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74-89 **FLAVIO STIMILLI**  
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**MASSIMO SARGOLINI**

TURIN, SOCHI AND KRAKOW IN THE  
CONTEXT OF WINTER OLYMPICS  
SPATIAL PLANNING AND TERRITORIAL  
IMPACT OF THE GAMES  
UDC 71:796.03(4)"20"

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ZIMSKE OLIMPIJADE  
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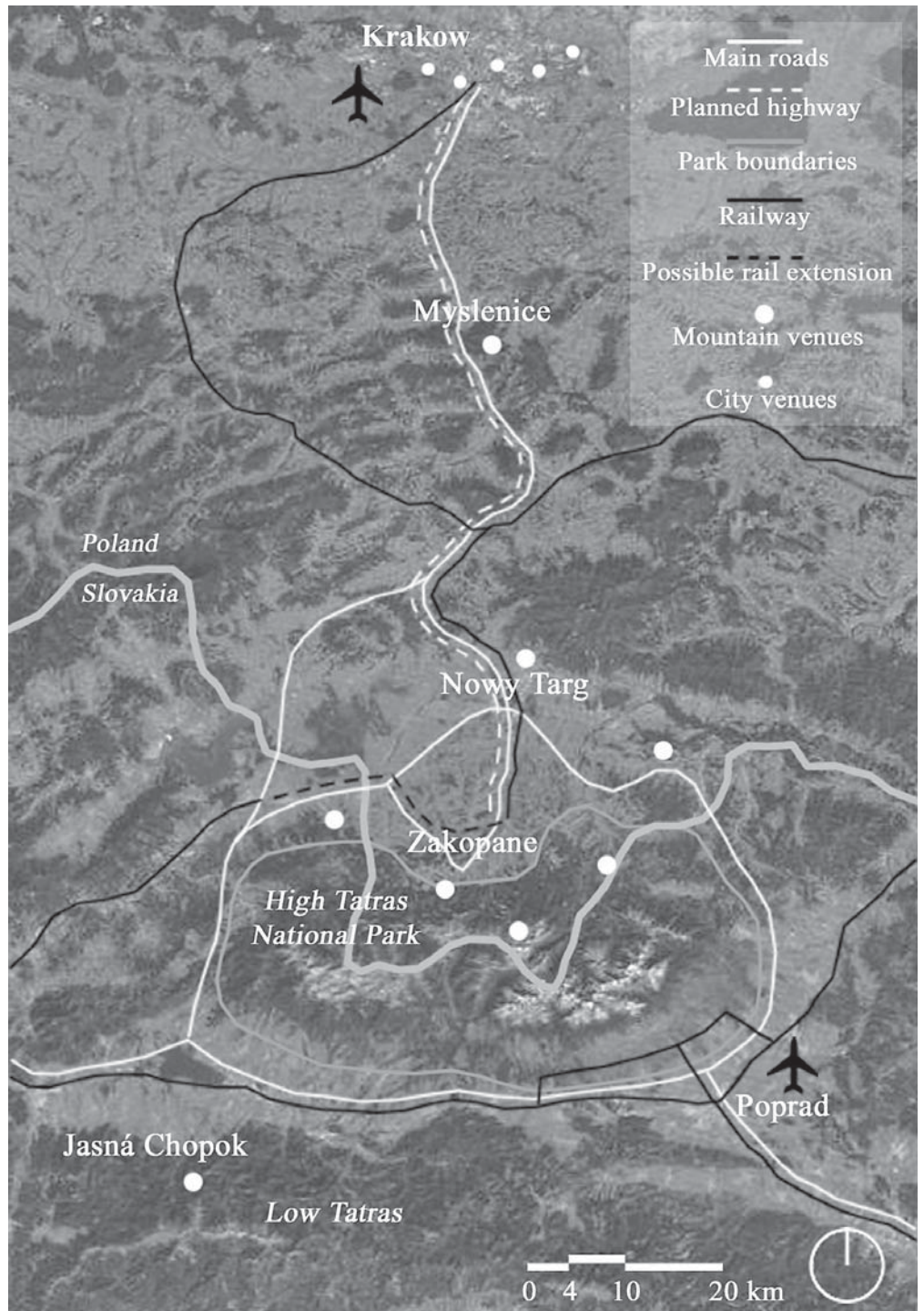


FIG. 1 REGIONAL PLAN FOR KRAKOW 2022  
 SL. 1. REGIONALNI PLAN KRAKOVA 2022.

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TEHNIČKE ZNANOSTI / ARHITEKTURA I URBANIZAM

2.01.02. – URBANIZAM I PROSTORNO PLANIRANJE

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## TURIN, SOCHI AND KRAKOW IN THE CONTEXT OF WINTER OLYMPICS SPATIAL PLANNING AND TERRITORIAL IMPACT OF THE GAMES

## TORINO, SOČI I KRAKOV U KONTEKSTU ŽIMSKE OLIMPIJADE PROSTORNO PLANIRANJE I UTJECAJ IGARA NA TERITORIJI

REGIONAL PLANNING  
SPORTS FACILITIES  
TERRITORIAL IMPACT  
TRANSPORT INFRASTRUCTURES  
WINTER OLYMPICS

PROSTORNO PLANIRANJE  
SPORTSKI OBJEKTI  
UTJECAJ NA TERITORIJI  
PROMETNE INFRASTRUKTURE  
ŽIMSKE OLIMPIJSKE IGRE

In the modern Winter Olympics, the landscape and territorial impact of sports facilities and infrastructures, especially the transportation network required to connect the host city with the mountain venues, is a major challenging issue, matter of concern to planners. Three case studies are compared from this viewpoint, to point out common and different problems, strategies and outcomes: Turin 2006, Sochi 2014 and the plan for Krakow 2022.

U modernim Zimskim olimpijskim igrama utjecaj sportskih građevina i infrastrukture na teritorij i krajolik, posebice prometne mreže potrebne za povezivanje grada domaćina sa sportskim terenima u planinama, jedan je od glavnih izazovnih problema – pitanje od posebne važnosti za planere. S planerskoga motrišta analizirana su tri slučaja koja ukazuju na zajedničke i različite probleme, strategije i posljedice: Torino 2006., Soči 2014. i plan za Krakov 2022.

## INTRODUCTION

### UVOD

The modern Winter Olympics has a momentous impact, for better or worse, on the host city and region. Whereas Summer Olympics is usually held in just one, though large, urban area, its younger sister demands not only for a convenient host city, but for an additional number of mountain venues, more or less afar, affecting large extents of the territory. The spatial changes brought about by the Games can be defined as *Olympic territorialisation*.<sup>1</sup> This process can enhance the mobility system and improve the access to mountains, as well as revive local economy, boost tourism and launch internationally the city image and the regional branding.<sup>2</sup> On the other hand, it can affect in the negative the environmental quality and landscape identity<sup>3</sup>, and produce an increase in the cost of living and local taxation. Depending on many variables, different consequences appear in the short, medium and long run.<sup>4</sup>

Through a comparative analysis, this paper outlines and discusses the regional planning strategies, the models of intervention and landscape protection, as well as the territorial legacies of the Winter Olympics, in three case studies. Being a part of the research project *Heritage Urbanism* [HERU]<sup>5</sup>, the study has been developed by means of the HERU-project approach and research tools.<sup>6</sup> The aim is to point out common and different spatial constraints, challenges and outcomes of the Games, through the four-steps HERU

method<sup>7</sup> and with the additional purpose of trying out its potential and flexibility (as it is tested here in the broader field of regional studies and planning).

**Scope of the research** – In the last decades, due to the international promotion of the event and to some changes in the Olympic disciplines and regulations, the Winter Games has grown tremendously in every respect (e.g. participating countries, sport disciplines, athletes and team officials, technical officials, logistical requirements, new communication and media, higher level of services). In turn, also the size and number of the required transportation and sports facilities have increased very much<sup>8</sup>, so the research is limited to compare the European Winter Olympics of the last 20 years.

Out of the latest 5 editions, only 2 took place in a European context – Turin 2006 and Sochi 2014<sup>9</sup> – but a 3<sup>rd</sup> case is included here, although not implemented and just in the form of a plan: it is the project for Krakow 2022, which really had good chance of succeeding<sup>10</sup>, if only a referendum had not given a negative response.<sup>11</sup> Nevertheless, researches went forward, as they were primarily aimed at taking charge of the regional issues, envisioning future scenarios and drawing up

<sup>1</sup> This term expresses the "production" and transformation of territory – carried out through human activities and freighted up with anthropological value – which, with the Olympics, reaches an unusual and challenging peak [cf. DANSERO, MELA, 2007 and DANSERO, PUTTILLI, 2010].

