intensive deruralization process on the island of Ist (Fig. 2).

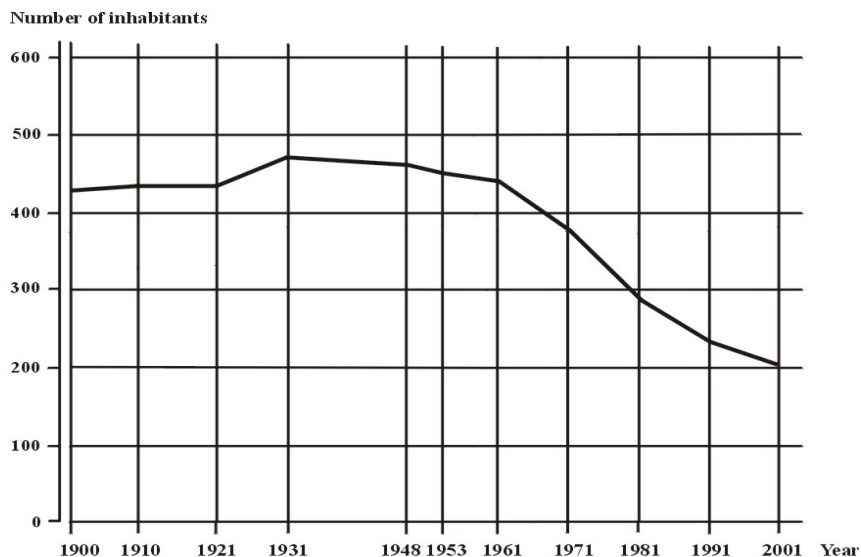


Fig. 2 Population trends on the island of Ist from 1900 to 2001  
*Sl. 2. Kretanje broja stanovnika na otoku Istu od 1900. do 2001.*

Namely, until 1948, despite two world wars, the number of inhabitants was on the increase. Only after 1948, when the maximal number of 466 Ist Islanders was recorded, this number started decreasing seriously. The biggest decrease was recorded in the period between 1971, when there were 386 inhabitants on the island, and 1981, when the census showed only 295 people i.e. 23.6% less than ten years earlier. In the following inter census period islanders continued leaving the island, which resulted in a new fall of about 21.4% i.e. there were only 232 people living on the island. According to the data of the last census made in 2001 there were only 202 inhabitants, which is the smallest number recorded from the first official census effected in 1857 when there were 332 people on the island.

Analysing in detail the basic demographic indicators and being acquainted with cultural-social conditions of life on Ist Island, it is possible to determine several time periods in the course of which relevant changes in the islanders' way of life happened.

Though the first official census was taken in 1857, there are some even older data. As early as 1527 there were 95 inhabitants registered. After that slow but constant grow was noticed so that in 1603 there were 100 people, in 1754 their number increased to 205, in 1818 to 215 and in 1825 to 230 inhabitants (FILIP, 1960). Until the 20<sup>th</sup> century most of islands including Ist Island were still isolated from the mainland, and the life of islanders depended on appropriate use of natural resources, which explains slow increase of population number. As arable areas are pretty scarce the local people had to go in for other economic sectors. So since earliest times Ist inhabitants engaged themselves in fishing. As the number of inhabitants was growing, in the second half of the 19<sup>th</sup> century, young islanders started emigrating first mostly overseas, in search of better life. In this period emigration still did not have major influence on the total population number. Only after 1945, owing to changes of life style and worse economic conditions, emigration intensified. This time it was not oriented only toward overseas but also toward bigger towns on the mainland. The greatest decrease, recorded between 1971 and 1981 can be directly connected with intensive industrialization and great increase of population in Zadar town, which became the first real gravitational centre not only for islanders but also for inhabitants of settlements and small towns of Zadar hinterland after World War II (FRIGANOVIĆ, 1974).

In the second half of the 20<sup>th</sup> century, because of stronger emigration of mostly younger inhabitants, only older people remained on the island, which had its effect on reproduction and birth rate. More and more unfavourable age structure in the sixties of the last century was the cause of significant death rate increase which resulted in negative natural increase (Fig. 3).

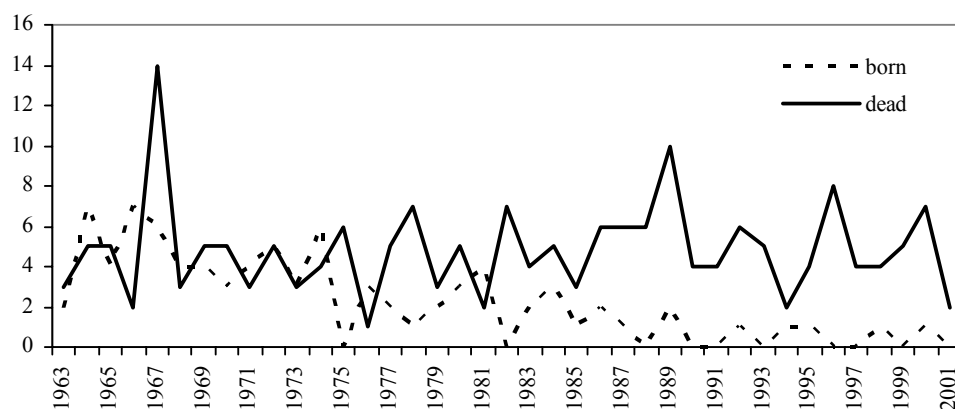


Fig. 3 Natural increase of Ist Island population from 1963 to 2001  
 Sl. 3. Prirodni prirast na otoku Istu od 1963. do 2001. godine

