



**Preliminary Report of Croatian Sustainable Tourism Observatory
Focal area: Adriatic Croatia**

Zagreb, July 2016.

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1. Executive Summary

Adriatic Croatia is one of the two NUTS-2 Regions of Croatia and has territory of 24,705 square kilometers and 1,411,935 inhabitants. Region is characterized by a narrow coastal area in which most of the tourist activities take part, and a wider area of the hinterland (mostly mountain area), which is very scarcely inhabited. Adriatic Croatia main touristic resource is almost six thousand kilometers long and indented coast, with 1246 islands and islets varying in size. Therefore, potentials of Adriatic Croatia tourism are not used enough, which is consequentially reflected in low level of social inclusion and capacity utilization, and high seasonality (Institute for tourism, 2014). With total number of 964,875 permanent touristic beds in Adriatic Croatia, the majority of accommodation is still in the private accommodation but the highest capacity utilization is recorded in hotel sector. Furthermore there are various environmental issues which are mostly consequences of insufficient management and planning. The degradation of the area by intensive and uncontrolled construction of second homes and apartment blocks is the most serious impact that tourism has on the environment and natural resources, along with landscape degradation. Also, the unresolved issue of waste and precipitation water is one of the problem issues in fast-growing coastal settlements, where the construction of tourist infrastructure is not accompanied by the construction of municipal infrastructure. As an important problem imposes the issue of solid waste that has not been solved in accordance with EU regulations in a number of destinations. In addition, there is an increasing spatial imbalance in development between dynamic coastal areas, heavily populated and characterised by intensive levels of land use and consumption and often declining inland (and marginal) areas. Problem questions which we can point out as a relatively new, considering that they began to be recognized significantly in the last few years are the burden of cultural destinations with a large number of cruise ships, as well as the overload of destination of protected nature with a large number of day visitors.

The experts of Institute for Tourism have actively participated in many projects implying sustainability issues at national and international level. For instance, 'Tourism development strategy of the Republic of Croatia until 2020', completely made by the Institute's expert team, is completely founded on the principles of tourism sustainability. Moreover, the experts of Institute for Tourism have been involved in development of the 'Transnational strategy for the Sustainable Territorial Development of the Danube Area', a tourism sustainability project financed by the European Union. Finally, Institute's experts have many times so far been engaged in assessment of carrying capacity of many tourist sites in Croatia and abroad. Although a periodic and systematic monitoring process has not exist until now, Institute for Tourism does not lack of experience in tourism sustainability monitoring. This particularly refers to research on an academic level implying production of several scientific papers. Although some of them contribute to the international theoretical debate on measurement tourism sustainability, these papers primarily deal with the topic of measurement of tourism sustainability in Croatia. In one of them, authors establish an indicator system for assessment of tourism sustainability in Croatia. Authors assembled a list of sustainability indicators using guidelines provided by 3 different sources (UNWTO, EUROSTAT, and European Union Tourism Sustainability Group). Their list consist of 31 indicator grouped in 4 categories. Authors measure tourism sustainability in seven Croatian coastal counties constituting Adriatic Croatia region. The results revealed significant differences with regard to both the level of overall tourism sustainability and the particular aspect of tourism sustainability among Croatian coastal counties.

Assessment of Croatian System of Tourism Statistics (STS) regarding UNWTO baseline mandatory indicators for the Adriatic Croatia

- Regarding demand side data, i.e. data sources for non-monetary tourism flows and visitors' profile for inbound, outbound and domestic tourism, STS in Croatia is enabling sufficient disaggregation and extraction of indicators for specific sustainability issues for the NUTS 2 region of Adriatic Croatia. However, while majority of the surveys are mandatory and have predetermined regularity, survey on visitors' profile depends on the availability of funds and cannot be conducted without the financial support of other stakeholders.
- The extraction of indicators for specific sustainability issues concerning tourism industries, revenues and employment in the Adriatic Croatia is enabled. However, it should be noted that data disaggregation is facing issues of: (i) principal activity criteria in NACE 2007 classification, (ii) data availability on the level of enterprise, and (iii) data relating to the city/region where the headquarter office of the company is registered.
- STS in Croatia is assessed as mostly satisfactory for the evaluation of tourism industry performance on the national level. TSA for Adriatic Croatia has not yet been compiled. The estimation of the overall revenue and tourism's contribution to the local GDP in the Adriatic Croatia is challenged by the availability of regular and accurate data sources for the Adriatic Croatia.
- The greatest data gaps are within availability of environmental statistics. There are no regularly collected and published data on monitoring energy, water, and solid waste management, as well as sewage treatment, overall and by tourism 'industry' on the NUTS 2 level.
- Indicators on local satisfaction with tourism activity are available for the Adriatic Croatia for 2012. Since the survey is not mandatory within Croatian STS and does not have predetermined regularity, it depends on the available funds.
- Finally, considering UNWTO baseline mandatory indicators, tourism data and data on development control can be sufficiently disaggregated to inform specific sustainability issues for the Adriatic Croatia. However, regarding the establishment of an effective data collection system on residents' attitudes towards tourism and visitors' profile, the financial factors are recognized as potential constrains that may be inhibiting. Finally, the most urgently needed data are those on environmental indicators. Again, the available funds are recognized as the main constrains.