<sup>2</sup> Sometimes, it is even sufficient to participate in the Olympic bidding process [ABEBE, et al., 2014], which is the case of Krakow 2022 (the plan was in fact aborted after a referendum; cf. next section, note 11).

<sup>3</sup> Cf. CHAPPELET, 2008

<sup>4</sup> Cf. ESSEX, CHALKLEY, 2004

<sup>5</sup> *Urban and Spatial Models for Revival and Enhancement of Cultural Heritage*: the project is financed by the Croatian Science Foundation [HERU 2032] and is being carried out at the Faculty of Architecture, University of Zagreb.

<sup>6</sup> It is also the result and continuation of previous studies undertaken by the School of Architecture and Design, University of Camerino (Italy), which has signed recently an international agreement with the Faculty of Architecture in Zagreb and is cooperating, among others, in the HERU project too: the research is in fact the follow-up of a study begun in 2012, when the School of Architecture and Design was engaged in the discussion of a preliminary plan supporting the Polish-Slovak bid for 2022 Winter Olympics. Several master theses and participations in international conferences followed (cf. note 14) and the Faculty of Architecture, University of Zagreb, was finally involved (in particular, the Department of Urban Planning, Spatial Planning and Landscape Architecture).

<sup>7</sup> More in *Methodology*

<sup>8</sup> Cf. CHALKLEY, ESSEX, 2002

<sup>9</sup> Whether Sochi is properly and definitely included in (the concept of) Europe or not, it might be a matter of some debate; but according to the common geographical definition of Europe (that is the land lying westward of the watershed divides of the Ural and the Caucasus Mountains), Sochi does fall – at least physically – within the Old Continent.

<sup>10</sup> KOZŁOWSKA, 2014



possible planning solutions, whether or not the bid would come out successfully.<sup>12</sup>

### Literature review and conceptual framework

– Given the complexity of a Winter Olympics, the range of related studies in scientific literature is very broad and heterogeneous. This is of no surprise, since the principal subject put into play before, during and after the Games, is *spatial planning*, which includes a variety of disciplines, from economy to environment, history, tourism, transport, landscape design, people engagement, etc. (in particular, for transportation issues, cf. Bovy, 2014). However, little has been written about *cultural landscapes*<sup>13</sup> in the context of a Winter Olympics; so this study is also aimed, at least partially, to make up for this lack. Moreover, owing to the fact that 10 years have passed since the Turin Olympiad, while just a couple since the last edition in Sochi, the number and spectrum of available references is different in the two cases. Most of literature about Sochi is concerned with environmental topics (cf. especially Müller), while the scientific approach to Turin 2006 is more comprehensive and "balanced". The plan for Krakow 2022, instead, is analysed basically on the ground of the authors' direct experiences in Poland<sup>14</sup> and few published works.

<sup>11</sup> Krakow is not alone in the list of withdrawals; in the only bid for the 2022 Winter Olympics, as many as 7 other European cities renounced, mostly after popular consultations: Barcelona, Munich, Davos, St. Moritz, Stockholm, Lviv and Oslo. Considering that the Games in the last few years have become so much unpopular among European local communities and that the next 2 Winter Olympics will be held in Asia – respectively in South Korea, Pyeongchang 2018, and China, Beijing 2022 – it is evident how Europe has lost its historical central role, even though it retains a high potential competitiveness and attractiveness and still rates the highest number of the past W. Games.

<sup>12</sup> Although not implemented, the Krakow plan has fostered a number of conferences and other initiatives, whose outcomes have contributed to make possible the comparison with Turin and Sochi.

<sup>13</sup> This locution refers to a comprehensive and multifaceted concept of space, which includes natural, historical and anthropic elements, representing a complex reality which is hardly divisible in its components.

<sup>14</sup> Participation in the 2012, 2013 and 2014 International Mountain Forums in Zakopane; active partnership in the European Interreg project Access2Mountain (Sustainable Mobility and Tourism in Sensitive Areas of the Alps and the Carpathians, 2011-2014); direct involvement in the regional promotion at the Tatrzńska Agencja (the Tatra Agency for Development, Promotion and Culture) in the summer of 2013

<sup>15</sup> The Heritage Urbanism method consists of 4 steps: determining the factors of cultural heritage identity; establishing the criteria for evaluation and new interventions in heritage spaces; identifying the historical/existing model and establishing a model for revitalization and enhancement; setting up possible sustainable scenarios [OBAD ŠCITAROCI, et al., 2015].

<sup>16</sup> ARRESTA, CATALANO, 2005

<sup>17</sup> On the other hand, more questionable and controversial effects were recorded in the Alpine valleys [PASTORELLI, 2010]; cf. below in *Post-Olympic scenarios*.

<sup>18</sup> ARNOLD, FOXALL, 2014

At any rate, there is already enough material to try a comparison between the three and draw some first conclusions.

**Methodology** – The study capitalizes on the early outcomes of the HERU project and makes use of its researching method, developed with the purpose of being a scientific and effective tool for the sustainable evaluation and enhancement of Cultural Heritage.<sup>15</sup> Given the territorial approach and perspective of this comparative analysis, the method has been adjusted as follow: determining the factors of landscape and territorial identity; establishing the criteria used for landscape and environmental protection during the construction of the Olympic facilities; identifying the spatial models and the planning strategies applied for carrying out the Olympic project; defining and assessing the post-Olympic scenarios and drawing out the learned lessons. A research development should follow, aimed at providing specific guidelines/recommendations for the sustainable revival and enhancement of landscape heritage in the context of a Winter Olympics.

### SPACE-TIME CONTEXT AND REASONS BEHIND THE BID

#### PROSTORNO-VREMENSKI KONTEKST I RAZLOZI KANDIDATURE

**Turin 2006** – The XX Winter Olympics was spread over many places in a vast territory stretching from Turin, in the high Po valley, to Bardonecchia and Sestriere, the highest municipality in Italy at 2035 m a.s.l. The project was sponsored by the Turin city administration that, in the early 90s, envisaged that the mega-sport event could sustain and foster the new plans of urban redevelopment. Turin – commonly known as the city of FIAT, with the main plants and factories of the national automobile company – had been the most important industrial city in Italy since World War II but, already by the end of the 80s, was suffering a dramatic industrial decline. In order to survive and flourish again, it had to reinvent itself, rediscover its rich cultural heritage and figure out some new identity. With this aim, the City Council undertook a plenty of ambitious projects, in an effort to boost local economy and revive the large brown-fields left down by the crisis. Therefore, the bid for the Winter Olympics was just a part of an overall bigger strategy<sup>16</sup> for the city renewal, and this was not only a good point for winning the competition, but was the very reason of the future Olympic success (especially in terms of positive impacts on the urban area).<sup>17</sup>

**Sochi 2014** – The XXII Winter Olympics was centred in only two areas: one in the Sochi-



FIG. 2 OCCITAN VILLAGES IN CHISONE VALLEY (BORGATE), TURIN

SL. 2. NASELJA U DOLINI CHISONE POKRAJ TORINA

Adler conurbation (Greater Sochi) by the Black Sea, and the other in Krasnaya Polyana in the Caucasus Mountains. The project was launched and supported by the central government in Moscow (the Putin's Games<sup>19</sup>), while local Administrations played a minor role. However, this is somehow comprehensible, if one considers that Sochi was already the largest resort city in Russia, with more than two million tourists coming each summer from all over the country.<sup>19</sup> What is in fact surprising is that Sochi, although very near to the Caucasus Mountains, was not really a winter destination before the Games, but a pleasant seaside town with a humid subtropical climate.<sup>20</sup> It holds the record of the warmest Winter Olympics' host city ever, and both Sochi and the region had to undergo a lot of works and changes, in order to be ready for the event.<sup>21</sup>

**The plan for Krakow 2022** – The issue of chronic traffic congestion between Krakow and Zakopane, due to the backwardness of the regional transportation network, was no doubt one of the main reasons behind the Polish bid for the XXIV Winter Games.<sup>22</sup> It arose from a joint initiative of Krakow and the

Małopolska Region, but the first idea was launched already in 1993 by the city of Zakopane (which later on applied for the 2006 Olympics but failed).<sup>23</sup> The town, also known as the Polish Winter Capital City, is the highest in Poland, at the very bottom of the Tatra Mountains. It is a nice and renowned resort of ca. 30.000 residents that is actually much bigger, as it features a huge number of tourists all year round.<sup>24</sup> However larger it is, Zakopane's Authorities realized that a Winter Olympics was too great a burden to be sustained by the city alone, and that again they would have poor chance of winning the competition. Thus Krakow took the lead and set up a further cooperation with Jasná Chopok, a small resort on the Slovakian side of the range.