Comparing the data about population rate with those of natural increase it is possible to establish great lack of population, which is explained by intensified emigration. For example, in the period between 1971 and 1981 natural increase was -12. And as in 1971 there were 386 inhabitants the expected number should have been 374. However, according to the census of 1981, there were only 295 registered people on the

island. Consequently, in this period 79 people emigrated. Because of unfavourable natural population trend and migrations, demographic regression was very marked, which endangered further economic development.

### Age-sex population structure

Age-sex population structure synthesizes previous demographic analyses and is the result of disadvantageous relations between migrations and natural growth. Since the total number of Ist population decreased after World War II, age-sex pyramids made for census years, narrowed gradually (Fig. 4). The narrowing of the pyramid's base in 1991 and especially in 2001 is the result of decrease of young and adult population number and in consequence smaller birth rate.

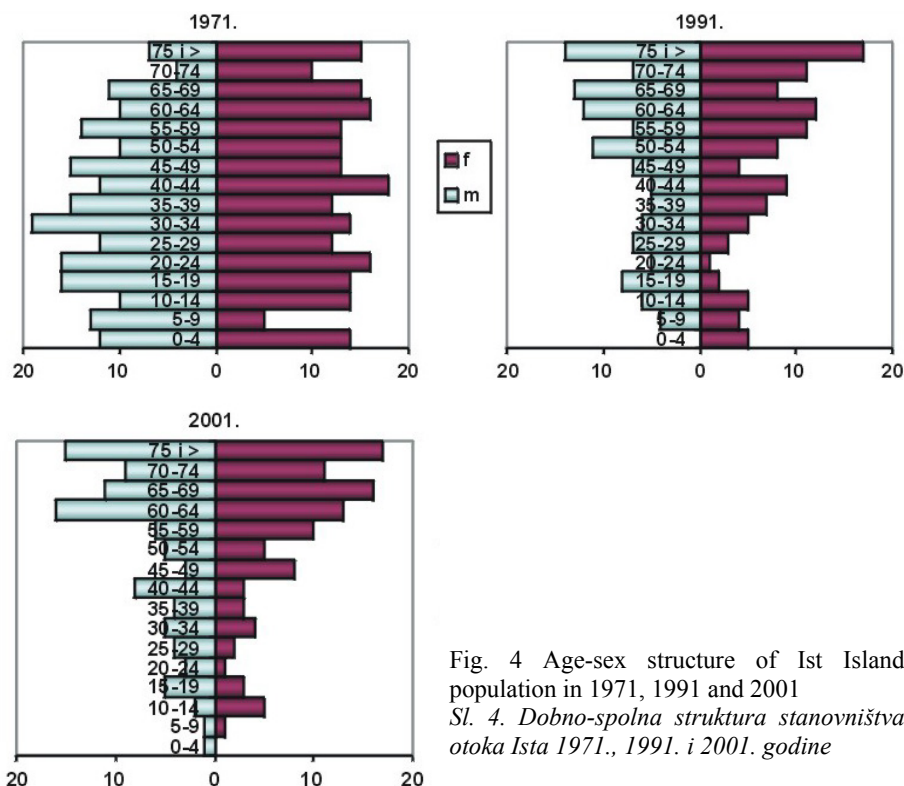


Fig. 4 Age-sex structure of Ist Island population in 1971, 1991 and 2001  
 Sl. 4. Dobno-spolna struktura stanovništva otoka Ista 1971., 1991. i 2001. godine

In 1971 the share of young population (aged from 0 to 19) was 23.9% and that of aged people (60 and over) was 21.5%. It is obvious that even then the structure was unfavourable as high share of old population pointed to total ageing and thereby to coming of demographic regression. Census data from 2001 prove these statements since share of old people increased to 59% and that of young population decreased to 9%. If



such trend continues it might lead to final dying of inhabitants as reproduction decreases constantly and with this the possibility of demographic revival. At the moment there are only 24 women of fertility age (from 15 to 49) and only 3 of them are between 20 and 29 (source: 11). The only chance of a possible demographic recovery is immigration of people from mainland, which is possible only if adequate preconditions for a normal way of life are offered. The island of Ist is not the only island that faces such problems. Consequently it is necessary to develop a general strategy of development for similar rural island milieus, which has to be based on the principles of sustainable development. Difficult conditions of life on islands, even if suitable financial help is offered, will still be a limiting factor for young people to return. So this problem must be approached with extreme caution.