The major objective of observatory establishment is systematic measurement and monitoring of tourism sustainability in Croatia. We are planning to achieve this goal in three complementary steps. The first step implies establishment of an observatory as a virtual organizational structure inside of Institute for Tourism. The observatory will measure and monitor tourism sustainability in the most touristified region of Croatia. It is coastal region, administratively marked as NUTS-2 Adriatic Croatia by European Union nomenclature. This region is under the highest impact of the most developed type of tourism in Croatia, 'sun and sea' tourism. It seems reasonable to start measuring tourism sustainability exactly in there. To that end, we are planning to apply ETIS, the European Tourism Indicator System for sustainable destination management, developed by the European Commission. Although there are many practical and useful systems of indicators for measuring tourism sustainability, one of them is indicator list recommended by UNWTO, we have decided to use ETIS due to our compliance with the recommendations of European Union whose member Croatia is. However, we are planning to completely adjust usage of ETIS to all of the mandatory sustainability issues selected by UNWTO. In the second step we are planning to promote the application of ETIS among local communities (tourist destinations) all over Croatia. We hope that we will be successful in fostering appliance of ETIS on municipal level. It has to be noted that it also depends on cooperation of all relevant stakeholders. Especially those ones like

Ministry of Tourism and National Tourist Board that have mandatory power over local tourist destinations. The third and final step involve our aspiration to grow into a regional monitoring center coordinating many local observatories all over Croatia, all of them applying ETIS for measuring and monitoring tourism sustainability in its own local jurisdiction.

The preliminary objectives for the first reporting year are:

Assurance of active cooperation of all relevant stakeholders, especially those ones that should provide necessary data for measurement tourism sustainability;

Conduction of preliminary measurement of tourism sustainability in our focal area by appliance of as many as possible of 14 listed indicators.

After the conduction of above-mentioned activities, we believe that we will have a whole picture of our prospects to achieve our objectives regarding establishment of observatory in the desired profile.

2. Possible issues identified for the destination

Adriatic Croatia is one of the two NUTS-2¹ Regions of Croatia. The region forms the coastal part of the country. It accounts for 44% of the country's territory and 33% of the population and includes seven counties that make the NUTS 3 regions (County of Primorje-Gorski Kotar, County of Lika-Senj, County of Zadar, County of Sibenik-Knin, County of Split-Dalmatia, County of Istria and County of Dubrovnik-Neretva). Region is characterized by a narrow coastal area in which most of the tourist activities take place, and a wider area of the hinterland (mostly mountain area), which has a lower tourism importance, and is very scarcely inhabited.

Croatian part of the Adriatic Sea, the main touristic resource, is almost six thousand kilometres long and indented coast, with 1246 islands and islets varying in size², 48 of which are permanently inhabited. The largest islands are Cres and Krk, each of them having an area of around 405 square kilometres. Furthermore, an important resource for tourism development in this region are eight national parks and seven nature parks, and seven sites of UNESCO's world heritage.

Croatia, especially the Adriatic region, is internationally perceived as a developed tourist destination, especially for summer vacation. The image of Croatia is particularly improved in the last few years, in parallel with the process of EU integration, while Adriatic Croatia is characterized by a constant and steady growth of tourist turnover. The composition of the tourists visiting Adriatic Croatia has changed, but the dominant destinations have stayed the same. Therefore tourism in Adriatic Croatia is still basically "sun & sea" tourism. There is a great potential for other types of tourism –cultural, health, eco, rural tourism, but current state of development of specific tourism products is still on a low level. In quantitative terms, these alternative forms of tourism are hardly significant. The coastal resorts still account for 89% of all tourist arrivals and 95% of all overnight stays. The season is very limited and concentrates mainly from June to September. Therefore, we can say that potential of Adriatic Croatia tourism are not used enough, which is consequentially reflected in low level of social inclusion and capacity utilization, and high seasonality.

Economically, this area is highly dependent on tourism (the share of tourism in local GDP is approximately 26.2%), which has the characteristics of high seasonality (67.1% of total overnight arrivals of inbound visitors in 2015 was realized in July, August and September), and dependence on foreign markets (92 %, mostly from: Germany, Austria, Slovenia, Italy, etc.).

The seasonality is directly connected with lack of innovative products and quality, which leads to low level of expenditures³. Seasonality is also directly connected with motives of the visit of the coastal part of the Adriatic Croatia. Founding's of the research of attitudes of the visitors to the seven Croatian coastal counties from 2014. were relatively in accordance with the previous trends. Most of the guests are still coming to Adriatic Croatia because of the passive relaxation (75%) and fun (43%), but the number of visitors motivated with new experiences and adventures (30%), gastronomy (36%) and exploring the nature (20%) has significantly increased in the last eight years. This may be the announcement of the new trends and possibility for resolving economic issues.

With total number of 964,875 permanent touristic beds in Adriatic Croatia, the majority of accommodation is still in the private accommodation but the highest capacity utilization is

¹ Nomenclature of Units for Territorial Statistics of European Union

² Duplancic Leder, T, Ujevic, T., Cala, M. (2004) Coastline Lengths and Areas of Islands in the Croatian Part of the Adriatic Sea Determined from the Topographic Maps at The Scale of 1 : 25 000. Geoadria 9(1), 5-32.

³ Average expenditure in Croatia in 2014. was 66 euro, of which 80% is for accommodation and catering.

recorded in hotel sector. Among all activities, tourism is definitely the most influential one, in terms of both the ever-growing tourism demand, which according to the Croatian national statistical bureau data for 2015 has generated 68,696,000 of tourist nights in Adriatic Croatia (which is 95.6 of all tourist nights in Croatia).

Likewise many hotels, transport and public infrastructures were built during the subsequent three decades in Croatia. This period was marked by high economic growth and tourist turnover. Moreover, in the 1990s Croatia suffered the devastating impacts of political instability and war. Since the late 1990s, Croatia has undergone one of the highest tourism growth rates in the world and this trend is expected to continue in the future.