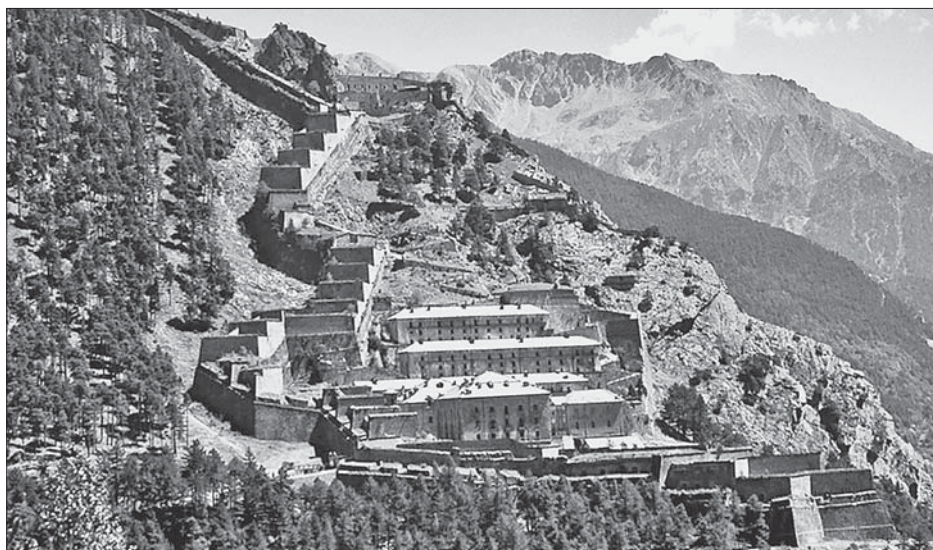
## FACTORS OF LANDSCAPE AND TERRITORIAL IDENTITY

### ČIMBENICI PEJSAŽNOG I PROSTORNOG IDENTITETA

**The northern Cottian Alps** – While Turin was in search of a new identity, the development prospects of the Alpine valleys were different, since the process of territorialisation and spatial identity-making were proceeding more slowly and continuously (the impact of modernity was more diffuse and, in a way, softer).<sup>25</sup> Although modern infrastructures, new ways and techniques of farming, industrial manufacture, winter tourism and the ski industry had entered the region for long and altered the landscape patterns and the image of the northern Cottian Alps to an appreciable extent<sup>26</sup>, these retained, well preserved, a good deal of their natural and cultural heritage<sup>27</sup>, which is in fact the main resource of the territory, at the disposal and to the enjoyment of both tourists and locals. Outstanding examples are the old, rich and bio-diverse Alpine forests and pastures – where grazing is still practiced, both inside

FIG. 3 THE FORTRESS OF FENESTRELLE, TURIN

SL. 3. UTVRDA FENESTRELLE POKRAJ TORINA



19 Cf. PETERSSON, VAMLING, 2013

20 In particular, since Soviet times, it has been developed as a health resort for the elite of the working class and, later, for the higher social classes of the new Russia. [SCHARR, et al., 2012]

21 As a result, the Olympic project has been the most expensive in history.

22 KRASICKI, 2014

23 Cf. BERBEKA, 2014

24 More than 5 million per year

25 Cf. ERCOLE, 2006

26 SEGRE, 2002

27 DANSERO, 2002

28 Cf. the outstanding Fenestrelle Fort (Fig. 3)

29 At the very start of the Olympic project, one of these *borgate*, the ancient Baite di Jossaud near Pragelato, risked to be demolished and rebuilt, because of a real estate speculation. Fortunately, instead, the action was





FIG. 4 SUSVA VALLEY (A) AND CHISONE VALLEY (B), TURIN SL. 4. DOLINA SUSE (A) I DOLINA CHISONE (B), POKRAJ TORINA

and outside the numerous natural parks – and the plenty of medieval and Savoy's fortresses<sup>28</sup>, villages and hamlets (*borgate*), with remarkable instances of Occitan architecture<sup>29</sup> (Fig. 2). Therefore, the landscape structure is complex and heterogeneous – ranging from natural or semi-natural environments to agricultural fields and small settlements – and the spatial arrangement is a balanced amalgam of all components (distributed in harmonic way and with an increasing degree of naturalness from the valleys to the mountain peaks).<sup>30</sup> However, the full picture – that is to say the landscape character or identity – is hardly decomposable in its constituents and results from the co-evolution and overlapping of natural processes and human activities, in a region which is marked by a harsh topography (high mountains with steep slopes and deeply carved, narrow valleys) and a low population density<sup>31</sup> (Fig. 4).

**The Western Caucasus** – Until last century (due to the unfavourable subtropical climate), the flat coastal areas of the Sochi Riviera, as well as the valleys and the river floodplains stretching towards the mountains, were an entire expanse of marshy areas, infested with malaria and unsuitable for permanent residence. Although the region was inhabited since long and many civilizations overlapped and followed one another almost

seamlessly, they did not succeed in establishing any long-stable dwelling or real town, but kept on moving from place to place, in search of better circumstances. Even in more recent times, when they tried to reclaim the swampy soil for farming, they eventually failed and nothing changed so much until the massive coming of Russians, after the 1917 revolution.<sup>32</sup> Then, a number of towns flourished by the Black Sea – mostly along the coast and with an elongated city layout – and several lines of the Russian railways crossed the region and connected the towns with Moscow (from Adler and Sochi via Krasnodar).<sup>33</sup>

In the Krasnodar region of Western Caucasus, the population density is pretty low<sup>34</sup>, and people are distributed dishomogeneously over the land. This means a reduced number of small-to-medium size settlements and great extents of unoccupied territory, protected under the umbrella of 3 famous natural parks.<sup>35</sup> According to UNESCO experts<sup>36</sup>, this is one of the two large mountain areas in Europe that has not experienced significant human impact and still features a variety of natural habitats, such as primeval forests, lowlands and glaciers. The coastline conurbation of Greater Sochi is thus in sharp contrast with the prevailing natural environment of the hinterland, and agriculture is confined within a long, narrow strip of land, stretching parallel to the coast just few kilometres away.

timely stopped and functioned as a positive reference for other similar cases.

<sup>30</sup> DANSERO, SEGRE, 2002

<sup>31</sup> 81/km<sup>2</sup>, widespread in small towns, mountain villas and resorts and organized in 5 *Unions of Mountain Towns and Communities*

<sup>32</sup> Cf. GUSEVA, et al., 2010

<sup>33</sup> Interestingly, the longest mountain narrow-gauge railway in Russia, for freights, passengers and with a special tourist service, runs through the region of Krasnodar, some 100 km north of Sochi and Krasnaya Polyana.

<sup>34</sup> 68/km<sup>2</sup>

<sup>35</sup> Sochi National Park, Caucasian State Nature Biosphere Reserve and Western Caucasus UNESCO World Heritage Site

<sup>36</sup> Unesco (2000)

<sup>37</sup> Or *styl witkiewiczowski*, after its mostly known interpreter, the architect Stanisław Witkiewicz, who lived and worked in Zakopane by the end of 19<sup>th</sup> century

**The Tatra Mountains** – For geomorphologic, climatic and historical reasons, the countryside of the upper part of Małopolska (the Krakow voivodeship), is a multipurpose landscape in which the variety of land uses and patterns is striking all the way up to the very mountains (Fig. 5). The natural scenery within the National Park of High Tatras, instead, is an outstanding example of well-preserved natural environment (Fig. 7), where anyway some traditional activities are practiced yet (such as, first and foremost, sheep grazing). Besides, the region is distinguished by a typical style of vernacular architecture (*Styl zakopiański*<sup>37</sup>, Figs. 6, 8), which contributes significantly to the charm of places or *genius loci*. Since the Tatras chain is the only signifi-



FIG. 5 TATRAS PIEDMONT AREA 100 YEARS AGO (A) AND NOW (B), ZAKOPANE

SL. 5. PODNOŽJE TATRA PRIJE 100 GODINA (A) I DANAS (B), ZAKOPANE

cant mountain range in Poland, people have been attracted since long from all over the country, and population density is relatively high.<sup>38</sup> The territory holds a remarkable landscape value, complexity and harmony, but the general equilibrium is also very fragile.

