

## **PROBLEMS AND PERSPECTIVES OF ORGANIC FARMING IN SLOVENE ISTRIA**

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### **Abstract**

#### **Problems and Perspectives of Organic Farming in Slovene Istria**

In Slovene Istria, natural conditions for the development of organic farming are good, though we have only witnessed the rise of organic farming over the last few years. Due to the lack of data related to organic farming in Slovene Istria, field-work was conducted in spring 2008 with some additional research in 2009. Questionnaires and interviews with organic farmers include various aspects: characteristics of their farming activities, demographic and socio-economic features, and others. The prevailing branches of organic farms in Slovene Istria are olive-growing and mixed production. We can also mention a very high educational level of farmers and positive age-structure of households on organic farms. Possible perspectives related to organic farming in the studied area have been discussed in the conclusion of the paper.

#### **Key words**

Slovene Istria, Slovenia, rural areas, sustainable development, organic farming

## 1. Introduction

Farming is, besides industry, traffic and the energy sector of the economy, perceived as one of the major environmental polluters for its negative effects on the entire biosphere. Questionable, at the same time, is the quality of goods and products grown by using artificial fertilizers and phytopharmaceutical means or, on the other hand, quality of products that can be categorized as genetically modified organisms (GMO's). More and more widespread among laics and experts is the perception that links many illnesses of the 'new age' to the mode of production and to the use of various (potentially) dangerous chemical ingredients in farming.

Organic farming, perceived as a people- and nature-friendly form of farming, is included in the farming-environmental programs. Unlike conventional (intensive) farming, known for its many negative effects, organic farming only exerts a minimal degree of negative effects.<sup>1</sup> This is mainly because of the prohibited use of artificial mineral fertilizers, pesticides, herbicides and limited use of fungicides (Table 1).

Tab. 1: Basic differentiation between ecological and conventional farming.

	Organic	Conventional
Improvement of fertile ground	proper procedures of tilling the land, organic fertilization, rotation of crops	the use of mineral fertilizers
Plant nutrition	indirect (nutrition release from the ground)	direct (the use of liquid mineral fertilizers)
Plant protection	Abolition of causes, prevention of new illnesses, pests and the growth of weed	abolition of symptoms by the use of phytopharmaceutical means
Cattle-breeding	proper living conditions (outdoor, space, light)	battery breeding of poultry (indoor)
Cattle nutrition	optimal quality of home grown nutritive substances	optimal supplement nutrition (protein and other additives)
Animal treatment	increasing resistance	treatment of (illness) symptoms

Source: Bavec, 2001, 22.

Bavec defines organic farming as the mode of sustainable farming that is, regarding food cultivation, characterised by a systemic balance between ground-plant-animal-human and joined circulation of nutritive substances in the system (Bavec 2001, 9). The basic premise of organic farming, according to Lampkin (1994), is sustainability that, apart from maintaining renewable sources, includes environmental and social sustainability. In Europe, terms like organic, biological, i.e. organic farming are being used, whereas in Slovenia, we use the term organic farming. The prefix bio- is used for products and foods (Kocjan Ačko 2002).

The primary aim of organic farming is therefore the production of healthy, quality vegetable and animal products, i.e. products that are congruent with nature and its laws (Bavec 2001). Other goals in pursuit of organic farming can be included under the following points (Štancar Poprask 2008):

<sup>1</sup> Several studies investigate the effects of organic farming on the environment and compare these effects to conventional farming. Most authors agree that negative effects are smaller with organic farming. However, the analyses differ in the assessment of to what degree the negative effects are smaller with organic farming. We believe these incongruities appear due to differing methodological approaches. See also the complex interdisciplinary study 'The Environmental Impacts of Organic Farming in Europe' (Stolze et al., 2000).

- maintaining fertile ground,
- circulation of nutrients,
- proper breeding and feeding of animals,
- protection of nature life-sources (water-ground-air),
- minimum loading of environment,
- active protection of environment and biotic diversity,
- protection of energy and resources and
- ensuring jobs in farming.

Basic prohibitions in organic farming are (Bavec 2001):

- use of chemo-synthetic means for the protection of plants,
- use of disinfected seed,
- use of liquid fertilizers,
- use of synthetic additives in nutrition,
- use of animal derivatives in nutrition,
- use of genetically modified organisms (GMO's) and
- preventive healing of animals by using chemotherapeutics (kokcidystatics, antibiotics).