Most of the citizens of Croatia agree that the economic effects of the recent growth in tourism are to be considered as positive (Strategy for Sustainable Development of the Republic of Croatia, 2013⁴). Especially the newly created jobs and the general increase of wealth are, without any doubt, very important points. But there are also critical opinions, especially regarding the visible changes in the landscape. Many things are seen as problematic issues. These are mainly damage to the natural environment – which is considered as one of the main potentials for tourism, the rapid and uncontrolled expansion of settled areas, and sometimes unbalanced ratio between prices and performance and the barely professional staff.

Coastal areas constitute a unique geographic space from an ecological and human development perspective, while in the Adriatic Croatia they are also characterised by high concentrations of population and economic activities which lead to conflicts over the use of resources, trough intensive use of land, overconstruction and environmental degradation. Therefore there are various environmental issues which are mostly consequences of insufficient management and planning.

Overconstruction and large scale urbanization have increased since mid-1990's, especially in narrow coastal zone of Adriatic Croatia. It is considered as the issue with the greatest impact on the sustainability of the region. The degradation of the area by intensive and uncontrolled construction of second homes and apartment blocks is the most serious impact that tourism has on the environment and natural resources. Another possible threat is the consumption of the most valuable areas for tourism, thereby reducing the possibility of using it by domestic population. Space in general and space used for tourism has to be perceived as a resource that has a geographic, social, economic, cultural, ecological and other value. The extensive urbanization process, combined with the old physical town plan, which did not precisely determine the construction rules (such as maximum height) led to the destruction of the typical coastal character of the towns and its traditional Mediterranean architectural features. This primarily refers to landscape degradation, but also to the loss of natural habitats, soil sealing, fragmentation of coastal space and increasing eutrophication of the sea due to greater pressure on the wastewater.

The unresolved issue of waste and water is one of the most important questions in fast-growing coastal settlements, where the construction of tourist infrastructure is not accompanied by the construction of municipal infrastructure. According to estimates, the share of water consumption in tourism ranges from 4% to 5% of the total delivered water in Croatia (358.3 million m³ delivered water in 2012). Likewise, a big problem is the lack of awareness about reducing the use of fresh water and the use of rainwater for sanitary purposes, which could significantly reduce the consumption of water. Also there is a very important need for the modernization of the water supply network, which has very high losses because of the age of the network.

As an important problem imposes the issue of solid waste that has not been solved in accordance with EU regulations in a number of destinations, where in addition to the waste

⁴ <http://www.sd-network.eu/?k=country%20profiles&s=single%20country%20profile&country=Croatia>)

disposal, there is important question of the lack of education about reduce - reuse - recycle system of waste reduction. Based on the data on the amount of municipal waste by Croatian citizen produces (1.01 kg/day) compared to data on overnight stays, it is estimated that the total quantities of waste tourism sector participates with a share of 3.8% (in 2012 in the tourism sector produced 63 371 t of waste), and only Istria and Primorje-Gorski Kotar County produced more than 50% of the total waste produced in the tourism sector.

In addition, there is an increasing spatial imbalance in development between dynamic coastal areas, heavily populated and characterised by intensive levels of land use and consumption and often declining inland (and marginal) areas in terms of population and economic activity, which in the end has a massive impact on cultural integrity and identity of the population. Among the negative socio-economic effects certainly stands out weakening of the local identity under the influence of tourism and weekend visitors. Community is imposed by individual interests that are often presented as common, ignoring the real interests of the community. To make tourism development sustainable it is necessary to respect the socio-cultural authenticity of local communities, which is impossible without the strength to change reflections about the values of the area.

Problem questions which we can pointed out as a relatively new, considering that they began to be recognized significantly in the last few years are the burden of cultural destinations with a large number of cruise ships, as well as the overload of destination of protected nature with a large number of day visitors. Large number of cruise ships has a significant impact on the marine environment, possible problems for the environment are possible contamination by waste water, solid waste, air pollution (primarily acidifying substances) and noise. The greatest potential threats to the environment are related to the possibility of damage of the ship, which could have wider consequences given the large the amount of fuel that such ships contain. Cruise tourism also presents burden for the most popular destinations of cultural tourism through a large number of visitors from the cruise ships, causing congestion and reduces the experience of visitors (for example Dubrovnik, Split, Hvar). Similarly, individual protected areas have experience the degradation of the primary environmental values due to the large number of visitors, and thus become unsustainable (for instance Plitvice Lakes).

3. Detailed description of current monitoring processes

Institute for Tourism is Croatian national research and consulting organization in the area of tourism development and planning. Established more than 55 years ago, through the years, it has actively participated in appliance of diverse paradigms of tourism development. As an affiliate member of UNWTO, Institute for Tourism has truly accepted all of its strategies for making tourism development acceptable to all the people involved now as well as in the future. Strong commitment to the promotion of sustainable tourism development is a cornerstone of the long term mission of Institute for Tourism. In that regard, Institute's experts have actively participated in many projects implying sustainability issues at national and international level. For instance, 'Tourism development strategy of the Republic of Croatia until 2020', completely made by the Institute's expert team, is completely founded on the principles of tourism sustainability. Moreover, the experts of Institute for Tourism have been involved in development of the 'Transnational strategy for the Sustainable Territorial Development of the Danube Area', a tourism sustainability project financed by the European Union. Finally, Institute's experts have many times so far been engaged in assessment of carrying capacity of many tourist sites in Croatia and abroad.

