

LESSONS AND RECOMMENDATIONS GUIDE



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Environment and
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NIGHT LIGHT PROJECT

“Improving regional policies to reduce light pollution and
protect and valorise dark night skies”

LESSONS AND RECOMMENDATIONS GUIDE

*Publication on
the reduction of light pollution and exploitation of dark skies based on lessons learnt*

December 2019

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OVERVIEW

This Guide includes the background, process, results and conclusions of the interregional learning process implemented through the 3-year common activities of the Night Light project partnership.

In the Night Light project regional authorities from The Netherlands, Hungary, Spain, Luxembourg, Denmark, Slovenia and Italy joined forces to improve their regional policies for the prevention of light pollution, preservation of dark skies and the sustainable exploitation of dark sky places.

The project gained packages of regional policy measures for each of the partner regions that are expected to result in a lasting reduction of light pollution, the designation of nature areas where dark skies are protected and the introduction of new services and facilities to attract eco-tourism to these dark sky areas.

The partnership started to work together in 2016 and following a 3-year joint effort based on common understanding, deep and detailed discussions and consultations through several ways, amazing on-site experiences and newly built long-term relationships, this document summarizes the lessons learnt and defines relevant recommendations for all actors acting in this challenging but wonderful development segment.

INTRODUCTION – POLICIES IN FOCUS

Building up the project content and structure, partners preliminary identified the policies to be improved in each partner region:



Starting the common work, partners defined their core issues to solve:

PROVINCE OF FRYSLÂN:

In Fryslan NightLight will strengthen the awareness of the positive effect to feel the night with all your senses, resulting in many places to experience the night.

AVILA COUNTY COUNCIL:

Avila keeps one of the cleanest and darkest skies in the whole country, thanks to Night Light project that contributes to reduce light pollution for preserving dark sky in Avila province, therefore, to achieve wellbeing of its inhabitants and to be enjoyed by astrotourism lovers. Avila keeps shining.

HAJDÚ-BIHAR COUNTY GOVERNMENT:

Making people not be afraid of darkness and convincing them to take care of it in all respects while utilizing the potential it provides for local economy is a challenge now and will come true to the end of the project.

NATURE PARK OUR:

With Night Light, Nature Park Our will reduce light emissions in its municipalities and support sustainable dark-sky tourism developments. As a side effect, the project will make a positive contribution to regional energy efficiency.

SAMSØ ENERGY ACADEMY:

In Denmark there is no policy in the area of light pollution, and the Night Light project therefore aims to address this problem of light pollution through awareness, concrete measures and policy making. The Night Light projects local stakeholder group and Samsø Energy Academy is now actively working to show how energy efficiency, tourism and cultural development can go up to a higher level when it comes to combating light pollution in Central Region of Denmark.

BSC, BUSINESS SUPPORT CENTRE LTD., KRANJ:

Together with stakeholders in the Gorenjska region we will pave the way towards the first dark sky area in Slovenia and at the same time increase appreciation for such areas, resulting in the preservation of the delicate natural environment, development of astrotourism products and effective measures to maintain darkness in our region.

BASILICATA REGION:

The Basilicata Region is one of the "darkest" regions in Italy and thanks to the Night Light project will continue its commitment to reduce light pollution for preserving dark sky in the entire region. With Night Light, Basilicata Region will enhance this precious resource by developing products for parks (astrotourism) and actions to support the attractiveness of the natural areas of the regional territory.

MATERA-BASILICATA 2019 FOUNDATION:

With the Night Light project the Foundation Matera-Basilicata will raise awareness at urban and then at regional dimension about the values expressed in the project such as the values and importance to reduce light pollution, preserve and valorise dark skies and boost experimental tourism focused on dark sky storytelling and stargazing.

ISLAND GOVERNMENT OF LA PALMA:

For La Palma this project will change the local vision of the dark night for an international concept where La Palma has many qualities.

The above goals – made up of challenges and potentials – provided the framework for the interregional learning process.

LEARNING PROCESS

The joint work of the partnership included a well-structured process: the identification and mutual learning of good practices were enriched by several fruitful events like interregional policy learning seminars and peer reviews.

The processes of the above three main interregional actions led to the opportunity to utilize this knowledge and experience for the definition of regional actions to improve the originally identified regional policies and create an enhanced level of protecting and utilizing dark skies.