#### CRITERIA FOR LANDSCAPE PROTECTION DURING THE CONSTRUCTION OF THE OLYMPIC FACILITIES

##### KRITERIJI OČUVANJA KRAJOLIKA KOD IZGRADNJE OLIMPIJSKIH GRAĐEVINA

**Turin 2006** – As opposed to the city of Turin (where there was a need for a profound urban renewal, primarily aimed at recovering the abandoned industrial areas), the mountain environment did not demand for momentous changes but for sustainable planning strategies, able to combine economic and tourism development with the protection and enhancement of cultural landscapes. A delicate balance between the anthropogenic components and the (semi)natural environment was at stake, and for the purpose of its

sustainable preservation the Turin Organising Committee applied, for the first time in Italy, the European Strategic Environmental Assessment [SEA].<sup>39</sup> This new planning tool, combined with the Environmental Impact Assessment for single works, was definitely useful to avoid some more disruptive impacts on landscape heritage. Besides, the SEA process enabled the development of new capabilities and expertise in regional planning and left an immaterial legacy of precious innovations and best practices.<sup>40</sup> Overall, it contributed positively to the project and helped not only to define issues and risks in the first stages, but to monitor the whole project implementation and, partially, even the aftermaths.<sup>41</sup> In particular, starting from a comprehensive study of the regional situation, it proceeded with specific descriptions of local areas, providing a detailed report for each of them on the model of a SWOT analysis.<sup>42</sup> The principal criteria taken into consideration were: basic characteristics of the area; ongoing dynamics and models of use; spatial and environmental value; significance of the site in relation to the whole region; spatial degradation and critical issues; potential risks; legislative constraints; pressure factors; expected impacts before (work phase), during and after the event; reversibility of the expected impacts; recommended mitigations and/or compensations.

**Sochi 2014** – Considered the lack of world-class level athletic facilities fit for international competitions and the old age and poorness of regional infrastructures (not only the transportation network, but also telecommunications and the energy supply system), the project implementation's underlying principles were primarily aimed at matching the IOC<sup>43</sup> requirements and speeding up a general modernization of regional services. Environmental sustainability should have been pursued in parallel, but most of efforts were made to fulfil efficiency and technological standards<sup>44</sup>, and little attention was actually paid to landscape issues. On the ground of the extraordinary nature and urgency of the mega-sport event, a number of exceptional measures were taken (even the variation of

FIG. 6 TYPICAL HOUSES AND VILLAS IN ZAKOPIAŃSKI STYLE  
SL. 6. TIPIČNE KUĆE I VILE U ZAKOPANSKOM STILU



<sup>38</sup> 139/km<sup>2</sup>

<sup>39</sup> CF. CHRISTILLIN, et al., 2005

<sup>40</sup> For instance, in direct connection with the SEA and in support of the Olympic strategic plan, a valuable IT tool was developed by the Italian Military Geographical Institute: the software GISTOR '06, an advanced Geographical Information System that provided the Organizing Committee with precious computer assistance. [COLELLA, 2006]

<sup>41</sup> FREY, et al., 2008

<sup>42</sup> BRUNETTA, 2002

<sup>43</sup> International Olympic Committee

<sup>44</sup> See for ex. the advanced sewage plant in Sochi, equipped with tertiary treatment and micro-filtration.

<sup>45</sup> MÜLLER, 2014



the protected areas' boundaries<sup>45</sup>), allowing for significant deforestation in the Sochi National Park – more than 250 ha in order to make room for the Roza Khutor ski complex (Fig. 10) – and for the construction of the Olympic Park on the coastline (displacing residents from Imeretinskaya Bay<sup>46</sup> and worsening the current degradation of the natural potential in the Caucasian Riviera).<sup>47</sup>

**The plan for Krakow 2022** – In compliance with the European directives about environmental impacts and their assessment, one of the provision put forward by the Krakow Olympic plan was the implementation of the SEA. The foreseen criteria for landscape protection and physical intervention were based on the model of Turin 2006, a case well known to Poles, as it prevailed over Zakopane in the bid for the XX Winter Games.<sup>48</sup>

## SPATIAL MODELS AND PLANNING STRATEGIES

### PROSTORNI MODEL I STRATEGIJE PLANIRANJA

**Turin 2006** (Fig. 9) – Owing to the extensive model of use of the mountain territory and to the spatial dissemination of people and settlements over large areas, the project organizers spread likewise the venues for the typically mountain sports. As for Turin, the Olympic village and the sports facilities (where most of indoor events took place), were located in the *Lingotto* district and other areas along a huge urban axis – the Turin Central Backbone – which connected them all and gave the city a completely new layout.<sup>49</sup> This was made possible by shifting the central station and a long stretch of the railway line beneath the ground level, and by recovering a number of ex-industrial areas and premises.

The major difficulties, thus, were not in the city that was waiting such changes for long, but in the mountains. As many as 12 sites – both within and without 2 main Olympic valleys (Val di Susa and Val Chisone), with 3 Olympic villages, all the venues for outdoor competitions and a couple of indoor arenas – were up to 100 km away both from Turin and from each

<sup>46</sup> WURSTER, 2013

<sup>47</sup> Emergency permissions were issued in Turin too, but mainly in the end of the process, for specific urgent works and only on condition of providing countermeasures, i.e. environmental mitigation/compensation actions.

<sup>48</sup> Cf. KOZŁOWSKA, 2014

<sup>49</sup> Cf. FILIPPI, MELLANO, 2006

<sup>50</sup> BOVY, 2006

<sup>51</sup> On the French side of the Cottian Alps, instead, one can rely on some very interesting narrow-gauge and light-rail connections (in particular between Briançon, Grenoble, Albertville and Bourg-Saint-Maurice), that make the tourist offer more wide and competitive (Legambiente Italia, 2007).



FIG. 7 VIEW OF A VALLEY IN TATRA MOUNTAINS NATIONAL PARK  
SL. 7. POGLED NA DOLINU U PARKU PRIRODE TATRA

other. Transportation was therefore a very complex and pressing issue, addressed by a twofold strategy: in the one valley already equipped with a railway track, a rail shuttle service was introduced; in the other, car traffic was prohibited altogether and replaced by a shuttle bus service.<sup>50</sup> Unfortunately, all these were temporary measures: if it is true that the road conditions improved significantly and the public transport worked very well during the Games, afterwards the situation went back nearly to square one, with the predominance of private cars and traffic congestion almost every weekend.<sup>51</sup>

**Sochi 2014** (Fig. 11) – The spatial model and strategies behind Sochi 2014 were totally different from whatever experienced before in

FIG. 8 TYPICAL HOUSES AND VILLAS IN ZAKOPIAŃSKI STYLE  
SL. 8. TIPIČNE KUĆE I VILE U ZAKOPANSKOM STILU





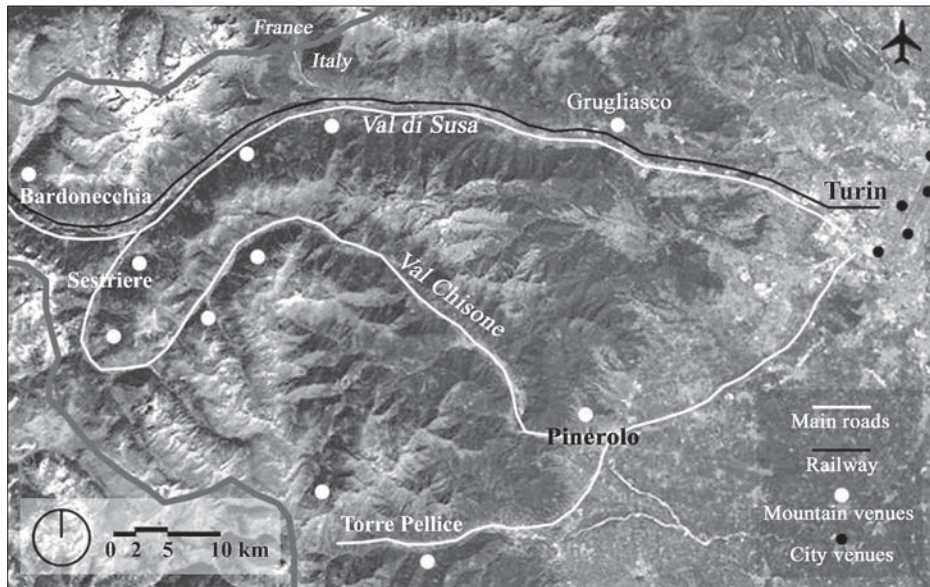


FIG. 9 REGIONAL FRAMEWORK OF TURIN 2006  
SL. 9. REGIJA TORINA 2006.

the context of a Winter Olympics. For the first time, the plan delivered the construction of 100% new outdoor and indoor venues and, like in the Summer Games, of an entire Olympic Park in the Sochi urban area (Fig. 13).