Although a periodic and systematic monitoring process has not exist until now, Institute for Tourism does not lack of experience in tourism sustainability monitoring. This particularly refers to research on an academic level implying production of several scientific papers by the Institute's experts. These papers primarily deal with the topic of measurement of tourism sustainability in Croatia. However, some of them also contribute to the theoretical debate on measurement tourism sustainability by criticizing some of extensively applied procedures.

Among others, the following publications are crucial for demonstration of the experience of Institute's experts in measuring tourism sustainability:

- Kozic, I., Mikulic, J. (2011a) ***Possibilities of Implementing an Indicator System for Evaluating and Monitoring the Sustainability of Tourism in Croatia***, Privredna kretanja i ekonomska politika, 21 (127), 57-81. (http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=105632)
- Kozic, I., Mikulic, J. (2011b) ***An exploratory assessment of tourism sustainability in Croatian coastal destinations***, EFZG Working Papers Series 1104, Faculty of Economics and Business, University of Zagreb. (<http://hrcak.srce.hr/136804?lang=en>)
- Kozic, I., Mikulic, J. (2014) ***Research note: Measuring tourism sustainability – an empirical comparison of different weighting procedures used in modelling composite indicators***, Tourism economics, 20 (2), 429-439. (<http://dx.doi.org/10.5367/te.2013.0283>)
- Mikulic, J., Kozic, I., Kresic, D. (2015) ***Weighting indicators of tourism sustainability: A critical note***, Ecological Indicators, 48 (2015), 312-314. (<http://www.sciencedirect.com/science/article/pii/S1470160X14003926>)

The first publication (Kozic, Mikulic (2011a)) deals with the all relevant issues related to the establishment of tourism sustainability measurement and monitoring process in Croatia. Authors analyze the most relevant international methodologies for measuring tourism sustainability, then check sufficiency of secondary statistical data sources relevant for implementation of tourism sustainability indicators, and finally provide some recommendations for developing an indicator system for assessment and monitoring tourism sustainability in Croatia.

Authors argue that the methodology presented in UNWTO's 'Indicators of Sustainable Development for Tourism Destinations – A Guidebook' is the cornerstone of all later developed methodologies. Since the paper is written in the year 2010, it should be beard in mind that some other relevant methodologies did not exist then. For instance, ETIS – the European Tourism Indicator System for sustainable destination management was in infancy, and the only other relevant methodology was a list of indicators for measurement tourism sustainability proposed by European Environmental Agency and Eurostat. Authors suggested appliance of that list since Croatia was at the end of the process of becoming a member of European Union.

Authors state that, although there are many drawbacks of data sources, sufficient data for developing an at least experimental system of measuring and monitoring tourism sustainability in Croatia exist. This is especially true with regard to economic and partially social aspect of tourism sustainability. The data problem could be the biggest in the case of environmental aspect. Another issue could be coverage of different levels of administrative hierarchy. Albeit the data on national level exist, it is not the case that the same data is disaggregate on subnational levels as counties and municipals.

Authors finally conclude that Croatia is ready for development and implementation of an indicator system for measuring and monitoring tourism sustainability. However, there is also a broad area of issues that have to be resolved concerning primarily data improvement thereby making measurement more reliable.

The second publication (Kozic, Mikulic (2011b)) establish an indicator system for assessment of tourism sustainability in Croatia. Authors assembled a list of sustainability indicators using guidelines provided by 3 different sources (UNWTO, EUROSTAT, and European Union Tourism Sustainability Group). Their list consist of 31 indicator grouped in 4 categories. The first category represent social indicators related to tourism impact on local communities. The second category represent social indicators related to tourists' satisfaction. The third category represent economic indicators and the forth represent environmental indicators. It is well-balanced list of indicators, however, the choice of indicators is lacking comprehensiveness due to limitations regarding data sources. For instance, the environmental aspect of tourism sustainability was mainly represented by public investment in different actions of nature protection. Although they could be perceived as useful and informative, those indicators could not fulfill the role of more relevant environmental indicators such as energy consumption, water consumption, sewage production, and waste production. However, in absence of adequate data, any indicator can be perceived as welcome and useful.

Authors measure tourism sustainability in seven Croatian coastal counties. It should be noted that, in comparison to other geographical areas of Croatia, coastal area is under the highest tourism impact. Hence, it seems reasonable to measure tourism sustainability exactly in there. Authors normalized indicators and constructed composite indices in order to enable comparative analysis. The results revealed significant differences with regard to both the level of overall tourism sustainability and the particular aspect of tourism sustainability among seven Croatian coastal counties. It is also worth to mention that social sustainability scored the highest score in average, whereas economic and environmental sustainability scored slightly lower scores indicating their important role for overall sustainability of tourism in Croatia.

Authors finally conclude that their effort should be considered as the first, though still rough, quantification of sustainability issues in Croatian tourism. The indicator list they used should be considered as valuable basis for future attempts of measuring and monitoring tourism sustainability in Croatia.

The third publication (Kozic, Mikulic (2014)) departs from practical problems of measuring and monitoring of tourism sustainability in Croatia. Instead, this paper deals with some theoretical aspect of tourism sustainability measurement per se. In particular, authors compare three

different procedures for weighting sustainability indicators in the construction of composite indicators. In literature, composite indicators or indices are extensively applied in measuring tourism sustainability. They serve as tools that compress information given by a number of individual sustainability indicators into one indicator. Such approach can dramatically simplify the measurement. However, it is not without drawbacks. The weighting of individual indicators inside of the composite indicator is an issue that is often overlooked in literature. As this paper has shown, an incorrect choice of weighting procedure can result in significant bias. Thus, authors compare results obtained by three different weighting procedures frequently used in practice. The particular weighting procedures are: factor analysis, expert survey, and equal weights technique.

