

Collaborative Project



WP8

Task 8.1 Organization of periodic meetings and surveys

Case Study: CROATIA CLIM-RUN Workshop, 21 September 2011, Zagreb

Project No. 265192– CLIM-RUN

7th Framework Programme

Underpinning work to enable provision of local scale
climate information (annual to decadal timescales)

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Summary

Tourism is one of the most important economic sectors in Croatia, contributing to more than 15% of the country's total GDP. It relies heavily upon the country's rich variations of local climates which are influenced by the mid-latitudes atmospheric circulation and geographical factors. Tourism is primarily developed in the Adriatic area (coast, islands) during summer with much reduced share of the continental Croatia (the capital, national parks, winter tourism). The summer tourist season in Croatia is, however, relatively short, mainly because the sea water is colder when compared to some other (southern) Mediterranean destinations. Within the climate change framework, the two major groups of the tourism sub-sectors with different adaptive capacity to climate change will emerge. The first group with high adaptive capacity comprises tourists, tour operators and transport providers; the second group with low adaptive capacity is tourism infrastructure (made of local hotels and resorts) and local communities.

The workshop was divided in two parts. In the first part, various aspects of climate, climate variation and climate change related to tourism were presented and climate potential linked with the natural resources was discussed. In particular, the relationship between the winter climate and winter tourism were addressed, as well as wind conditions at the Adriatic and its possible importance for the nautical tourism. Some results of the climate change modelling for the Mediterranean region and for Croatia that might impact the tourism sector were also presented. They are based on the downscaling method by the regional climate model RegCM. Most results of the future climate projections were shown for the near-future time period 2011-2040 based on the A2 IPCC scenario.

In the second part of the workshop, the presentations covered a broad range of aspects on how the tourism sector in Croatia utilises available climate potential and how it could act in response to the projected climate changes in the future. It was emphasised that not all climatic changes should necessarily have a negative impact on tourism and that the other competitor countries in the Mediterranean (Italy, Spain) would experience the same or similar changes as well. It might become necessary in the future to shift the emphasis from the pleasure (swimming, sunbathing) to the cultural and other forms of tourism.

During the workshop the participants filled the questionnaire prepared by CLIM-RUN.

The CLIM-RUN workshop, 21 September 2011

The workshop in Zagreb was organised by DHMZ and UNDP Croatia. The attendance of potential stakeholders was very poor. Apart from several representatives from organisations that deal with tourism at strategic (state) level (Ministry of tourism, Institute for tourism), there was only one (!?) participant from the operational industry. The e-mail invitation was sent to more than 60 addresses mainly to those who work in the management structures of various tourist resorts,

hotels, camping sites, local (county) tourism association, etc. The failure to gather more potential stakeholders indicates that, as far as tourism is concerned, some sort of “targeted” communication between CLIM-RUN project and potential stakeholders would be needed. Since both DHMZ and UNDP have no resources or expertise for such an activity, a possible improvement may be expected by engaging communication experts for the tourism sector. The full list of workshop participants is given in Resources, and a scan of their signatures is in ANNEX III. The program of the workshop is attached to this document as ANNEX II.

Workshop was opened by a short introduction from Dr. Branka Ivančan-Picek, the assistant to the Director of the Croatian Meteorological and Hydrological Service (DHMZ). The presentation about the CLIM-RUN project and a basic information on Workshop’s goals was given by Dr. Čedo Branković, the co-ordinator of the CLIM-RUN project in Croatia. It was followed by a session of three presentations, focusing on the main climate variables related to the tourism in Croatia.

Dr. Ksenija Zaninović (DHMZ) discussed the three main groups of climate variables (physical, esthetical and physiological) that could be used for a “tourist” description of any destination. Some of them, like precipitation amounts and duration of insolation, combined with biometeorological “comfort” index including temperature, humidity, radiation and wind speed for perception of thermal environment, could be used for making decision by tourists or tour operators where to go or how long to stay at a particular destination. Such biometeorological characteristics (an example is given in Fig. 1) are already available for many places in Croatia. In a changing climate, these characteristics will change and may become worse for some destinations, but improved for some other.