Given the magnitude of the programme, for the sake of efficiency and for security reasons, everything was focused in only 2 places, at relatively close distance (less than 50 km), the coastal and the mountain cluster. In between, an upgraded mobility system (including several new roads, railways and intermodal hubs<sup>52</sup>, plus the renovated and expanded airport), allowed for public transport and fast travelling (Fig. 12). Betting on the improved logistics, this huge project had the ambition of converting a sea-side holiday town in a year-round international destina-

FIG. 10 CONSTRUCTION WORKS IN ROSA KHUTOR, SOCHI  
SL. 10. IZGRADNJA NA LOKALITETU ROSA KHUTOR, SOCI



tion, by attracting crowds of tourists far beyond the Games. Whilst waiting for that to become fully true and to check its long-run sustainability, what is evident so far is that the Winter Olympics succeeded quite well in terms of the provided transport services, and that its bipolar scheme has increased the contrast between the coastal and the mountain environments, by shortening the travelling distance and the overall relation between each other.<sup>53</sup>

**The plan for Krakow 2022** (Fig. 1) – According to the outlined project for Krakow 2022, the indoor ice games should have been held mostly in Krakow, where the sports facilities, whether renovated, rebuilt or totally new, would have been along an east-west urban axis and linearly connected. The rest of the mountain races would have been shared by several localities, spread on both sides of the Tatra Mountains. It would have been the first Olympics organized by two countries and the Polish-Slovak partnership would have prevented from a number of otherwise needed works, such as forest clearings for new ski slopes, ski lifts, reservoirs for artificial snow-making etc.<sup>54</sup> (Figs. 14, 18).

On the other hand, in order to get all the venues fast and properly connected (the maximum distance being closed to 200 km, from Krakow to Jasná Chopok), the Slovakian involvement would have implied a challenging upgrading of the existing transportation system – that was in fact one of the main purposes of the proponents – including the construction of possible new routes for other means of transport than vehicles.<sup>55</sup> As for the Olympic villages, besides the main one in Krakow, a second one should have been placed in Zakopane, close to the mountains and possibly removable after the Games.

52 Cf. SHABAROVA, 2014

53 Unfortunately, there was little concern about the space in the middle, namely the basin of the river Mzymta, where the new road and rail tracks have altered significantly the valley image and the ecosystem functioning. [cf. MÜLLER, 2014]

54 Notably, there is already a ski-jump facility in Zakopane, where the sport is very popular and the structure is already part of the collective imagination of the region (it was built up in 1925, Fig. 16).

55 There were in fact some hypotheses about new cableways and the possible extension of the Polish railway line (in order to connect it to the more developed Slovakian mountain rail system, Fig. 15), but the project proposal recommended only the enhancement of the backward rail tracks, while most of provisions were aimed at improving, or better to say doubling, the road network.

56 Cf. BONDONIO, MELA, 2008

57 Actually, the Olympic project did benefit from a general support of local population not only before or during the event, but also later on: favoured by a clever promotional campaign, people sustained the bid from the very beginning and were looking forward to the Games; the Olympics' smooth running and success had a positive influence



## POST-OLYMPIC SCENARIOS

### SCENARIJI NAKON OLIMPIJSKIH IGARA

**Turin 2006** – After a decade from the event, the spatial legacy of the Winter Olympics in a long-run perspective can be assessed with some confidence. Once more, a distinction is necessary between Turin and the Mountain Valleys.<sup>56</sup> Here, the general improvement of the road network, extremely needed and already planned in any case, could not soften or conceal the negative aftermaths, much more striking and impacting, especially on the landscape image and identity of local communities.<sup>57</sup> In particular, as feared<sup>58</sup>, the 2 most opposed and criticized sports facilities, the ski-jump complex in Pragelato and the bobsleigh track in Cesana, have turned white elephants: the first, if not officially closed yet, lay down (again) completely abandoned<sup>59</sup>; and the second, pronounced formally dead in 2014 by the City Council, is still waiting to be (expensively) dismantled<sup>60</sup> (Figs. 17, 19).

More controversial is the legacy of the Mountain Olympic Villages in Bardonecchia, Sestriere and Pragelato, and of the 2 ice stadiums in Torre Pellice and Pinerolo. The first have been turned into holiday villages that – owing to their unusual dimension and tourist offer in comparison to the size and number of the surrounding accommodation facilities – are accused of damaging local economy (by having already caused a fall of rents and a series of economic failures after which, in few years from the games, the tourism influx stopped growing and apparently even regressed).<sup>61</sup> While the latter two, underused and with very high costs of maintenance and management, are often at risk of closure.

The Turin urban legacy of the Games is no doubt more positive. Except from one issue

on public opinion too; and this remained largely favourable even after, although with some important differences between the city and the mountain valleys [GUALA, 2008]. Even in the case of Sochi, much more discussed and criticized, there was a similar support base for the event [MÜLLER, 2014].

<sup>58</sup> Cf. LAZZERONI, BOBBIO, 2002 and D'AURIA, 2008

<sup>59</sup> For few years, the 5 ski-jumps hosted some sports events, but fell in disuse very soon (the last competition was in 2009), remained closed for 4 years, then reopened in 2013 in a revival attempt, but now are again totally unused and lay down in complete state of abandonment.

<sup>60</sup> What shall be the destiny of these 2 heavy structures that implied significant clearings of forested areas, impressive excavations and huge investments of money, is still uncertain; on the paper, as stated by the City Council, the hill in Cesana should be returned of its original appearance by an extraordinary ecological restoration, but the process will be for sure a very long and unpredictable one.

<sup>61</sup> However, Climate Change too has to be taken into consideration as a severe impact factor on local economy; as far at least as winter tourism is concerned, the Alpine ski season of the last decade has been drastically shortened by high temperatures due to global-warming.



FIG. 11 REGIONAL FRAMEWORK OF SOCHI 2014

SL. 11. REGIJA SOČIJA 2014.

that is still causing troubles (the unsettled reuse of few buildings in the former Olympic village, now occupied by immigrants and refugees), the city has gained many advantages. In addition to a general renovation and improvement of open spaces and building facades, the ex-Olympic arenas have been the stage for different kind of sports, musical and other cultural events; the Turin backbone has provided new public areas and (re) connected different parts of the city; the first line of the city subway was finally completed; and the rest of the Olympic facilities were re-adapted and sold as residences in the real estate market, or given to the municipality as student dormitories and social housing.