Authors finally conclude that neutral, i.e. equal weights technique, and opinion based, i.e. expert survey technique are far better choice than pure statistical factor analysis. Moreover, authors argue that 'unless a reflective conceptualization of the measurement object has been chosen, factor analysis as weighting procedure is nonsense'.

The fourth publication (Mikulic, Kozic, Kresic, (2015)) is actually a sequel of previously described publication. It also criticize appliance of particular weighting procedures in construction of composite indices for measurement tourism sustainability. Nevertheless, instead of usage of the concrete case of Croatia, this publication apply meta-analysis of available tourism sustainability case studies in literature. The final conclusion is the same as in previous paper, neutral or opinion-based techniques generally appear a reasonable choice over pure statistical factor analysis. Neutral, i.e. equal weights techniques seems to be the most acceptable choice if there is no profound knowledge about destination that is being investigated.

4. Existing available tourism-related data that enables monitoring

Tourism flows and visitors' profile

The main data sources for the System of Tourism Statistics (STS) in Croatia are Central Bureau of Statistics (CBS), Croatian National Bank (CNB), Institute for Tourism (IT), Croatian National Tourism Board (CNTB) and Financial Agency (FINA). In addition, there are a number of various professional associations, companies, organizations and institutions in the field of tourism that generate data for the STS (i.e. Croatian Chamber of Commerce and its regional offices, Croatian Chamber of Trades and Crafts etc.).

Regarding the tourism flows, i.e. data on visitors' arrivals (both tourists and same-day visitors) and tourists' overnights in Adriatic Croatia, there are a number of regular, relevant and accurate surveys that provide basic indicators necessary for the analysis of tourism in Croatia, and for the international comparison in accordance with European standards for tourism statistics. The surveys' main results are either published on the NUTS 2 level (Adriatic Croatia), or on county level, enabling the computation of indicators for the Adriatic Croatia. In addition, survey data on the NUTS 2 level is available upon request. The main surveys assessing the tourism flows in Adriatic Croatia are:

Tourism – Monthly survey on tourism arrivals and overnights in commercial accommodation facilities (CBS), i.e. commercial accommodation occupancy survey; the survey provides number of tourist arrivals and nights, and accommodation capacities;

Survey on Tourists Arrivals and Nights in Non-Commercial Accommodation Establishments (Non-profit Tourism Activity) (CBS); the survey reports total number of tourists and nights in non-commercial establishments, however, the quality of the survey results is questionable since it highly depends on a person's responsibility to register stays in non-commercial accommodation establishments, and on supervising procedures.

Nautical tourism: Capacity and Turnover of Ports (CBS); the survey collects data on tourism flows in nautical tourism (yachting) - nautical ports' capacity in terms of sea moorings and space for land storage of vessels, number of vessels using sea moorings and land storage (separately for permanent moorings and those in transit), as well as the income generated by a nautical port; the survey does not collect data on number of nautical tourists and their overnights realized in and out of marinas;

Foreign vessels on cruise in the Republic of Croatia (CBS); the survey monitors foreign cruise ships' entries into the internal sea waters of the Republic of Croatia, number of passengers aboard and number of days ship stays in the internal sea waters of the Republic of Croatia;

Survey on expenditures of foreign visitors in Croatia and Croatian citizens abroad (CNB), i.e. border survey; the border survey is conducted solely for the purpose of balance of payments (export of services); data are collected by personal interview from the representative sample of passengers at border crossings (foreign travelers exiting Croatia and domestic passengers entering Croatia), covering both tourists and same-day visitors; sample size varies between 30 and 40 thousand passengers per year; survey content includes basic socio-demographic characteristics of visitors, their motivation, accompaniment during the trip, main means of transport, destinations visited during the trip and the amount and the structure of the expenditures;

Survey on tourist activity of population of Republic of Croatia (IT and CBS), i.e. travel household survey; the survey collects data on tourism trips outside usual environment, i.e. covering information on national tourism - domestic and outbound and encompassing overnight and same-day trips, private and business trips as well as trips within Croatia and abroad; data are gathered through telephone interviews (CATI) on a representative sample of about 2 thousand 15+ citizens in each quarter.

Recently, a new information system for check-in and check-out of tourists, called eVisitor, has been introduced by Croatian National Tourism Board. The eVisitor is put in operation in 2016 and it is still in its pilot phase. The system will eventually serve as input for CBS accommodation occupancy survey. The system will enable data reporting on NUTS 2 level.

Besides the aforementioned surveys, the profile of Adriatic Croatia visitors is obtained by a comprehensive longitudinal TOMAS Summer survey on attitudes and expenditures of tourists in Croatia, conducted by the Institute for Tourism in 1987, 1989, 1994, 1997, 2001, 2004, 2007, 2010 and 2014. TOMAS Summer Survey is repeated cross-sectional survey aimed to obtain relevant, reliable and representative data on characteristics, behavior, satisfaction and consumption of domestic and international tourists in Adriatic Croatia. The survey content covers: (i) basic trip characteristics (travel motivation, information sources, main mean of transport, travel party, loyalty to Croatia and tourism destination, type of accommodation booking), (ii) travel behavior (length of stay, activities during the stay and consumption pattern), (iii) tourist satisfaction (about 30 elements of the Croatian tourism product, overall and in relation to competing Mediterranean destinations visited before, in 2014 survey we introduced an assessment of crowdedness in destination, as well as evaluation of destination suitability for disabled tourists), and (iv) basic sociodemographic characteristics (gender, age, education level and income status). Sample size of TOMAS Summer survey has varied between four and five thousand respondents. Data are collected by personal interview. The survey results are representative of tourists' population of Adriatic Croatia, and at the county level, according to accommodation facility and country of tourists' origin.