According to Lampkin (1994), organic farming owns the potential of ensuring various benefits, like: environmental protection, maintenance of non-renewable sources, better food quality, reduction of over-production and redirection of farming towards market demands.<sup>2</sup> Besides farming-environmental aspects, organic farming also has a socio-economic side, since it is an economic discipline that provides earnings and better life conditions to an increasing number of people and is, therefore, a »market niche«.

Even though the situation regarding organic farming is relatively well-known in Slovenia in general, this is not true for the area of Slovene Istria. This presentation of the research results (based on research among organic farmers) in Slovene Istria is, in this respect, one of the first academic contributions of its kind.

## 2. Methodology

An overview of relevant sources and literature pointed out a definition of the role of organic farming according to developmental plans of Slovene Istria. We therefore examined several existing developmental documents: Regionalni razvojni program Južne Primorske / 'Južna Primorska' regional developmental programme (RRP 2006), Razvojni program podeželja / Countryside developmental programme (RPP 2006) and Program varstva okolja za Slovensko Istro / Environmental protection programme in Slovene Istria (PVO 2006). For acquiring additional information regarding the implementation of the programmes related to organic farming and views on the developmental role of organic farming in this region, we referred (via email) directly to the Regional Developmental Centre, Koper (RRC).

Due to lack of empirical evidence on organic farming in Slovene Istria, in June and July 2008, a field research study (Survey 2008) was applied with the intention to catalogue and lead a discussion with all organic farmers included in one of the control organisations. We designed a survey questionnaire containing twenty-six

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<sup>2</sup> 'Redirection into organic farming, together with simultaneous modification of marketing, could possibly mean the exit from the bewitched circle of increasing amounts of production. Besides that, it could also mean a real opportunity for preservation of many farms and respective jobs' (Bavec 2001, 21).

questions and tried to encompass a wide spectrum of specifics and aspects of economic farming in Slovene Istria. The survey sample represents organic farmers from Slovene Istria that are included in control mechanisms of organic farming. From the total of thirty-seven organic farmers included in control organisations, we managed to perform the survey with the cooperation of thirty-three. We interpreted and mapped (showed on a map) the results with the help of Geographical information systems (GIS), namely Arc map software. We also conducted interviews with Boris Fras, an organic farmer from Ankaran and the president of the Slovene Association of Organic Farmers (Fras 2008).

### **3. Some geographical features of Slovene Istria**

Slovene Istria is neither a historical region nor did it have its contemporary name until the solution of political problems and accession to Slovenia in 1954. By the end of the 19<sup>th</sup> Century and during the 2<sup>nd</sup> World War, the name Slovene Istria began to spread. After the war, several names appeared relating to this area (Obala – The Coast, Obalna pokrajina – Coastal region, Koprsko, Koprsko primorje, Koprška pokrajina, Primorje, Slovenska Istra, Istrska Slovenija, Šavrini, Šavrinska Brda, Šavrinsko gričevje, Obmorska regija, Koprška regija) and yet none of them ever came into general use (Ogrin 1995).

Slovene Istria encompasses areas of the municipalities of Koper, Izola and Piran. Geographically, it can be divided into Kraški rob (The Karst edge), Šavrinsko gričevje (The Šavrini hills), and oz. zaledje in na obalni pas (The Coastal belt). The area of three coastal municipalities reaches from the slopes of Slavnik and Podgorski Kras above Kraški rob on the East towards the Croatian border, above the Dragonja valley on the South and the Adriatic Sea on the West. The Northern border of the region is the State border to Italy. The middle part of the region consists of the Šavrini Hills rising to approximately 500 meters above sea level.

The region is one of the smallest Slovene regions, while at the same time, among the most developed. Within the region, significant socio-economic and physical-geographic differences appear. The entire area of Slovene Istria (the municipalities of Koper, Izola and Piran) has around 80,000 inhabitants or approximately 4% of Slovene residents. Approximately 54,000 people live in urban areas that are placed near the coast and show a high level of urbanization. The coastal area is perceived as an economically highly developed area with strong and successful enterprise and tourism, a high level of urbanization, developed infrastructure and positive demographic and economic indicators (proven also by indicators like enterprise profitability and population purchasing power), (RRP 2006, 31):

- the net profit per employed person exceeds the Slovene average and
- population purchasing power (PPP), measured by the height of gross basis for income-tax per capita exceeds the Slovene average.