### Modern changes in economic structure of Ist population

It is not possible to analyse economic structure in its entirety because the data of census in 2001 are not completely elaborated. But having examined census results from 1971 and 1991, and knowing economic situation on the island, present activity of islanders can, in a certain measure, be reconstructed. The only available data from 2001 are those relating to population activity, which are evidence of stated problems of development. Decrease of total number of inhabitants results in significant decrease of active people number. It must be pointed out that the process of emigration of the young and the increase of the aged resulted in decrease of working capability of total island population. As 54% of islanders are over 59 it is evident that the share of active population decreased in total from 29.9% in 1971 to 25.1% in 1991 (Tab. 1).

Tab 1 Active population on the island of Ist\*

*Tab. 1. Aktivno stanovništvo na otoku Istu\**

YEAR	Total population	Active population	Share of active in total (%)
1971	412	123	29,9
1991**	188	38	20,2
2001	202	52	25,7

\*in 1971 and 1991 population of Škarda Island was also included

\*\*Active people working abroad are not included in 1991

Source: 5,6 and 8

In 1971 great part of active inhabitants (16.3%) were employed in agriculture and fishing, 12.2% in traffic and even 54.5% were working abroad (Tab. 2). As Ist Island is famous for its fishing and nautical tradition, it is quite clear that the majority of people abroad were employed in these economic sectors. Most of those registered as temporarily absent, as time passed, emigrated permanently. In 1991 the situation with people working abroad was similar but the total number of active population decreased considerably. There were only 26 of them in Ist, and most important changes happened in primary sector of activity. Development of tertiary sector of activity and emigration of younger islanders disrupted economic structure. The number of fishermen and agrarians decreased, as it is the question of physically demanding jobs. All the rest were employed in services. Regarding economic structure it is evident that tourism was not particularly

developed and scarce tourist movements were more connected with nautical tourism. This one had no impact on the inhabitants' structure of activity.

Tab. 2 Employed population according to activity domain in 1971 and 1991

Tab. 2. *Struktura zaposlenih prema djelatnosti 1971. i 1991.*

Economic activity	1971		Economic activity	1991	
	total number	share (%)		total number	share (%)
Industry and mining	1	0,8	Industry and mining	0	0,0
Agriculture and fishing	20	16,3	Agriculture and fishing	4	7,0
Forestry	0	0,0	Forestry	0	0,0
Construction industry	0	0,0	Construction industry	1	1,8
Traffic	15	12,2	Traffic and connections	3	5,3
Trade and catering	8	6,5	Trade	7	12,2
Manufacturing	3	2,4	Catering and tourism	0	0,0
Residential-municipal activity	0	0,0	Manufacturing	4	7,0
Culture and social activity	5	4,1	Residential-municipal activity	0	0,0
Society activities and services	1	0,8	Educ., science, culture, inform.	4	7,0
Others	1	0,8	Health and social care	1	1,8
Out of economic activity	2	1,6	Administration, funds, societies	2	3,5
Temporary work abroad	67	54,5	Temporary work abroad	31	54,4
Total employed in the country	56	45,5	Total employed in the country	26	45,6
Total	123	100,0	Total	57	100,0

Source: 5, 6

### Change in the way of using dwellings as a consequence of deruralisation

In the last thirty years the process of depopulation changed significantly the structure of dwellings according to their use. Owing to migration of inhabitants to mainland, dwellings which were used as permanent residences, were being often abandoned and changed into places used occasionally. According to the data from census taken in 1971 the share of permanently inhabited dwellings on Ist Island was 75.5% and only 17.8% were used for weekend or in summer months (Tab. 3). According to the census taken in 2001, the total number of dwellings increased about 57% in comparison with the one in 1971. The number of permanently inhabited houses decreased negligibly (7) and in the mean time the number of houses for rest and recreation increased from 27 to 128. Nowadays, only 45% of the houses on the island are used permanently.

Tab. 3 Number and way of using dwellings on Ist Island in 1971 and 2001.

Tab. 3. *Broj i način korištenja stanova na Istu 1971. i 2001. godine*

Years	Total dwellings	Permanently inhabited dwellings				Temporarily inhabited dwellings		Dwellings used only for economic activities
		Total	Inhabited	Tempor. inhabited	Abandoned	Second homes	In the time of seasonal agricult. work	
1971	151	114	107	5	2	27	10	-
2001	237	107	90	4	13	128	-	2

Source: 3, 9; Škarda Island included (14 total dwellings in 1971, 16 total dwellings in 2001, estimated)

The result of migration from the island is not only conversion of exiting houses into second homes. The biggest problem is physical change which results in degrading cultural-historical ambiance in two ways:

Permanent abandonment of houses is reflected in their dilapidated exterior, buildings without windows, window frames, roofs caving in etc.

Selling houses to people who do not appreciate the value of traditional Dalmatian architecture. So, renewing old houses in new "modern" style, they endanger long cultural heritage, which is the basis of modern tourist offer, i.e. ambiance authenticity.