There is also a comprehensive Survey on attitudes and expenditures of nautical tourists in Croatia – TOMAS Nautica Yachting survey, conducted by the Institute for Tourism in 2001, 2004, 2007 and 2012, following the methodological framework of the TOMAS Summer survey and focused on nautical tourists in Adriatic Croatia region.

Assessment of Croatian STS regarding tourism flows and visitors' profile in Adriatic Croatia STS in Croatia regarding demand side data, i.e. data sources for non-monetary tourism flows and visitors' profile for inbound, outbound and domestic tourism, is enabling sufficient disaggregation and extraction of indicators for specific sustainability issues for the NUTS 2 region of Adriatic Croatia. However, while CBS and CNB surveys are mandatory and have predetermined regularity, TOMAS surveys depends on the availability of funds and cannot be conducted without the financial support of other stakeholders. The financial factors therefore may be inhibiting in the establishment of an effective data collection system regarding the visitor's profile.

Tourism industries, revenues and employment

Data sources regarding the structure of the tourism industry, revenues and employment in Croatia are the following:

Tourism – Monthly survey on tourism arrivals and overnights in commercial accommodation facilities (CBS), i.e. commercial accommodation occupancy survey; provides data on number of accommodation facilities by type, and their capacity in terms of number of rooms, apartments, and available beds.

Basic structural business indicators of enterprises (CBS); provides information on income and expenditures, employment, productivity, enterprises' size, and investments, according to

National Classification of Activities (NACE 2007); the main data source is the Annual Financial Report of Entrepreneurs (FINA);

Gross domestic product for Republic of Croatia and for spatial units for statistics of 2nd and 3rd level, 2000 – 2010 (CBS); provides data according to economic activities (NACE 2007); however, accommodation and food service activities are grouped with wholesale and retail trade, transportation and storage activities;

Persons in paid employment, by activities and counties (CBS); survey covers all legal entities employing 10 or more persons, and collects data on the number of persons employed in legal entities by gender and NACE 2007 classification, on the county level;

Persons in employment in crafts and trades and free lances (CBS); data source are records from the Croatian Institute of Pension Insurance;

Labor Force Survey (CBS); survey is based on a household sample and collects data on size, structure and characteristics of active population in Croatia; survey provides employment data at the NACE level, by employment status and gender, average actual working hours by gender and employment status, and average usual weekly working hours.

Assessment of Croatian STS regarding tourism industries, revenues and employment in Adriatic Croatia

The main surveys' results are either available according to NACE 2007 classification at the county level, enabling the computation of indicators for the Adriatic Croatia, or their sufficient disaggregation for the NUTS 2 region of Adriatic Croatia are available upon request. Therefore, the extraction of indicators for specific sustainability issues concerning tourism industries, revenues and employment in the Adriatic Croatia is enabled. However, it should be noted that data disaggregation is facing issues of: (i) principal activity criteria in NACE 2007 classification, (ii) data availability on the level of enterprise and not the level of object (i.e. hotel company as opposed to the hotels within the company), and (iii) data relating to the city/region where the headquarter office of the company is registered.

Economic contribution of tourism to the economy in Adriatic Croatia

The activities on TSA compilation in order to estimate the economic contribution of tourism to the Croatian economy has started in 2007. Due to not fully developed STS in Croatia, an experimental TSAs for Croatia for 2005 and 2007 were compiled by the Institute for Tourism in 2008 and 2010, respectively. Following the significant improvements of the Croatian STS, first TSA was developed for 2011 (IT, 2014). TSA 2011 revealed that the internal tourism consumption makes up 9.4% of total domestic output at purchaser's prices, while tourism directly contributes 10.4% to Croatian GDP. TSA also revealed a potential problem of unregistered flows, specifically in food and beverage serving services, and within household accommodation.

The surveys upon which the data on tourism demand was derived from are the following: (i) Border survey in 2011 (CNB), (ii) Commercial accommodation occupancy survey in 2011 (CBS), (iii) TOMAS Summer survey in 2010 (IT), (iv) TOMAS Nautica survey in 2012 (IT), and (v) Travel household survey in 2011 (IT). Compilation of TSA tables also assumes partial assessment of expenditures from the supply side based on ad-hoc surveys of specific service providers, as well as aggregation of some tourism characteristic products.

Assessment of Croatian STS regarding economic contribution of tourism to the economy in Adriatic Croatia

STS in Croatia is assessed as mostly satisfactory for the evaluation of tourism industry performance on the national level. TSA for Adriatic Croatia has not yet been compiled. The

estimation of the overall revenue and tourism's contribution to the local GDP in the Adriatic Croatia is challenged by the availability of regular and accurate data sources for the Adriatic Croatia, especially supply side data and regional supply and use table level of details.

Data availability on environmental and social aspects

There are several main stakeholders collecting data on environmental statistics: CBS, Croatian Agency for Environment and Nature Protection newly formed by merging Croatian Environment Agency and State Institute for Nature Protection, Energy Institute Hrvoje Požar, Ministry of Economy, and Hrvatske vode [Croatian Waters].