On the other hand, in recent years, the regional countryside has been dealing with many problems and thus remains demographically, socially and economically underdeveloped. The most problematic issues of the (Slovene) Istrian countryside are: emigration to cities, high levels of aged population, low educational level, low infrastructure, deagrarianisation, growing over of the land, decay of natural and cultural heritage, decay of building assemblage (RRP 2006, 31).

The decrease in population began (mostly in the Southern and Southeastern parts) at the beginning of the 19<sup>th</sup> century and has been continually rising since then. The migration trajectory was pointed towards lowlands, namely cities on the coast. The majority of population firstly emigrated to Trieste and later on (along with economic prosperity and urbanization) to other Slovene coastal cities as well. Because there was no economic development that would lead to better employment options in the countryside, the area is characterized by strong deagrarianisation. This consequentially led to a high level of daily migration into coastal cities. The most endangered are distant and higher placed villages with poor traffic connections and other infrastructure (Komat 1999).

It still needs to be emphasized that these negative trends have been levelling out in recent years, i.e. have been changing, which especially applies to bigger settlements closer and more accessible to the cities on the coast. Also, recently, many young families have decided to stay in the countryside (RRP 2006, 31).

#### **4. Estimation of natural conditions for (organic) farming in Slovene Istria**

In Slovene Istria, natural conditions are generally favourable for organic farming. This is evident from the data on tilling areas that, in (Slovene) Istria, represent a higher percent of all agricultural areas than the Slovene average. However, it needs to be emphasized that the intensity of agriculture in Slovene Istria varies greatly (due to large physical-geographic differences) within the region. A large part of the countryside (hinterland) is perceived as less appropriate for agriculture, therefore agriculture in these parts is less intensive in comparison to in the southwest, which is much more appropriate for tilling (Rejec Brancelj 1995).

Due to the above-mentioned physical-geographic differences, it is difficult to give a common assessment of favourable, less favourable and unfavourable natural farming conditions for the entire region, yet we have decided (on the basis of the collected data and gathered information on physical-geographical characteristics of Slovene Istria and our own (expert) views to provide a common estimation, whereby we mostly emphasize favourable and less favourable attributes of natural conditions for farming in Slovene Istria (in comparison to Slovenia).

Very favourable conditions:

- temperatures,
- amount of solar radiation,
- length of vegetation period and
- phenological conditions.

Mediocre favourable conditions:

- relief and
- pedological conditions.

Less favourable conditions:

- distribution of rainfall,
- potential danger for drought,
- danger of white frost and frost and
- winds.

According to natural conditions, the most favourable discipline is wine-growing – wine-leaves can grow on poorer and less fertile soil and are more resilient to lower temperatures and deficit of water. The best areas for wine growing are The Sečovlje

valley, the hilly hinterland of Izola and the upper Rižanska valley in Miljski polotok (the semi-island of Milje). Potentially favourable areas for wine growing are also the accumulation flats of water streams (Dragonja, Drnica) and joined areas on the ridge in the hinterland – from Šmarje across Merezige to Topolovec and Pregare. Less appropriate areas are steep, north-facing and Karst areas 500 meters and higher above sea level.

Potential fruit-growing areas mainly correspond with the above-mentioned wine-growing areas, but are only half the size (in comparison to wine-growing) due to higher sensitivity of fruit types (mostly early season types like cherries, apricots, peaches, etc.) to lower temperatures (frost). At the same time, fruit-growing is mostly associated with the irrigation of growing areas. For the growth of fruit, the most favourable areas are those of accumulation flats of water streams (Dragonja, Drnica, Rižana) and areas and ridges facing the sun and up to about 300 meters above sea level. Regarding the potentials and perspectives for development, the growth of vegetables (early season types) is the discipline in which the differences between coastal and inner hinterland areas become the most evident. Potentially favourable areas for the growth of early season types of vegetables in inner hinterland areas are practically non-existent, since this agricultural discipline is conditioned by characteristics of the Mediterranean climate, i.e. higher winter and spring temperatures. Therefore, only the areas of accumulation flats without erosion and with watering potential are suitable for early season types of vegetable (Plut 1976).