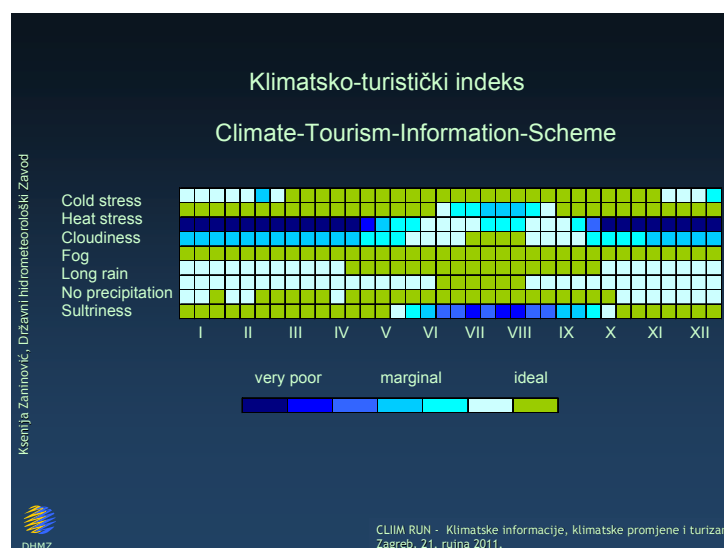


Fig. 1 10-day averages of various climate variables defining a climate-tourism “profile” for a given location

Dr. Marjana Gajić-Čapka (DHMZ) gave an overview of climate data related to the winter tourism. The most important variable is snow, including the height of snow cover, duration of snow season

and the number of days with snowfall. The observed climate change already indicates a reduction in the duration in snow cover at the top of the mountain near Zagreb (Fig. 2). For Croatia, which is not an Alpine country, the projected climate change – an increase in air temperature, changing in local precipitation amounts - can have an adverse impact on winter tourism. At lower altitudes it could bring an additional risk in the planning and development of winter tourism infrastructure.

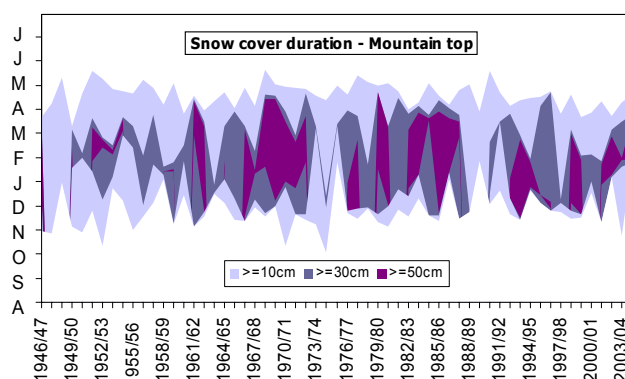


Fig. 2 Snow cover duration at the top of the Medvednica mountain (1030 m) in the period 1946-2004.

Dr. Kristian Horvath (DHMZ) presented the wind climate of the eastern Adriatic coast and its relevance for the nautical tourism, which currently makes about 10% of the total income from tourism in Croatia. In addition to weather forecast, the knowledge of the wind climate is most important to avoid accidents involving yachtsmen. The wind climate at the Adriatic is very specific because of the existence of different wind regimes along the coast (bora, scirocco). The production of the (fine scale) wind climate will be based on dynamical downscaling by high resolution models of local circulation. Such a methodology would enable to obtain important information on the mean wind and its variability in the places where long-term measurements are not available (Fig. 3).

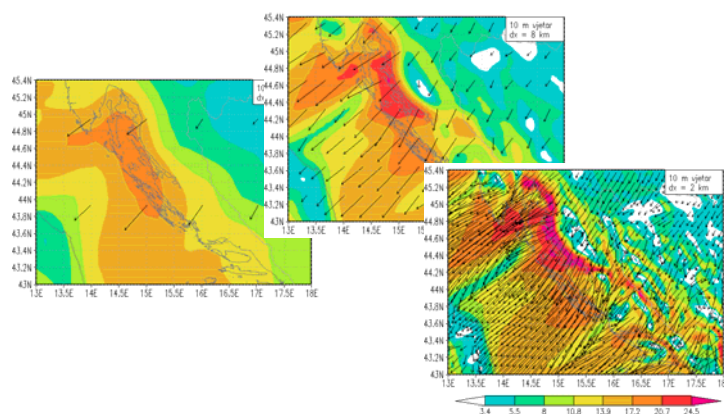


Fig. 3 The three stages of refinements to generate the fine-scale wind climate for the Adriatic.

Dr. Čedo Branković (DHMZ) presented and discussed some results of the climate change projections for Croatia made by the downscaling method with the regional climate model for the A2 IPCC scenario. Some comments on uncertainties of climate scenarios that should be borne in mind when talking about climate change were first given. For the near-future period (2011-2040) a statistically significant increase in temperature is projected, which would entail the increased number of warm days in summer by about 20% relative to the climate of the 20th century (Fig. 4). This may have an important implication on the perception of some parts of Croatia as popular tourist destinations.