**Sochi 2014** – The Sochi post-Olympic scenario is very much uncertain because still in the



FIG. 12 ONE OF THE NEW MOTORWAY JUNCTION OUTSIDE SOCHI

SL. 12. JEDAN OD CVOROVA NA AUTOCESTI POKRAJ SOČIJA

FIG. 13 AERIAL VIEW OF THE SOCHI COASTAL CLUSTER

SL. 13. POGLED IZ ZRAKA NA SOČI





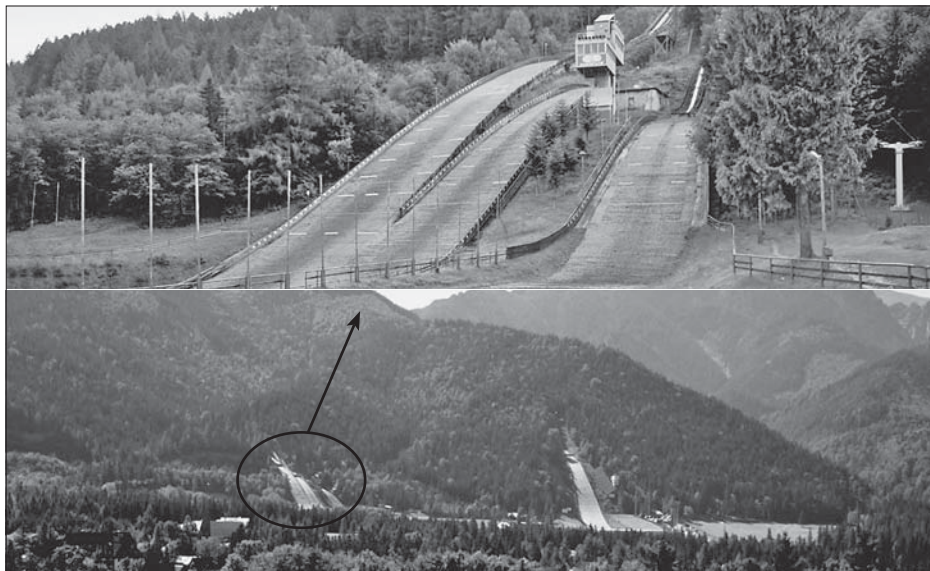


FIG. 14 RESERVOIR FOR ARTIFICIAL SNOW MAKING IN THE ALPS

SL. 14. SPREMNİK ZA VODU ZA PROIZVODNJU UMJETNOG SNIJEGA U ALPAMA

FIG. 15 SLOVAKIAN MOUNTAIN RAILWAY  
SL. 15. SLOVAČKA BRDSKA ŽELJEZNICA

FIG. 16 EXISTING SKI-JUMP FACILITIES IN ZAKOPANE  
SL. 16. POSTOJEĆE SKAKAONICE U ZAKOPANIMA



process of development. However, thanks to the Games, Sochi has acquired an international prominence and appealing that will last for some time. Once a year, in fact, from 2014 to 2020, the city has been appointed to organize the Russian race of the Formula-1 Championship (which is taking place in the car-racing track that was built all around the Olympic park) and, in 2018, it will host several matches of the FIFA World Cup.

However, if this will be enough to make the Olympic investment profitable, it is still far from obvious.<sup>62</sup> Sochi does not possess yet a sufficient user base able to keep alive, autonomously and with little help from the central government, the huge Olympic facilities. Even infrastructures, which usually are one of the easiest outcomes to be kept in use<sup>63</sup> (because mostly needed), have been in fact oversized and risk becoming eventually a kind of transport white elephants. The fate of Sochi is sealed: in order to avoid the worst consequences and unpredictable costs of tremendous and overdimensioned investments, it must keep on growing, hosting international events and attracting more and more people.

**The plan for Krakow 2022** – As difficult as it is to elaborate future scenarios, which is one of the most important and challenging research pathways in the field of regional planning, the bidding process required that the Olympic plan should have also addressed that very issue. Anyway it was not so hard, for a city of the size and importance of Krakow, to imagine an urban reuse of the sports arenas after the Games: they were addressed as possible venues for future sports, musical and other cultural events or for political and similar huge public meetings.

Less obvious, instead, was the destiny of the infrastructure works and investments in the mountains. In this regard, the simple fact that the current transportation system on the Polish side is about to collapse and has to be deeply and urgently revised – mostly due to mass tourism – cannot justify the simplistic, road-oriented approach that was prevailing among decision makers. By interpreting the territory in terms of landscape resistance, resilience and carrying capacity, it is clear that the Tatras piedmont area cannot afford a significant expansion of the road network, unless at very high costs and with unpredictable outcomes. Since a railway line still exists, connecting Krakow with Zakopane (however old, underused and extremely slow), the regional planning strategy should be aimed, first and foremost, at modernizing and speeding up the public-rail transport, making it finally competitive. Then, or in parallel, a plan for other kind of slow and soft mobility could be pursued as well, but until the rail system

<sup>62</sup> Even the Formula-1 events, in fact, do not require a real involvement of the Olympic facilities: they are poorly used and their main function is to provide just a fancy background to the race. [MÜLLER, 2014]

<sup>63</sup> BOVY, 2010

<sup>64</sup> The regional and local governments were planning to construct a high-speed train, connecting the future Olympic park with Krakow's railway station and old town. It seems to the Authors that such a service should have been extended up to Zakopane and Jasná Chopok, and that the plan is still feasible now. [STIMILLI, 2015]

<sup>65</sup> As a further analogy between Turin and Krakow, more than few people, as early as the 1998, asked for the possible engagement of Albertville, on the French side of the Alps, just for the same reasons of the Slovakian involvement in the Krakow bid: the reuse of some of its sports facilities, built up for the 1992 Winter Games and already underused (especially the ski-jump in Courchevel and the bobsleigh track in La Plagne), could have prevented from new spendings and constructions on the Italian side.



will be stuck to the present condition, any other effort will be useless.<sup>64</sup>

## DISCUSSION

### RASPRAVA

The factors of landscape and territorial identity are quite similar in the sub-Alpine and sub-Carpathian regions of Turin and Krakow. Their comparable multipurpose landscapes, historical settlements and architectural heritage bear witness to the long process of territorialisation. On the contrary, in the Caucasian province of Sochi, the landscape transformation started later on and was limited basically to the coastline and the near hinterland. Large extents of intact nature are still preserved in the mountain environment and there is in fact little compenetration between natural and anthropic portions of land, which appear mostly in contrast.

In Turin and Krakow, the criteria for landscape protection during the construction of

the Olympic facilities have been outlined on the ground of similar principles of sustainability and through the same binding procedure, the European Strategic Environmental Assessment. In Sochi, instead, poor attention was paid to this issue, as most of efforts were aimed at counterbalancing the huge Olympic investments, by making these as much rational and effective as possible.

Spatial models and planning strategies, again, are quite similar in the Italian and Polish case, while the Russian differs substantially (Fig. 20). Sochi 2014 has amplified all implications and effects of a Winter Olympics, by emphasizing and sharpening its spatial bipolarity and by taking the size and investments to the extremes. Both in the mountains and in the city, everything was concentrated in a limited area, as opposed to the widespread character of Turin 2006 and the plan for Krakow 2022, where the distance between the host city and the mountain venues was longer, and their spatial relationship more complex.<sup>65</sup>

FIG. 17 BOBSLEIGH TRACK CONSTRUCTION WORKS, TURIN  
SL. 17. IZGRADNJA STAZE ZA BOB, TORINO

FIG. 18 FOREST CLEARINGS AND EXCAVATIONS TO MAKE ROOM FOR DIFFERENT SPORTS FACILITIES, TURIN  
SL. 18. KRČENJE SUMA I ISKOPI ZA SPORTSKE GRADEVINE, TORINO

FIG. 19 SKI-JUMP IN PRAGELATO AND BOBSLEIGH TRACK IN CESANA, TURIN  
SL. 19. SKAKAONICA U PRAGELATU I BOB-STAZA U CESANI, TORINO





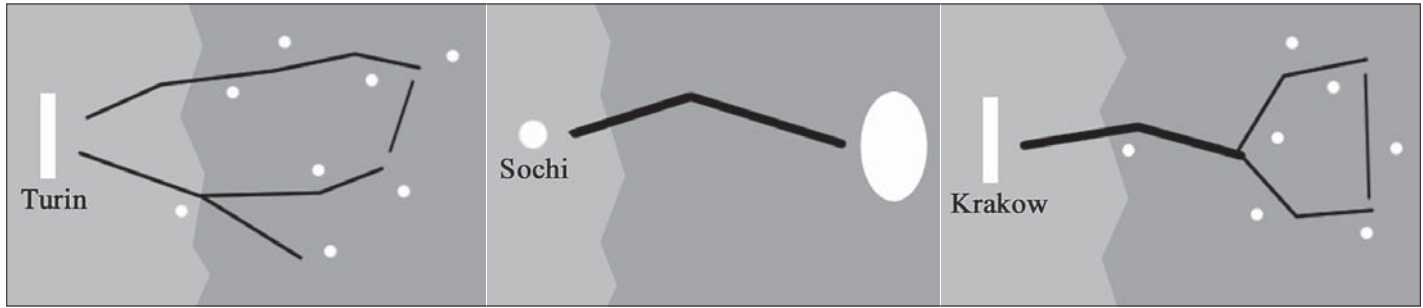


FIG. 20 SCHEMES OF SPATIAL ARRANGEMENT AND RELATIONSHIP BETWEEN THE HOST CITY AND THE MOUNTAIN OLYMPIC VENUES

SL. 20. SCHEMA PROSTORNOG RASPOREDA I ODNOSA IZMEDU GRADA DOMAĆINA I PLANINSKIH OLIMPIJSKIH PROSTORA

In line with the twofold dimension of the Games, the post-Olympic scenarios have to be clearly distinguished whether are related to the urban setting of the leading host city or to the smaller resorts of mountain environment. In the first case, the urban user base can guarantee an easier integration and post-Olympic usage of the sports facilities (as proved by Turin, by the analogue case of Krakow and, to a lesser extent, even by Sochi), while the lower carrying capacity of mountain settlements does not allow for the maintenance of big structures, which are usually out of size and out of place and at high risk of abandonment.