Tab. 2: Division of Slovene Istria according to the natural potential for farming (wine-growing, fruit-growing, vegetable-growing) in groups (1 – lowest potential, 5 – highest potential).

Group / Range	Number of (cadastral) municipalities	Proportion of the entire area in %
1.	4	9.1
2.	13	25
3.	19	43.2
4.	9	18,2
5.	2	4.5

Source: Plut, 1976.

According to the indicated data, practically the entire costal region (with the exception of the towns of Koper, Izola and Piran) has a high natural potential for farming. The natural conditions for farming are also favourable in the nearer (inner) hinterland and in the hearts of the Šavrini hills (with the exception of the cadastral municipalities of Nova vas and Truške). The areas with the lowest natural potential are in the eastern part of the hinterland. These areas can also be perceived as appropriate for the development of organic farming. This claim can be supported by the fact that organic farming in Slovenia developed primarily in the most distant areas where the natural conditions for (intensive) agriculture are more difficult. We estimate that natural conditions in the hinterland are suitable mostly for organic cattle-breeding, breeding of sheep, some field cultures (grain, potatoes, etc.) and fruit-growing (figs, kakis, etc.). A significant advantage of the hinterland is that, in the past, extensive cultivation exerted only modest (negative) effects on the

environment and there are potentials for larger organic farms. Our estimation is that a significant part of Slovene Istria is suitable for organic farming.



Fig. 1: Natural potential for farming (wine-growing, fruit-growing and vegetable-growing) in Slovene Istria by cadastral municipalities (Survey 2008).

## 5. Organic farming in Slovene Istria: (current) situation and perspectives

According to data from the three Slovene operational control organisations there were thirty-seven organic farms in Slovene Istria in 2008, of which thirty-four were 'family farms'. Five (family) farms have a portion of their land included in integral cultivation and another portion in organic cultivation<sup>3</sup>. The share of family organic farms in comparison to all family farms in Slovene Istria is only 1.6% and is almost equally divided among the three coastal municipalities (Bureau Veritas 2008, IKC 2008, KON-CERT 2008, PKG 2002).

Organic farms in Slovene Istria are relatively small<sup>4</sup>, since over half of them reach up to the size of 5 ha of farm land in use, while only one fifth of them spread over 10 ha. The average size of all organic farms is 6.96 ha, while the average for family organic farms is still lower: 5.66 ha. By far the largest, with over 40 ha (mostly vineyards) is the estate of the Brič corp., while the largest family farm is situated in Lukini and reaches 26 ha of tilling areas (mostly fields). The smallest family farm is only 0.47 ha in size (Fig. 2).

<sup>3</sup> Even though these are 'mixed' farms, in our analysis, they are included as pure organic farms. Yet, we hereby considered only surfaces under organic control.

<sup>4</sup> This can be attributed mostly to the heritage of former (Italian) hereditary law and specific natural conditions.

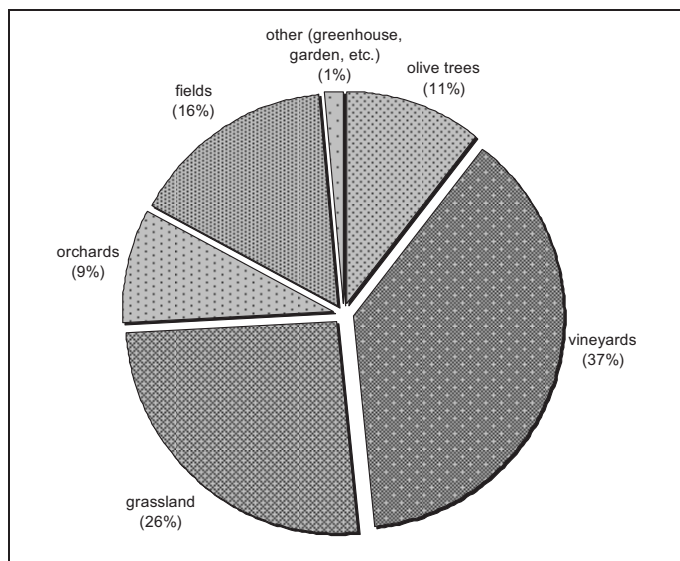


Fig. 2: Organic land by land use in Slovene Istria (Survey 2008).