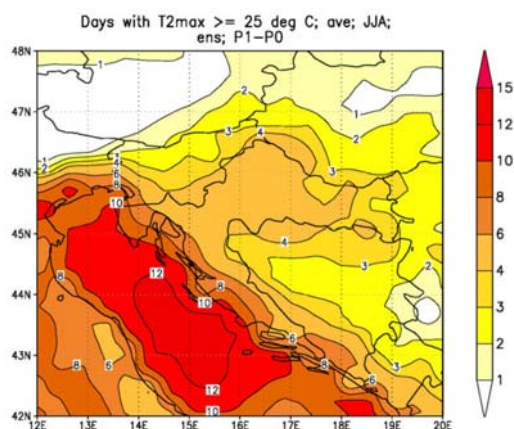


Fig. 4 The average increase in the number of summer warm days ($T_{max} > 25^{\circ}\text{C}$) in the period 2011-2040.

Dr. Zoran Klarić (Institute for tourism) pointed out that some projected climate changes could be beneficial for the tourism sector. In addition to climate change, the potential global financial and energy crises are the main threats to tourism. It is imperative to carefully observe climate changes and to adjust the country's development strategy accordingly. Tourism in Croatia has better adaptive capabilities to climate change than in many Mediterranean countries. These include relatively high and steep coast, less vulnerable to a potential sea rise, and less build-up regions required for the future tourism infrastructure.

Mr. Vladimir Kalinski (UNDP consultant) emphasised the vulnerability of the tourism sector in Croatia because it relies mainly upon the country's natural attractiveness and the high quality ecosystem. Climate change would directly impact the pleasant appearance of the landscape and the specific characteristic of a locality, the projected increase in stormy (extreme) weather would have adverse impact on infrastructure and there may be an increase in health problems. Climate scenarios should be more "precise" taking into account country's geomorphology. The public sector should adapt to the changes by a long-term planning of public services, infrastructure and transport. The private sector could adapt to climate changes by shifting to activities less affected by climate change – e.g. from sun, sea and beaches to culture, cultural events, festivals, gastronomy, history, etc.

Dr. Goran Ivanišević (KBC Zagreb) addressed the importance of the health issues related to climate and climate change. The health tourism with spas and mountain and sea-side health locations represents an important branch of the tourism activities in Croatia. It employs a number of medical specialists who professionally supervise medical rehabilitation and recreation. With climate change (global warming) some locations may lose their role, but it is important to protect the country's natural diversity in order to be used and enjoyed in the future.

Main Results

The ensued workshop discussion was lively and useful. One of the questions raised was, probably prompted by the poor attendance of those directly involved in tourism, whether the tourism sector in Croatia is interested at all to obtain pieces of information on climate and climate change. Some participants complained, on the other hand, that climate information, when available, is not always clear or could be clearly understood. A relatively easy solution would be through a better "education" on climate issues by regularly publishing basic information about climate. For example, promotional material (leaflets) containing basic climate information for various tourist locations may be distributed in tourist information offices, tourist resorts, hotels, camping sites.

It was pointed out that tourism in Croatia is mostly based on family arrivals, i.e. families with children have a rather narrow time window to plan their holidays which normally coincides with school breaks. Thus, a potential benefit of extending the tourist season in a warmer climate to spring and autumn may have a questionable impact on overall tourist turn round.

Another point also emerged, that is, that not everyone working in the tourism sector needs or is interested in climate information – it is required by a relatively limited number of organisations and institutions. Here, the main distinction should be made between potential investors (owners of the infrastructure) and individual tourists. Admittedly, even in strategic planning possible effects of climate change are inadequately considered. This again emphasises the need for a better communication between those who have the knowledge on climate and those who may use this knowledge. Nevertheless, it was concluded that the better information on climate related to the needs of the tourism sector and the better understanding of the climate impact on tourism is important for appropriate planning in the sector as a whole.

Next steps

Based on the discussion on potential interactions between CLIM-RUN and local stakeholders in the tourism sector in Croatia, it has been agreed that:

1. Workshop participants will receive updated information about the project, as well as results from the latest climate research and climate modelling for Croatia.
2. Web page in the Croatian language with all the presentations will be posted on the DHMZ web (published at <http://klima.hr/razno.php?id=projekti¶m=climrun>).
3. Keeping updated those experts who couldn't attend the workshop but are still interested in CLIM-RUN.