Given the current IOC requirements and the variety of sport competitions compressed in a couple of weeks, most of the European medium-sized cities cannot neither sustain the physical impacts of Olympic facilities and infrastructures nor afford the financial investment (unless with a great support of the central government). The host cities of the last and next editions are in fact big cities or even metropolis, organized ever more on the model of the Summer Games.<sup>66</sup> Extending the analogies, a further comparison could be tried with the World exhibitions, drawing out again differences and similarities to better understand the spatial impact of mega-events (with specific regard to the urban environment and its close surroundings).<sup>67</sup> At any rate, as already proved by the case of Turin 2006, European mountain regions can hardly sustain, even just in few years from the Games, the burden and costs of all the necessary sports facilities.<sup>68</sup>

## CONCLUSION

### ZAKLJUČAK

The Winter Olympic Games is increasingly considered and exploited as a *driver* of economic, urban and regional development. It represents a great discontinuity that can accelerate and boost infrastructural projects, foster tourism and promote an overall improvement and modernization of regional services and transport.

However, in order to gain a positive and sustainable legacy in a long-run perspective, it should be better understood and implemented in the framework of some broader, continuous and pre-existing planning processes (as it was for instance the long lasting plan for the Turin urban renewal).<sup>69</sup>

Each of the regional planning strategies has been affected by its territorial setting and, when applied, has modified this in turn. Nevertheless, the role and importance of regional, landscape and spatial planning in defining and guiding the Olympic project was still undervalued in the three case studies (although with some evident differences) and "subordinated" to the pressing issues and logics of transportation and economic development.

This, often, has led to overdimension the constructions and investments and to underestimate the territorial impact of the Olympic facilities and infrastructures, a matter which still appears very far from being properly and sustainably addressed.

<sup>66</sup> Besides Turin and Sochi: Nagano 1998, Salt Lake City 2002, Vancouver 2010, Pyeongchang 2018 and Beijing 2022.

<sup>67</sup> Cf. PETROVIC, 2009. In particular, a parallel between the waterfronts of Sochi 2014 and of EXPO'98 in Lisbon would highlight the importance of landscape architecture in such urban (re)development projects. [Cf. PETROVIC, et al., 2013]

<sup>68</sup> In this respect, reversible structures and environmentally sound interventions, as well as the use of compatible construction materials, should be considered as priority

actions (a good example is the Olympic village of Lillehammer 1994, dismantled after the Games and reassembled where really needed in a long-time perspective).

<sup>69</sup> On the mountain side, National parks and protected areas should also play a more evident role, bringing in their expertise in landscape ecology and natural sciences, and claiming for the sustainable preservation and improvement of the ecological network resilience, the related ecological services and the overall landscape matrix, not only within their own territorial jurisdiction but even outside (e.g. buffer zones, landscape corridors).



TABLE I | SUMMARY COMPARISON OF THE OLYMPIC REGIONAL SPACES

TABL. I. SAZETA USPOREDBA OLIMPIJSKIH PROSTORA

TURIN (Piedmont, Italy)	SOCHI (Krasnodar Krai, Russia)	KRAKOW (Małopolska, Poland)
<b>Olympic venues</b>		
<ul style="list-style-type: none"> <li>Turin urban area (Lingotto District and Central Backbone) + Pinerolo</li> <li>2 Olympic valleys in the Cottian Alps (Val di Susa and Val Chisone)</li> </ul>	<ul style="list-style-type: none"> <li>Sochi urban region (Coastal Cluster)</li> <li>Krasnaya Polyana (Mountain Cluster in the Caucasian Mountains)</li> </ul>	<ul style="list-style-type: none"> <li>Krakow metropolitan area (Kraków Olympic Park Cluster + Kraków Wista Cluster)</li> <li>Tatra mountains region (Zakopane Cluster + Jasná, in Slovakia)</li> </ul>
<b>Olympic villages</b>		
<ul style="list-style-type: none"> <li>3 main Olympic villages in Turin, Bardonecchia and Sestriere (+ a smaller one in Pragelato)</li> </ul>	<ul style="list-style-type: none"> <li>Coastal Olympic village (the main one)</li> <li>Mountain Olympic village (in Roza Khutor plateau)</li> </ul>	<ul style="list-style-type: none"> <li>Krakow Olympic Village</li> <li>Zakopane Olympic Village and Media Centre</li> </ul>
<b>Sports facilities</b>		
<ul style="list-style-type: none"> <li>More than a half of the needed sports facilities were built new, whether in Torino (indoor structures) or widespread in the mountains (Pragelato, Bardonecchia, Cesana, Pinerolo, Sestriere, etc., mainly outdoor facilities)</li> </ul>	<ul style="list-style-type: none"> <li>All of the required sports facilities, both indoor and outdoor, were built new within two main areas (the coastal and the mountain clusters)</li> </ul>	<ul style="list-style-type: none"> <li>Modernization of 6 existing sports arenas and construction of 5 new ones in Krakow</li> <li>A few of new ski-slopes and ski-lifts + construction of the bobsleigh track, the most discussed and criticized sport facility</li> </ul>
<b>Railways</b>		
<ul style="list-style-type: none"> <li>Construction of the first line of the Torino subway</li> <li>Shift of the city railway line and the central station beneath the ground level</li> <li>Temporary rail-shuttle service in one of the Olympic valleys (Val di Susa)</li> </ul>	<ul style="list-style-type: none"> <li>Reconstruction of the existing railway in order to provide double track throughout</li> <li>Establishment of the high-speed Moscow-Adler connection</li> <li>Construction of a new railroad to the mountains</li> <li>Several new or renovated railway stations</li> <li>6 new tunnel complexes and several new bridges</li> </ul>	<ul style="list-style-type: none"> <li>Construction of 3 additional tram lines in Krakow</li> <li>Renewal of the railway line Krakow-Zakopane</li> <li>Implementation of the Krakow suburban rail system and park and ride facilities</li> </ul>
<b>Road network</b>		
<ul style="list-style-type: none"> <li>Completion of the highway Torino-Pinerolo (second segment)</li> <li>Enlargement of the highway Torino-Bardonecchia (fourth lane)</li> <li>General enhancement of the local mountain road system</li> <li>Overall improvement of the Torino city road system (especially favoured by the underground relocation of the railway line)</li> <li>Construction of 2 hubs in the metropolitan road network</li> </ul>	<ul style="list-style-type: none"> <li>Massive construction of roads, tunnels, bridges and interchanges in and around Sochi (in particular: 8 flyovers, 102 bridges, tens of tunnels and 1 bypass route for heavy trucks, for a total of 367 km of new paved roads)</li> </ul>	<ul style="list-style-type: none"> <li>Enlargement and conversion of the first 60 km of the road Krakow-Zakopane road into a 4 lanes expressway</li> <li>Enlargement of the following 40 km left and building of several bypasses</li> <li>Construction of the third (eastern) ring road in Krakow</li> <li>Possible construction of new routes between Poland and Slovakia</li> </ul>
<b>Airports and harbours</b>		
<ul style="list-style-type: none"> <li>Improvement of the passenger capacity of the Torino-Caselle airport (already existing and quite ready anyway to sustain the visitors' Olympic peak)</li> </ul>	<ul style="list-style-type: none"> <li>A new terminal at Sochi International Airport (4 km overlapping the Mzymta River)</li> <li>New backup airports in Gelendzhik, Mineralnye Vody and Krasnodar</li> <li>A new terminal at the Port of Sochi (which allows docking for cruise ships with capacities of 3,000 people)</li> <li>Displacement of the seaport cargo terminal from the centre of Sochi</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of the carrying capacities of Katowice and Krakow airports</li> <li>Significant enlargement and empowerment of the Nowy Sącz and Nowy Targ local airports (as backup ones) + possible improvement of the Poprad airport in Slovakia</li> </ul>