Regarding the energy consumption and management, the existing data sources are the following:

Energy in Croatia is an annual energy report prepared by the Ministry of Energy; final energy consumption is available on national level only; data are available separately for industry and transport sector only; latest available data are for 2014;

Energy balances are developed by the Energy Institute Hrvoje Požar; latest available are for 2014, on national level only.

Data on waste and waste water production and management are currently collected by individual public utility companies. Data are available at the national level (Report on the state of environment published by the Environmental Protection Agency for 2014). At the local and regional level (NUTS 3 and NUTS 4) there are data available from individual spatial plans (mostly state of infrastructure and aggregated data on waste). There are no sectoral data for tourism.

Consumption of water is managed by public company Croatian Waters. They are also collecting data on water consumption. However, these data have not yet been processed and published. There are also no data on tourism sector water consumption (only estimates).

Assessment of Croatian statistics regarding environmental aspects of tourism activity in Adriatic Croatia

The greatest data gaps are within availability of environmental statistics. Although there are a number of environmental statistics available by several main stakeholders, there are no regularly collected and published data on monitoring energy, water, and solid waste management, as well as sewage treatment, overall and by tourism 'industry' on the NUTS 2 level.

The only national data source on social impacts of tourism activity is a *Survey on attitudes of local population towards tourism* conducted by the Institute for Tourism in 2012, within development of Strategy of Tourism Development in Croatia until 2020. The aim of the survey was to determine perceptions and attitudes of residents towards tourists and tourism in general, and, specifically: (i) residents' attitudes towards economic, social, cultural and environmental impacts of tourism, (ii) degree of their support for investments in tourism development, and (iii) residents' reactions to tourists and the early forms of tourist activities. The survey was conducted on a representative sample of 1,531 residents (15+) by telephone interview (CATI). The results revealed high support to tourism activity and tourists in general, as tourism provides significant welfare, especially in Adriatic Croatia. However, about a fifth of the population perceived negative environmental impacts of tourism activity.

Besides the survey, there is a number of research conducted by the Institute for Tourism and focused on residents' attitudes towards tourism development on the local (NUTS 3 or lower) level. Unfortunately, the research does not enable aggregation or an approximation of the results for the Adriatic Croatia.

Assessment of Croatian statistics regarding social aspects of tourism activity in Adriatic Croatia

Indicators on local satisfaction with tourism activity are available for the Adriatic Croatia for 2012. Since the survey is not mandatory within Croatian STS and does not have predetermined regularity, the financial factors may be inhibiting in the establishment of an effective data collection system regarding the residents' attitudes towards tourism.

Having in mind that systems of tourism statistics are still not fully harmonized between countries at national level, data comparison at regional level is even more challenging.⁵ However, considering UNWTO baseline mandatory indicators, tourism data and information on development control can be sufficiently disaggregated to inform specific sustainability issues for the Adriatic Croatia. Regarding the establishment of an effective data collection system on residents' attitudes towards tourism and visitors' profile, the financial factors are recognized as potential constrains that may be inhibiting. Finally, the most urgently needed data are those on environmental indicators. Again, the available funds are recognized as the main constrains.

⁵ A Closer Look at Tourism: Sub-national Measurement and Analysis: Towards a Set of UNWTO Guidelines, 2013, World Tourism Organization (UNWTO)

5. Recommendations, suggestions and comments

The major objective of observatory establishment is systematic measurement and monitoring of tourism sustainability in Croatia. We are planning to achieve this goal in three complementary steps.

The first step implies establishment of an observatory as a virtual organizational structure inside of Institute for Tourism. The observatory will measure and monitor tourism sustainability in the most touristified region of Croatia. It is coastal region, administratively marked as NUTS-2 Adriatic Croatia region by European Union nomenclature. This region is under the highest impact of the most developed type of tourism in Croatia, 'sun and sea' tourism. It seems reasonable to start measuring tourism sustainability exactly in that region. To that end, we are planning to apply ETIS, the European Tourism Indicator System for sustainable destination management, developed by the European Commission. Although there are many practical and useful systems of indicators for measuring tourism sustainability, one of them is indicator list recommended by UNWTO, we have decided to use ETIS due to our compliance with the recommendations of European Union whose member Croatia is. However, we are planning to completely adjust usage of ETIS to all of the mandatory sustainability issues selected by UNWTO. In that regard, we are planning to apply as many as possible of 9 ETIS indicators that fully cover 8 of 9 mandatory issues selected by UNWTO. List of UNWTO mandatory issues and corresponding ETIS indicators are shown in Table 1.

Table 1. List of UNWTO mandatory issues and corresponding ETIS indicators that we are planning to use

UNWTO mandatory issue	Corresponding ETIS issue		Corresponding ETIS Indicators
	ETIS section	ETIS criterion	
Local satisfaction with tourism	C Social and cultural impact	C.1 Community/social impact	C1.2 Percentage of residents who are satisfied with tourism in the destination (per month/season)
Destination economic benefits	B Economic value	B.1 Tourism flow (volume and value) at destination	B.1.1 Number of tourists nights B.1.4 Daily spending per overnight tourist
Employment		B.3 Quantity and quality of employment	B.3.1 Direct tourism employment as percentage of total employment in the destination
Tourism seasonality		B.2 Tourism enterprise(s) performance	B.2.2 Occupancy rate in commercial accommodation per month and average for the year
Energy management		D.6 Energy usage	D.6.1 Energy consumption per tourist night compared to general population energy consumption per resident night
Water management	D Environmental impact	D.5 Water management	D.5.1 Water consumption per tourist night compared to general population water consumption per resident night
Sewage treatment		D.4 Sewage treatment	D.4.1 Percentage of sewage from the destination treated to at least secondary level prior to discharge
Solid waste management		D.3 Solid waste management	D.3.1 Waste production per tourist night compared to general population waste production per person (kg)

We are also planning to supplement the indicator list with 5 extra indicators. Two of them are associated with the last mandatory issue selected by UNWTO, and three of them are associated with the fourth section of ETIS. Those indicators are shown in Table 2.