Similar changes in the use of dwellings were noticed also on other small inhabited Zadar islands (Tab. 4). The most unfavourable situation is on Silba and Molat islands. It is evident from presented data, that almost all settlements stated in table 6 are going through the process of deruralization and transformation from permanently inhabited settlements to weekend settlements. Taking in consideration spatial distribution of this new transformational process it is observable that changes are most noticed and most dynamical in settlements on smaller islands situated farther from mainland, which is directly connected with the power of deruralization process. Besides it can be seen that the share of second homes increased significantly where population was traditionally more oriented to fishing and navigation than to agriculture. It explains the fact that even after having migrated to the mainland they were able to invest significant financial means for building second homes. Considering the trend up to the present and demographic and economic situation, it can be predicted that the next census, which is to be taken in 2011, will show that the relations between mentioned parameters will be even more unfavourable.

Tab. 4 Share of second homes in total dwellings on small islands\* of Zadar in 1971 and 2001

Tab. 4. *Udio stanova za odmor u ukupnom broju stanova na malim zadarskim otocima 1971. i 2001. godine*

Settlement	Share of second homes in total dwellings (in %)	
	Years	
	1971	2001
Brgulje	11,3	64,5
<b>Ist</b>	<b>17,9</b>	<b>54,0</b>
Mali Iž	20,2	56,4
Molat	31,2	71,6
Olib	9,5	31,0
Premuda	0,0	51,6
Rava**	13,7	18,2
Rivanj	0,2	63,5
Sestrunj	1,3	52,8
Silba	47,9	72,5
Veli Iž	17,8	42,0
Vrgada	0,2	32,9
Zapuntel	12,0	55,7
Zverinac	6,5	16,3

\* among small inhabited Zadar islands there are also Škarda, Ošljak, Babac but since there are no data for 1971 they are not in the table, neither is Vela Sestrica where there is just a lighthouse

\*\* Data for Mala and Vela Rava are counted together

Source: 3, 9

Anthropogenic influence on a natural-geographic area has exceptional significance for its transformation, but it is to be regulated by law. Experience has proved that devastation of cultural tradition is frequent in the isolated island areas and prevention should be approached with more care especially when planning various strategies for development of island rural areas.

### **Transformation of the rural area**

From the earliest settling on the island of Ist, its inhabitants relied on the use of natural-geographical basis, which provided survival on a small isolated area. Communication with people on other islands and mainland settlements was limited because of its geographic position. Agriculture was the most important economic sector of activity besides fishing and navigation.

The island mostly belonged to two Zadar noble families: Lantana (mid 17<sup>th</sup> c. - 19. c.) and Ponte (18<sup>th</sup> c.). During this period there was not much change in autochthonous Mediterranean agriculture, cattle breeding and fishing existing since times immemorial. Namely the owners kept the relations of old feudal relations ("colonat") which lasted till the inhabitants bought the island. In 1740, 24 colon families had at their disposal small pieces of land (gardens, orchards) around their ground floor houses which can be seen at a then plan of the village. Also, the owners' house, the only one two storey building (*Casa di Patroni*) is well expressed near small pier (*mollo*) in the SE part of the village (FARRETTI ZAPPICH, 1740) (Fig. 5). The navigation developed more significantly from the beginning of the 19<sup>th</sup> c., after the collapse of Venetian and French rule and since Austrian government stabilized. A great number of Ist Islanders are employed abroad, most of them as sailors and workers on luxurious yachts and in marinas of French Côte d'Azur (FIJO, 1957; DRAGIĆ, 2002).

In the period from the 19<sup>th</sup> c. to mid 20<sup>th</sup> c., Ist Island was the most prominent one in navigation among the islands of Zadar archipelago besides neighboring Silba Island. There is a very comprehensive paper dealing with the Ist Island navigation, written in 1957 (FIJO, 1957).

In 1877 the maritime office was founded in Ist, which was the result of certain number of local sailors employed on sailing boats. In 1880 there were 17 small vessels in the village with 543 tons capacity, which made Ist the third port in Zadar-Šibenik region in regard to their number and the first one relative to registered tons. At the end of 19<sup>th</sup> century the first educated maritime officer was Mate Šegarić, Šimunov (FIJO, 1954). The local sailing fleet started decreasing at the very end of the 19<sup>th</sup> c. and the beginning of the 20<sup>th</sup> century, which was the consequence of steam shipping increase. But later, between two World Wars, Ist navigation and local fleet potentials increased again. In 1935 there were 15 vessels with 1557 NRT, and in 1939 12 vessels with 1389 NRT (FIJO, 1957). In many occasions the sailors and vessel owners collaborated with the partners from neighbouring islands, Olib, Molat (Zapuntel, Molat), Premuda, Silba, Lošinj etc. One of the later elaborations (FIO, 1968) showed that Ist Island was the seventh one according to the number (143) of seaman's book (*madrikula*) among the islands of Zadar archipelago in the period 1947-1966. It was a significant indicator, considering the fact that there is only one settlement on the island with relatively small number of inhabitants. Every year the port of Ist realises the traffic between 12.000 and 16.000 passengers as well as 300-1000 tons of local cargo (in 1928 - 281 t, in 1931 - 830 t, in 1946 - 293 t, in 1953 - 152 t, in 1974 - 999 t, in 1980 - 1222 t, in 1983 - 1240 t, in 1986 - 467 t, etc.).