According to the survey data (Survey 2008), there are approximately 231 ha of farming surfaces under organic supervision<sup>5</sup>. Supervised farming areas in the possession of family farms reach up to about 170 ha or 4% of all farming surfaces in use in the possession of family farms in Slovene Istria. They are mostly vineyards (87 ha), of which almost 83 ha are in the municipality of Koper. We need to emphasize that 37 ha, i.e. almost half of organic vineyards, belong to the Brič corp. estate (Tab. 3).

Tab. 3: Organic land by land use by municipalities in Slovene Istria (ha).

Municipality	Olives	Vineyards	Grass	Fruits	Fields	Gardens	Green-houses	Other (decorative plants)	Total
Koper	14.6	82.7	36.8	6.4	29.8	0.42	0.11	2.5	173.3
Izola	2.8	4.2	1	13.6	2.9	/	/	/	24.5
Piran	7	0.15	22	/	3.8	0.11	0.05	/	33.1
Total	24.4	87	59.8	20	36.5	0.53	0.16	2.5	230.9

Source: Survey, 2008.

The prevailing farming disciplines are olive-growing (however, olives take over only about 10% of all organic surfaces) and mixed types. Five farms are purely wine-growing farms, one farm is agriculture oriented, one farm is vegetable-growing oriented, whereas purely fruit-growing and cattle-growing oriented farms do not exist. There are almost no farm animals on the organic farms. Altogether, there are only 60 chickens, 20 horses, two goats, one pig and one donkey, and no cattle (Survey 2008).

<sup>5</sup> Since our survey did not encompass all organic farms in Slovene Istria, we assume that the range of organic surfaces is slightly larger than our data shows.



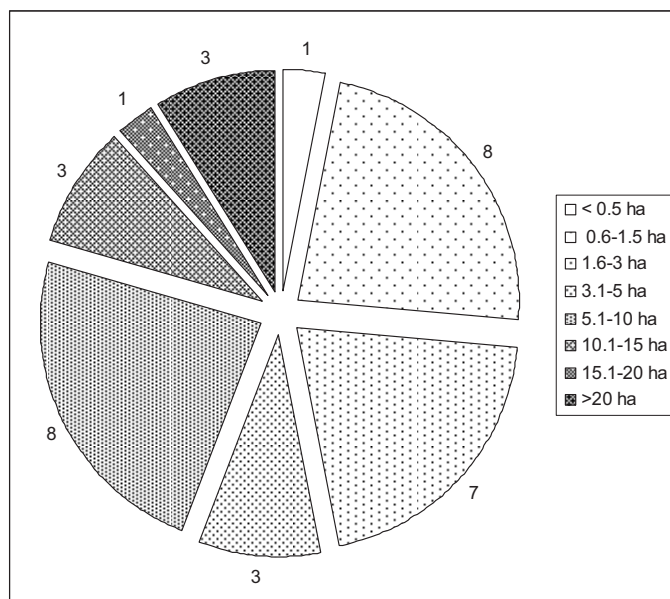


Fig. 3: Sizes of organic farms in Slovene Istria (ha) (Survey 2008).

Minimum presence of farm animals triggers the question of fertilization of grounds. In organic farming, farmers should strive towards the use of manure and compost produced on the farm. Over half of the surveyed organic farmers fertilize their surfaces exclusively with purchased fertilizers, as prescribed by the rules of organic farming. Approximately one fifth of farmers fertilize their surfaces exclusively or mostly with domestic (home produced) manure and/or compost. Somehow surprising is the fact that over 25% of farmers do not fertilize tilling grounds at all. Among these, the (new) olive- and wine-growing farmers prevail. In regard to this, we must emphasize that olive- and wine-growing is practiced on surfaces that do not need to be fertilized every year; besides, some tilling land (with some farmers only recently having started organic farming) was intensively fertilized in previous years.

There are not many full-time farmers, since organic farming is the main source of earning to only five surveyed farmers. However, a vast majority (27) of the surveyed farmers are market oriented and – what is most important – do not experience difficulties regarding sales. In some cases, even excessive demand for certain products exists. Almost half of the respondents market their products and goods exclusively at homes. One third, however, market their goods in several ways: at home, (organic) markets, various events and fairs, in shops, supermarkets, abroad, restaurants, hotels and wine-houses (Survey 2008).