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- FIG. 5A Jabłońska, T. (2012), *Tatry. Fotografie Tatry i Zakopanego 1859-1914*, Bosz
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- FIG. 13 mobility-bovy.ch (19/4/2016)
- FIG. 14, 17, 18 Arpa Piemonte (2006), *Relazione finale su Torino 2006*
- FIG. 15 zelpage.cz (19/4/2016)
- FIG. 19 D'AURIA, DANSERO, 2008
- TABLE I Authors, 2016

## SUMMARY

## SAŽETAK

## TORINO, SOČI I KRAKOV U KONTEKSTU ŽIMSKE OLIMPIJADE

## PROSTORNO PLANIRANJE I UTJECAJ IGARA NA TERITORIJI

U članku su prikazane tri studije slučaja regionalne strategije za Zimske olimpijske igre u Europi – Torino, Soči i Krakov. Prva dva plana provedena su 2006. i 2014. godine, a treći, koji je bio planiran za 2022. godinu, neće se ostvariti jer se Poljska povukla iz olimpijskog natjecanja nakon referenduma kojim su se građani Krakova izjasnili protiv sudjelovanja. Usporedbeno su analizirani utjecaji sportskih građevina i infrastrukture na teritorij, pozitivne i negativne posljedice za grad domaćin i planinska područja, te ulogu prometne mreže koja povezuje grad sa sportskim terenima u planinama. Rad je rezultat znanstvenog projekta Urbanizam naslijeđa / Heritage urbanism koji se provodi na Arhitektonskom fakultetu Sveučilišta u Zagrebu, a u suradnji s Fakultetom arhitekture i dizajna Sveučilišta Camerino u Italiji. Tri se regije uspoređuju primjenjujući metodu projekta, koja se sastoji od četiri sastavnice: određivanje čimbenika pejzažnog i prostornog identiteta, utvrđivanje postavljenih kriterija za zaštitu krajolika i za izgradnju olimpijskih građevina, prepoznavanje primijenjenih prostornih modela i strategije planiranja te analiza i vrjednovanje scenarija nakon igara.

Poslije Drugoga svjetskog rata Torino je bio najvažniji industrijski grad u Italiji. U kasnim 1980-im godinama industrijska i ekonomska kriza utjecala je na grad. Zato je Gradsko vijeće pokrenulo projekte za revitalizaciju grada. Olimpijski projekt bio je sastavni dio te široke strategije gradskog unaprjeđenja, a imao je različite pozitivne učinke, od kojih su najvažniji: prebacivanje Glavnoga kolodvora i željezničke pruge u podzemlje te novo povezivanje dijelova grada koji su prije bili odvojeni, obnavljanje napuštenih prostora grada i završetak prve linije gradske podzemne željeznice. S druge strane, planinska područja nisu dobila toliko pozitivnih učinaka. Iako je javni prijevoz radio vrlo dobro tijekom sportskoga događaja, zanemariva su poboljšanja u prometu nakon igara jer je većina mjera bila samo privremena, dok su neke goleme sportske građevine utjecale negativno i na pejzaž i na općinski proračun. Primjerice,

skakaonica i staza za bob dovele su do velikih financijskih ulaganja za izgradnju i održavanje, a postale su nepotrebne i nezgrapne strukture zbog nedovoljnog korištenja nakon igara. Građevine su potpuno napustene još prije isteka deset godina, tako da su njihove Općine donijele odluku o zatvaranju, rastavljanju i vraćanju na prethodno stanje okoliša, a to je skup, naporan i vrlo dug proces. Također, četiri olimpijska sela naknadno su pretvorena u prevelike turističke sklopove, što je postojeće tradicionalne smještajne građevine stavilo u financijski nezavidan položaj. Ravnoteža zapadnih Alpa vrlo je delikatna, s obzirom na to da je krajolik kompleksan i višenamjenski: zemlja je podijeljena na male posjede, korištenje zemljišta je različito, naselja su malena, važna je prirodna baština, a graditeljsko naslijeđe je jedinstveno. Takvi su krajolici rezultat duge povijesti teritorijalizacije, koja je proces opodručivanja i preoblikovanja teritorija proveden putem ljudskoga rada.

Unatoč nekim negativnim posljedicama, 20. Zimske olimpijske igre u Torinu bile su uglavnom uspješne i dovoljno usmjerene i na zaštitu okoliša. Prvi je put u Italiji bio primijenjen europski postupak Strateške procjene utjecaja na okoliš, koji je spriječio najgore utjecaje pa se regionalni plan poprilično prilagodio krajoliku, iako su politička i ekonomska pitanja prevladala u cjelokupnom vođenju projekta. Za razliku od Torina, gdje su se sportske arene nalazile u nekoliko dijelova grada, a planinska natjecanja održavala su se u različitim, međusobno vrlo udaljenim mjestima u Alpama, u ruskom Sociju sve je bilo koncentrirano na samo dva mjesta. Okolina zapadnoga Kavkaza i crnomorske obale, duž koje se odvija širenje grada Socija, drukčija je od okolice Torina. Postupak teritorijalizacije počeo je kasnije i malo je utjecao na planine koje su zadržale velik prirodni sadržaj i vrijednost (prije Igara Soči je bio poznat samo kao ljetovaliste na moru jer ima pravu suptropsku klimu). Da bi se olimpijski park na obali dobro povezo s planinskim odredištima, potrebna je bila izgradnja velike

infrastrukture. Također, sva olimpijska borilišta izgrađena su potpuno nova. Rezultat su bile najskuplje olimpijske igre svih vremena, koje su jako promijenile panoramu obale u zaljevu olimpijskog parka, doline rijeke Mzymte i okolice planinskog sela Krasnaja Poljana. Financijska ulaganja bila su tako golemo da je regija sada prisiljena na rast, na stalno organiziranje velikih događaja i na privlačenje što više turista: iako će Soči biti jedan od sjedišta sljedećega Svjetskoga nogometnog prvenstva, a svake godine do 2020. održat će se autoutrika Svjetskoga prvenstva Formule 1 oko olimpijskog parka, budućnost okolice Socija izgleda posve neizvjesna jer nedostaje još uvijek minimalna baza stabilnih korisnika.

Treći slučaj, plan za Krakov 2022., trebao je obuhvatiti cjelokupno područje Tatra, koje su najviše planine u Karpatima i prirodna granica između Poljske i Slovačke. Bilo bi uistinu prvi put da se Zimske olimpijske igre održe u dvjema državama (isto je bilo predloženo za Torino jer se nekoliko sportskih građevina nalazilo na drugoj strani Alpa, u Francuskoj kod Albertvillea, gdje su se Igre već održale 1992. godine). Sportske građevine u Krakovu bile su planirane u različitim dijelovima grada pa bi prostorni model i strategija planiranja bili vrlo slični talijanskom slučaju, kao što je slična i struktura krajolika. Da bi se dobro procijenili čimbenici utjecaja na krajolik i modeli prostornog planiranja u prostoru održavanja Zimskih olimpijskih igara, treba jasno razlikovati prostorne zahvate u planinskim predjelima od onih u gradovima i njihovoj neposrednoj okolici. Potrebno je utvrditi čimbenike pejzažnog i prostornog identiteta pa s obzirom na to procijeniti posljedice planiranih zahvata. Prostorni su modeli Torina i Krakova raspršeni, kao i utjecaji olimpijske infrastrukture na teritorij, dok je model Socija prilično drukčiji zbog krajnosti u smislu veličine i teritorijalne bipolarnosti Igara. U tom slučaju, posljedice sportskih objekata i prometnih građevina evidentnije su i problematичnije pa će biti puno teže njihovo održivo upravljanje u sljedećim godinama.

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