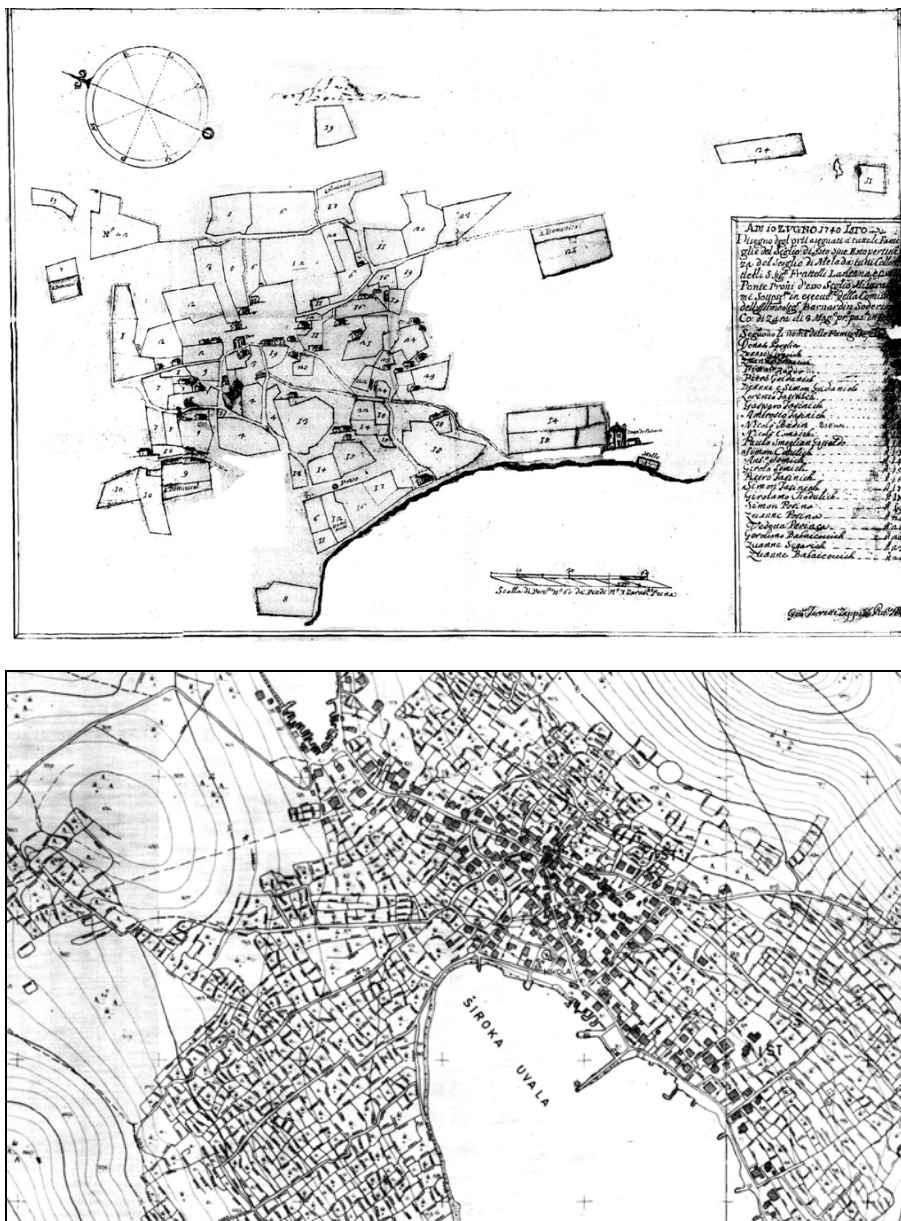


Fig. 5 Plans of the Ist village from the middle of the 18<sup>th</sup> (FARRETTI ZAPPICH, 1740) and by the end of the 20<sup>th</sup> c. (HOK, 1:5000, Ist)  
 Sl. 5. Planovi naselja Ist iz sredine 18. st. (FARRETTI ZAPPICH, 1740.) i s kraja 20. st. (HOK, 1:5000, Ist)

As far as maritime activities are concerned, shipbuilding has a certain tradition too. At the end of the 19<sup>th</sup> c. and in the first half of the 20<sup>th</sup> c., a small shipyard for wooden boats was activated.