In the end, we can only point to very favourable socio-demographic indicators of organic farming in Slovene Istria. Hereby, we mostly refer to favourable age composition of families and education of masters of organic farms. High educational average of farmers (masters) – over half of the respondents have college or university education – is in this respect, very positive (Survey 2008).

Tab. 4: Valuation of organic farming in Slovene Istria.

Positive	Negative
Composition of organic farm surfaces	Development (proportion of organic farm surfaces and organic farms)
Educational level of owners of organic farms	Small number of livestock
Age composition of families on organic farms	Low level of surfaces dedicated to (early) growing of vegetables and fruits
Vast majority of organic farmers are market-oriented	Geographic distribution (presence) of organic farming
Majority of organic farmers do not have difficulties with product sales	Fertilization mode
	Low proportion of farmers with farming as main income
	Low cohesion between organic farmers

### 5.1 Issue of unequal spatial distribution of organic farming in Slovene Istria

Geographically speaking, there are significant differences in the distribution of organic farming in Slovene Istria, especially between Eastern (hinterland) and other parts (Figure 4 and Figure 5). With the exception of one organic farm, which is located in the cadastral municipality of Sočerga, there are no organic farms in the entire Eastern part of the region.

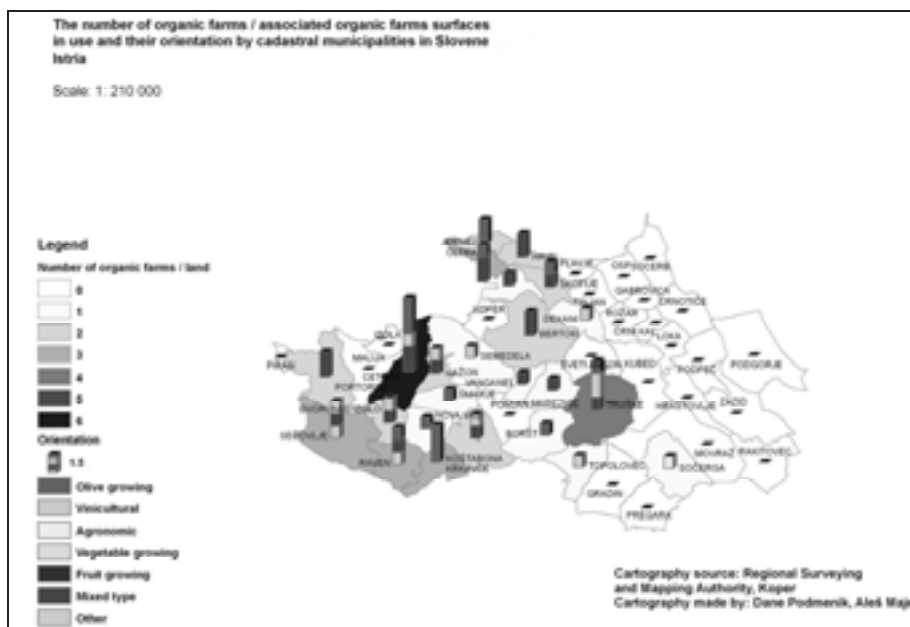


Fig. 4: The number of organic farms / associated organic farm surfaces in use and their orientation by cadastral municipalities in Slovene Istria (Survey, 2008).