Resources

Participants of the CLIM-RUN workshop held in Zagreb, 21 September 2011.

| Name | Organization | Contact |
|-----------------------------|----------------------------------------------------------------|--------------------------------|
| Blanka Belošević | Ministry of Tourism | Blanka.Belosevic@mint.hr |
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ANNEX I. Invitation letter sent for the CLIM-RUN Workshop in Zagreb, 21 September 2011

Radionica o klimi i turizmu, prva obavijest

Poštovani,

Ovim dopisom zadovoljstvo nam je obavijestiti Vas da Državni hidrometeorološki zavod (DHMZ) planira održati u Zagrebu kratku radionicu pod nazivom "Klimatske informacije, klimatske promjene i turizam". Datum i mjesto radionice: srijeda, 21. rujna 2011 od 9h u hotelu Palace u Zagrebu, Strossmayerov trg 10.

Poboljšanje kakvoće i pouzdanosti klimatskih informacija za potrebe gospodarstva i društva u cjelini, te njihovo detaljno poznavanje predstavlja veliki izazov za države i regije čiji ekonomski rast i društveni razvitak ovise o prilagodbi na varijacije klime i klimatskim promjenama. Mediteran, a time i Hrvatska, nalaze se u području koje je ranjivo na promjene u klimatskom sustavu, te je njihov održivi razvoj usko povezan uz već opažene i buduće klimatske promjene. Doprinos turizma hrvatskom gospodarstvu je značajan, a klima je jedan od glavnih resursa turizma. Klimatske informacije nezaobilazne su u strateškom planiranju turističkih kapaciteta i njihove gospodarske podrške kao i operativnih troškova za dugoročna razdoblja. Zbog toga je učinkovita razmjena informacija između znanosti i korisnika klimatskih informacija u sektoru turizma od izuzetne važnosti, te je prepoznata i definirana kao jedan od prioriteta Svjetska meteorološke organizacije.

Cilj radionice je razmjena iskustava i saznanja s potencijalnim korisnicima iz turističke djelatnosti o klimatskim informacijama potrebnim za turistički sektor za naredna desetljeća (okvirno do 2050.). Radionica se održava u sklopu znanstvenog projekta Clim-Run koji financira Europska Komisija. Vjerujemo da ćete svojim prisustvom dati puni smisao radionice.

Program radionice nalazi se u privitku, a zbog ograničenog broja mjesta molimo potvrdite Vaše sudjelovanje do 15. rujna 2011 na e-mail: cedo.brankovic@cirrus.dhz.hr.

S poštovanjem
M. Sc. Ivan Čačić, ravnatelj DHMZ

ANNEX II. Program of the CLIM-RUN Workshop in Zagreb, 21 September 2011

CLIM-RUN Project (www.climrun.eu)**Klimatske informacije, klimatske promjene i turizam****Datum i mjesto radionice:** srijeda 21. rujna 2011., Zagreb, Hotel Palace, Strossmayerov Trg 10**Program**

| Prvi dio | |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 | Okupljanje sudionika radionice, registracija |
| 9:30 | <ul style="list-style-type: none"> * Otvaranje sastanka i pozdravni govor (Ivan Čačić, Ravnatelj DHMZ) * Upoznavanje sudionika * CLIM-RUN, projekt Europske komisije - ciljevi i zadaci (Čedo Branković, DHMZ) * Klimatske informacije i turizam: <ul style="list-style-type: none"> - Klimatski potencijal u turizmu i klimatske promjene (Ksenija Zaninović, DHMZ) - Klima i klimatske promjene za planiranje u zimskom turizmu (Marjana Gajić-Čapka, DHMZ) - Vjetrovne prilike na Jadranu i nautički turizam (Kristian Horvath, DHMZ) * Klimatske promjene u Hrvatskoj (Čedo Branković, DHMZ) |
| 11:00 | Pauza za kavu |
| Drugi dio | |
| 11:30 | <ul style="list-style-type: none"> * Konkurentska pozicija hrvatskog turizma u svjetlu klimatskih promjena u budućnosti (Zoran Klarić, Institut za turizam) * Klimatske promjene i utjecaj na turizam u Hrvatskoj (Vladimir Kalinski, UNDP konzultant) * Klimatski ljekoviti činitelji (Goran Ivanišević, KBC Zagreb) * Diskusija o klimatskim informacijama potrebnim za planiranje u turističkom sektoru * Popunjavanje upitnika i zaključenje radionice |
| 13:00 | Domjenak |

ANNEX III. Signatures of the participants in the CLIM-RUN Workshop in Zagreb, 21 September 2011



CLIM-RUN Project

| Ime i prezime | Ustanova | E-mail | Potpis |
|------------------------|-----------------------------------------------|------------------------------|------------------------|
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| Čedo Braulović | DHMZ | cedo.braulovic@cirius.dhz.hr | <i>Č. Braulović</i> |
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