Fishing was a very important activity until nowadays. Ist is often mentioned in old documents as an interesting fishing area, as well as its inhabitants as participants in long lasting law suits among villages of Zadar archipelago for the fishing rights (BASIOLI, 1962, 1973). In 1879 there were 25 fishing boats in the port of Ist, in 1910 there were 34, 1939: 25, and in 1954: 29 (FIJO, 1954) and at the end of 19<sup>th</sup> century 22.

Different maritime activities reflected in the improving of cultural and social life, in the innovations in agriculture and cattle breeding, what directly brought to changes in landscape and environment, as well as in standard (building of houses and weekend houses etc.).

The existence of some toponyms proves an early beginning of fishing. The toponym *Sijuanje* on the NE coast of Široka Bay is one of the most interesting (from Croatian "*šijanje*" – reg. backing), which most probably refers to the location where fishing nets were being pulled during fishing (SKRAČIĆ, 1996). Early development of fishing is directly connected with lack of arable land and limited possibilities of agriculture development.

Development of settlements on all Croatian islands depended on natural-geographic conditions of agricultural development as the basic factor of economic activity. As time was passing fishing was getting more important role in the areas where arable land was not sufficient to produce enough food in order to meet the needs of islanders. The same situation was on the island of Ist where demographic and spatial developments were limited owing to the deficiency of arable land. Olive grow was one of the basic agricultural activities since it can be successfully cultivated in places where other products are fruitless. The most significant changes in the development of agriculture happened in the 20<sup>th</sup> century, and they are directly connected with the process of depopulation. Comparing the data concerning the use of land on Ist Island in 1951 and 2003 (Tab. 5) significant changes are noticeable in the superficies of cultivated land i.e. the share of vineyards and arable land as a result of the process of deagrarisation. Since at the moment old age groups of people are in a majority, and wine grape growing demands much physical effort, the areas of vineyards decreased 86 % during this period.

Table 7 presents official data about land-use categories on the island of Ist, which point to illogicality in illustrating the areas of woods and pasture grounds, which can be proved only by visiting the area. Namely so rapid increase of pasture surfaces and decrease of forests would indicate, in many cases, to an intensive exploiting of forest vegetation (in this case of maquis) as a consequence of intensive cattle breeding, especially goat-breeding. But on the most of small inhabited Croatian islands, where a strong process of deruralization is present, the pasture surfaces decrease because of neglecting agriculture, which contributes to the renewal of authentic vegetation and that is also the case of Ist Island. In this way pastures are slowly transformed into maquis, which is registered in the cadastre as woods. Since maquis dominates on Ist Island it is evident that data about increasing of pastures share and decreasing of the share of woods are not correct. The situation in the area shows clearly that the process of deagrarisation is exceptionally present in consistence with unfavourable demographic situation. This process is accompanied by reforestation of denuded pasture rocky ground.

Tab. 5 Basic land use categories on Ist Island in 1900, 1951 and 2003 (in ha)

Tab. 5. Osnovne kategorije korištenja zemlje na otoku Istu 1900., 1951. i 2003. godine (u ha)

Land use categories	1900		1951		2003	
	area (ha)	share in total (%)	area (ha)	share in total (%)	area (ha)	share in total (%)
Plowfields, gardens	49,7	4,6	22,6	2,1	21,7	2,0
Vinyards, orchards	93,0	8,6	28,8	2,7	3,9	0,4
Pastures	43,0	4,0	174,8	16,2	935,8	86,7
Woods	883,0	81,9	771,0	71,6	31,1	2,9
<b>Total fertile land</b>	<b>1068,7</b>	<b>99,2</b>	<b>997,2</b>	<b>92,6</b>	<b>992,5</b>	<b>92,0</b>
<b>Non fertile land</b>	<b>8,9</b>	<b>0,8</b>	<b>80,4</b>	<b>7,4</b>	<b>85,1</b>	<b>8,0</b>
<b>Total</b>	<b>1077,6</b>	<b>100,0</b>	<b>1077,6</b>	<b>100,0</b>	<b>1077,6</b>	<b>100,0</b>

Sources: 10 and D. FORETIĆ, 1974.

Since the larger part of the island is overgrown with various stages of maquis it is an excellent basis for developing cattle-breeding, in the first place goat-breeding, which is at the moment poorly represented. In the past the number of cattle depended on precipitations and their distribution. In dry years, when water reserves on the island were not sufficient to supply islanders cattle dying was not rare, so life depended exclusively on fishing and land use. In the past the number of cattle was more impressive than it is recently. In 1955 there were 548 sheep (with Škarda), 323 pieces of poultry (FIJO, 1957). In 1977 there were 444 sheep, 3 goats, 2 pigs, 264 pieces of poultry and 11 beehives on the island. In 1981 there were 178 sheep (with 6 on Škarda Island), 3 pigs, 273 pieces of poultry (with only few on Škarda). In 1991 there were 138 sheep (4 on Škarda), 206 pieces of poultry, also a few goats and pigs. If the problem of water supplying is solved, in the near future it will be possible to intensify cattle breeding, which would improve living conditions of the local people and enrich so far poor tourist offer.