Table 2. List of supplemental indicators covering the ninth UNWTO mandatory issue and the fourth ETIS section

UNWTO mandatory issue	UNWTO baseline indicator	ETIS issue		ETIS Indicators
		ETIS section	ETIS criterion	
Development control	Existence of land use or development planning processes, including tourism	-	-	-
	% of destination area subject to control (density, design, etc.)			
-	-	A Destination management	A.1 Sustainable tourism public policy	A.1.1 Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility
			A.2 Customer satisfaction	A.2.1 Percentage of tourists and same-day visitors that are satisfied with their overall experience in the destination
				A.2.2 Percentage of repeat/return visitors (within 5 years)

To sum up, in the first step we are planning to apply as many as possible of portrayed 14 indicators in the broader area of Adriatic Croatia. This should be considered as starting list of indicators that will be supplemented with other indicators as our observatory will develop. The final choice of indicators will necessarily be determined by availability of data. It also depends on willingness to cooperate of all relevant stakeholders. Especially those ones that produce secondary data.

In the second step we are planning to promote the application of ETIS among local communities (tourist destinations) all over Croatia. We hope that we will be successful in fostering appliance of ETIS on municipal level. It has to be noted that it also depends on cooperation of all relevant stakeholders. Especially those ones like Ministry of Tourism and National Tourist Board that have mandatory power over local tourist destinations.

The third and final step involve our aspiration to grow into a regional monitoring center coordinating many local observatories all over Croatia, all of them applying ETIS for measuring and monitoring tourism sustainability in its own local jurisdiction.

Since our ability to achieve our goals necessarily depends on cooperation of relevant stakeholders, they are listed and briefly described in Table 3.

Table 3. List of relevant stakeholders

Stakeholder	Address	Relevance
Ministry of Tourism	Prisavlje 14 HR-10000 Zagreb Croatia	Key stakeholder due to its mandatory power in domain of national tourism policy.
Ministry of Environment and Nature Protection	Radnicka cesta 80 HR-10000 Zagreb Croatia	Key stakeholder due to its mandatory power in domain of national environmental and nature protection policy.
Ministry of Culture	Runjaninova 2 HR-10000 Zagreb Croatia	Key stakeholder due to its mandatory power in domain of national culture protection policy.
Croatian National Tourist Board	Trg Drage Iblera 10 HR-10000 Zagreb Croatia	Key stakeholder due to its mandatory power over local tourist destinations.
Croatian Agency for Environment and Nature	Radnicka cesta 80/7 HR-10000 Zagreb Croatia	Provider of environmental data.
Croatian Bureau of Statistics	Prisavlje 14 HR-10000 Zagreb Croatia	Provider of data on tourism and economy.
Croatian Chamber of Economy	Ilica 3 HR-10000 Zagreb Croatia	A stakeholder that gather all relevant players in private sector.
Croatian Chamber of Trades and Crafts	Ilica 49/2 HR-10000 Zagreb Croatia	A stakeholder that gather restaurants and catering subjects in private sector.
Istria Tourist Board	Pionirska 1 HR-52440 Porec Croatia	A stakeholder that govern tourism development in the area of Istria County (one of 7 integral counties of focal area – Adriatic Croatia).
Kvarner County Tourism Office	Nikole Tesle 2 HR-51410 Opatija Croatia	A stakeholder that govern tourism development in the area of Primorsko-Goranska County (one of 7 integral counties of focal area – Adriatic Croatia).
Lika-Senj County Tourist Board	Budacka 12 HR-53000 Gospic Croatia	A stakeholder that govern tourism development in the area of Licko-Senjska County (one of 7 integral counties of focal area – Adriatic Croatia).
Zadar Region Tourist Board	Sv. Leopolda Bogdana Mandica 1 HR-23000 Zadar Croatia	A stakeholder that govern tourism development in the area of Zadarska County (one of 7 integral counties of focal area – Adriatic Croatia).

Split-Dalmatia County Tourist Board	Prilaz brace Kaliterna 10/I HR-21000 Split Croatia	A stakeholder that govern tourism development in the area of Splitsko-Dalmatinska County (one of 7 integral counties of focal area – Adriatic Croatia).
Dubrovnik and Neretva County Tourist Board	Sipčine 2 HR-20000 Dubrovnik Croatia	A stakeholder that govern tourism development in the area of Dubrovacko-Neretvanska County (one of 7 integral counties of focal area – Adriatic Croatia).
Town of Mali Losinj Tourism Office	Priko 42 HR-51550 Mali Losinj Croatia	A stakeholder that is experienced in the application of ETIS. It was successful participant in the second pilot phase of ETIS development, awarded as top sustainable and accessible tourism destination.

The preliminary objectives for the first reporting year are:

- 1) Assurance of active cooperation of all relevant stakeholders, especially those ones that should provide necessary data for measurement tourism sustainability;
- 2) Conduction of preliminary measurement of tourism sustainability in our focal area by appliance of as many as possible of 14 listed indicators.

After the conduction of above-mentioned activities, we believe that we will have a whole picture of our prospects to achieve our objectives regarding establishment of observatory in the desired profile.