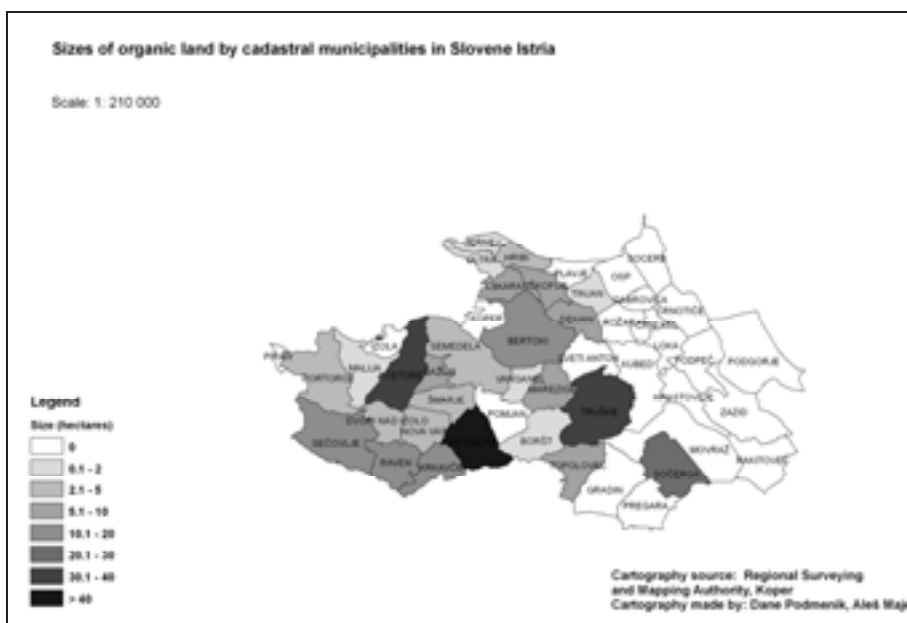


Fig. 5: Sizes of organic land by cadastral municipalities in Slovene Istria (Survey, 2008).

Reasons for this situation should be investigated in future research. In our opinion, organic farming is an important developmental opportunity for the most underdeveloped parts (hinterland) of Slovene Istria.

## 6. Conclusion

Considering the situation in Slovenia, we estimate that organic farming in Slovene Istria is underdeveloped and, at the same time, very specific. These specifics or differences (in comparison to Slovene organic farming) are transparent mainly in the size of organic farms, their orientation and the composition of farming surfaces. Organic farming in this region has only developed significantly in recent years, which can be proven by the data on inclusion of farmers in the control system over time. Almost half of the surveyed farmers have been included in the organic farming control for between one and three years, while (only) one fifth of farmers, for over five years.

The analysis of developmental programmes for Slovene Istria has shown that organic farming takes no priority in developmental plans. It is true that some projects (directly or indirectly related to organic farming) appear, but without specific declaration and therefore their implementation is questionable.

We estimate that the entire hinterland of Slovene Istria is an area with high natural and cultural value and we believe it has high potential for the development of protected areas and environmental-friendly activities (organic farming, eco-tourism, various types of 'green' tourism, etc.) that can also be market-oriented and with the potential for creating new jobs and higher added value. The combination of the above-mentioned activities, namely, forms of sustainable development, could be a

valued contribution to proper (sustainable) development of the hinterland and its establishment as a 'natural' alternative to the development of the coastal part of Slovene Istria.

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## **PROBLEMS AND PERSPECTIVES OF ORGANIC FARMING IN SLOVENE ISTRIA**

### **Summary**

In Slovene Istria, the natural conditions for organic farming are favourable in spite of significant differences within the region. According to the indicated data, practically the entire coastal part of the region (with the exception of littoral urbanised area) has a high natural potential for farming. Favourable natural conditions for farming can also be found in the nearer (inner) hinterland and the Šavrini hills. The areas with the lowest natural potential are in the eastern part of the hinterland, but can be perceived as appropriate for the development of organic farming. Namely, organic farming in Slovenia developed mostly in the most remote areas where the natural conditions for (intensive) agriculture are more difficult. We estimate that natural conditions in the hinterland are suitable primarily for organic cattle-breeding, breeding of sheep, some field cultures (grain potatoes, etc.) and fruit-growing (figs, kakis, etc.). A significant advantage of the hinterland is also the fact that, in the past, extensive cultivation exerted only modest (negative) effects on the environment and there are potentials for larger organic farms.

Even though the majority of surveyed organic farmers, among them Boris Fras (Chair of the Slovene Association of Organic Farmers), believe in the potential of organic farming in Slovene Istria, they are facing a lack of stronger engagement, namely support from regional acceleration services and from local politicians, who could – with proper orientation and vision – contribute to its development.

An important part of the field research conducted in June and July 2008 are questionnaires that provide empirical data for the majority of the organic farms in Slovene Istria. The survey included 37 farms with around 231 hectares of organic land. The prevailing branches of organic farms in Slovene Istria are olive-growing and mixed production, while the prevailing land use is wine growing (37% of all organic land). The average size of organic farms is 6.96 ha, while 5.66 ha is the average for family organic farms.

In the end, we can only point out the very favourable socio-demographic indicators of organic farming in Slovene Istria, namely the favourable age composition of families and high educational average of owners of organic farms – over half of the respondents have college or university education.