### Geographical basis for the development of tourism

Though the inhabitants of Ist Island are well known as fishermen and sailors, tourism has been considered lately as the only alternative to traditional activities on all Zadar islands. Investments in tourism are more intensive on larger islands of Zadar archipelago. So the first serious attempts of its development in 1970ies started on more developed Zadar islands with larger superficies. For example hotels were built in three settlements out of eleven on Dugi otok Island. There were also significant investments in infrastructure and nautical tourism. So besides existing hotel, a marina was built on Iž Island and also at Kukljica settlement, where a bigger tourist village has been built. On other islands tourism developed sporadically, and tourist activity was exclusively connected with renting rooms and apartments in private ownership (Islands Silba, Olib and others).

The development of tourism on Ist Island can be followed only since 1980ies when single individuals – private owners started renting houses, apartments and rooms. At the beginning tourist activity was very weak and it intensified only after 1985 (Tab. 6).

In the period 1990-1955, as a result of war, tourist activity practically broke off on almost all islands, so it happened on Ist Island too. That is why there is no record for this period.

Tab. 6 Number of domestic and foreign tourists and overnights on Ist Island from 1985 to 2003  
*Tab. 6. Ukupan broj i broj noćenja domaćih i stranih turista na otoku Istu od 1985. do 2003. godine*

Year	DOMESTIC		FOREIGN		TOTAL	
	tourist number	overnights	tourist number	overnights	tourist number	overnights
1985	-	-	-	-	360	3770
1986	293	3046	142	1264	435	4310
1987	0	0	0	0	0	0
1988	190	1770	120	1130	310	2900
1989	90	500	80	910	170	1410
1990-1995	-	-	-	-	-	-
1996	15	105	3100	3995	3115	4100
1997	157	440	2757	4250	2914	4690
1998	20	148	337	2393	357	2541
1999	32	333	198	1231	230	1564
2000	4	28	230	1340	234	1368
2001	10	85	86	642	96	727
2002	21	141	206	1478	227	1619
2003	-	-	-	-	9735	10891

Source: 12

After 1995 Croatian tourism started recovering, and so did it in Dalmatia. Tourist establishments were being restored and, owing to the constant grow of tourist movements, the number of persons interested in investing money for renewal of old objects and building new tourist facilities increased. An exception in total is 1997. It was when the interest of tourists from Croatia as potential destination went down because of the war in Kosovo and NATO bombardments of Serbia.

Consistently with these trends, a significant increase of interest in development of tourism has been noticed also in Ist Island. Thanks to its favourable natural-geographic basis nautical tourism has the best prospects, and the position of the island with the Kvarnerski Zaljev Bay in the NW and National Park "Kornati" in the SE contribute to these chances. Owing to its specific shape there are two big bays: Kosirača Bay facing NW and Široka Bay with a SE exposure, which are favourable anchorages. As the table 6 shows the number of tourists significantly increased in comparison with previous years. But if we compare this number with the number of overnights the proportion is 1:1, which means that it is a question of one-night tourists i.e. boaters who used 40 locations scheduled for yachts and boats. Concessionaire of these locations is Agricultural Cooperative of Ist (PZ "Ist").

Thanks to favourable climate conditions, geographical heritage and possibility of agricultural economy development, especially goat breeding and olive growing, Ist Island might become an important tourist destination. The basic drawback of developing process is the shortage of young population. This one should be encouraged to the benefit of further island development.



## Conclusion

In the second half of the 20<sup>th</sup> century large majority of small inhabited Croatian islands underwent a significant socio-geographic transformation, which was the result of deruralization and deagrarisation negative processes. The island of Ist is one of those small inhabited Zadar islands where these changes are very pronounced because of its geotrafic position – originator of its traffic isolation even in modern time, when a remarkable progress in maritime traffic has been registered in the region.

Migration to the mainland started in the 19<sup>th</sup> century as a result of agrarian overpopulation and desire for better life. This is why final destinations of first emigrants were overseas countries. At the beginning emigration was moderate and did not have special impact on the total number of Ist inhabitants, but its intensification in the second half of the 20<sup>th</sup> c., which was due to the occurrence of a first real gravitational centre i.e. Zadar, and sudden development of industry, resulted in strong depopulation. The young are emigrating, the old are dying, and this puts into question further existence of the settlement.

Demographic regression reflects also on geospace, i.e. landscape features. Deruralisation often leads to deagrarisation, which is logical with regard to the decrease of labour. Besides the changes of economic structure of inhabitants there are evident changes in space. So the number of plough-fields and vineyards decreased in favour of pasture grounds, then decreasing of pasture land to advantage of woods in the period of some fifty years. The peculiarity of Ist Island is that arable superficies are restricted to a small space just near the settlement. But conditions for agrarian exploitation of the space exist if we take in consideration the domination of maquis, which can be used in the development of goat breeding.

Longstanding development of navigation is important because numbers of inhabitants work on foreign ships and luxurious yachts whose parent ports are situated on the Côte d'Azur. That explains recent more intensive investments on the island. The problem is that Ist Island, like some other small islands, is slowly transformed into a weekend, or seasonal settlement, which increases the danger of its losing the basic characteristics of typical Mediterranean island ambiance, and which contributes to cultural-historical degradation of the space.

Future development of the island must be founded on exploiting natural bases and on preservation of cultural tradition, which can attract foreign tourists. Autochthonous and, if possible, organic agricultural products should be included into tourist offer.

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## SAŽETAK

### **Anica Čuka, Damir Magaš: Sociogeografska preobrazba otoka Ista**

Otok Ist čini dio vanjskog niza zadarskog otočja. Nalazi se između otoka Škarde na SZ i otoka Molata na JI od kojeg je odijeljen 170 m širokim prolazom Zapuntel. Zbog relativno malene površine (9,65 km<sup>2</sup>), velike vertikalne raščlanjenosti i geološke građe koju karakterizira dominacija vapnenca, na otoku nema većih obradivih površina, što je oduvijek bio ograničavajući faktor gospodarskog, a time i demografskog razvoja. Premda je otok bio kontinuirano naseljen od prapovijesnog doba, veći porast broja stanovnika bilježi tek sredinom 18. stoljeća, kad je na otoku živjelo 205 žitelja.

Zbog prometne izoliranosti opstanak na otoku Ištu sve do druge polovice 20. stoljeća ovisio je isključivo o iskorištavanju prirodnih resursa. Na reljefno blažim obroncima II dijela otoka Iščani su se intenzivno bavili maslinarstvom, dok su vinogradarstvo i povrtlarstvo bili prostorno ograničeni na uski središnji dio uz samo naselje. Kako otok ima obilježja tipične sredozemne klime, česte ljetne suše negativno su se odražavale na poljoprivrednu aktivnost, što je utjecalo na rani razvoj ribarstva i pomorstva.

Unatoč kontinuiranom razvoju druga polovica 20. stoljeća može se okarakterizirati kao razdoblje značajnih negativnih demografskih i gospodarskih promjena. Uvjeti života na većini manjih, naseljenih, od kopna udaljenijih otoka znatno su se izmijenili što je u konačnici rezultiralo snažnom emigracijom, najprije prema prekomorskim zemljama, a od 70-ih godina 20. stoljeća i prema obližnjem kopnu. Kako se pojačava odseljavanje pretežno mlađeg stanovništva, smanjuje se i reprodukcija što rezultira nepovoljnom dobnom strukturom, tj. odumiranjem stanovnika. Najveći pad broja stanovnika zabilježen u razdoblju između 1971. i 1981., kad se broj otočana smanjio sa 386 na 295, tj. za oko 23,6% može se izravno povezati s intenzivnim razvojem industrije i naglim povećanjem broja stanovnika u gradu Zadru koji je nakon Drugoga svjetskog rata postao prvo gravitacijsko središte stanovništvu otoka, ali i zadarskog zaobalja. Prema podacima posljednjeg popisa stanovnika izvršenog 2001. godine na otoku žive svega 202 žitelja.

Depopulacija i starenje lokalnog stanovništva uzrokovali su intenziviranje procesa deagrarizacije. Analiza podataka Područnog ureda za katastar u Zadru o korištenju zemljišta na otoku 1951. i 2003. godine pokazala je da se intenzivno smanjuju površine pod maslenicima i vinogradima, dok se istodobno povećava udio autohtone vegetacije. Jedini povoljan učinak obnavljanja sredozemne makije je mogućnost revitalizacije stočarstva, posebice kozarstva, koje na otoku trenutno nije razvijeno.

Emigracija s otoka značajno se odrazila i na izgled samog naselja. Usporedba rezultata popisa stanovnika iz 1971. i 2001. o korištenju stanova upućuje na intenziviranje preobrazbe stalno korištenih u povremeno korištene stanove. Kako je veći dio Iščana odselio na susjedno kopno, dio njih na otok dolazi vikendom ili ljeti. Zanimljiv je podatak o padu broja stanovnika za oko 50% u razdoblju između 1971. i 2001. te istodobnom povećanju ukupnog broja stanova za oko 57%. Potrebno je naglasiti da je povećan isključivo broj stanova za odmor, dok je smanjen broj stanova za stalno stanovanje. U ruralnim, otočnim sredinama u kojima je prisutan snažan proces odseljavanja stanovnika, velik je problem trajno napuštanje stanova, što se odražava u njihovu oronulom vanjskom izgledu i zbog čega je ozbiljno narušeno dugotrajno arhitektonsko dalmatinsko nasljeđe.

Budući razvoj otoka svakako treba temeljiti na primjerenom korištenju prirodne osnove, održivom razvoju turizma i poljoprivrede, vodeći računa o očuvanju kulturne tradicije. Ipak, da bi se moglo realno govoriti o revitalizaciji ovog prostora, potrebno je u prvom redu riješiti problem nedostatka stanovništva, što je moguće jedino poticanjem odseljenih Iščana na povratak.