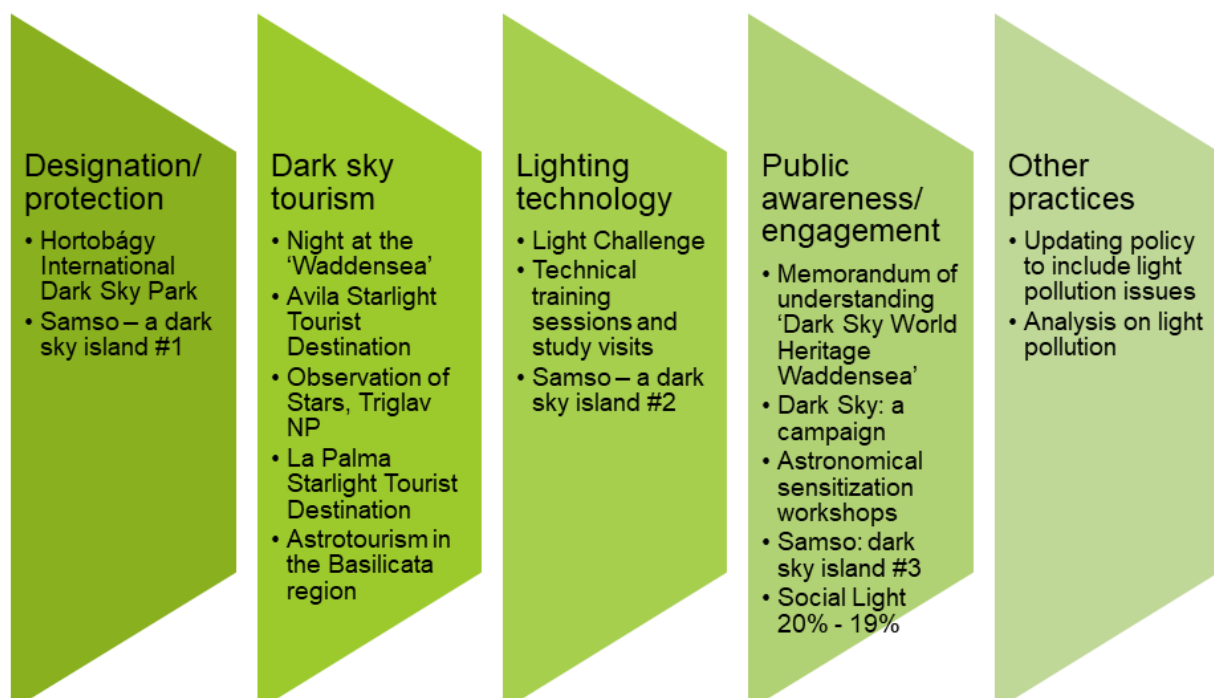


Moreover, all these activities have been strongly based upon the efforts of *regional stakeholder platforms* where experts, practitioners and policy makers joined forces to define the needs and potential answers concerning their own regional challenges together.

Looking at the good practices found, they can be grouped around some main themes:



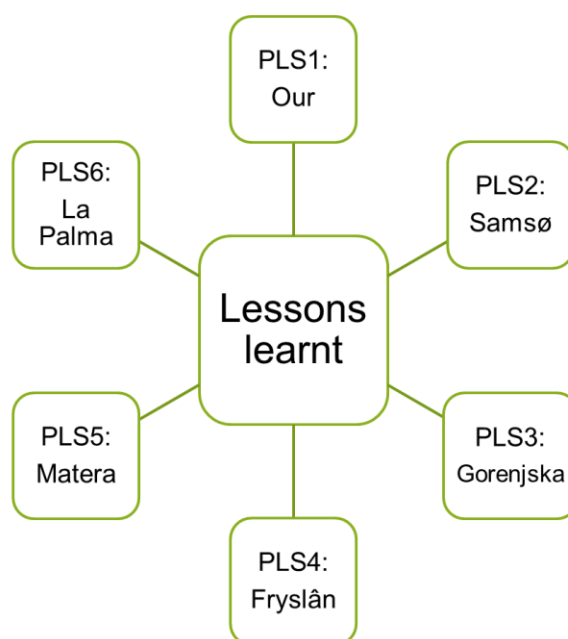
Based upon this structure, partners found and introduced those practices they evaluated as good following detailed discussions with their stakeholders. These practices have been collected in the directory of good practices:



These good practices have been introduced through the Interreg Europe website's relevant section:

<https://www.interregeurope.eu/nightlight/good-practices/>

Policy learning seminars (PLS) provided an interesting platform for policy makers, different actors from the field of public lighting, governance, nature protection, tourism and related fields bringing these practitioners together with their expertise and role in protecting, promoting and exploiting dark skies.

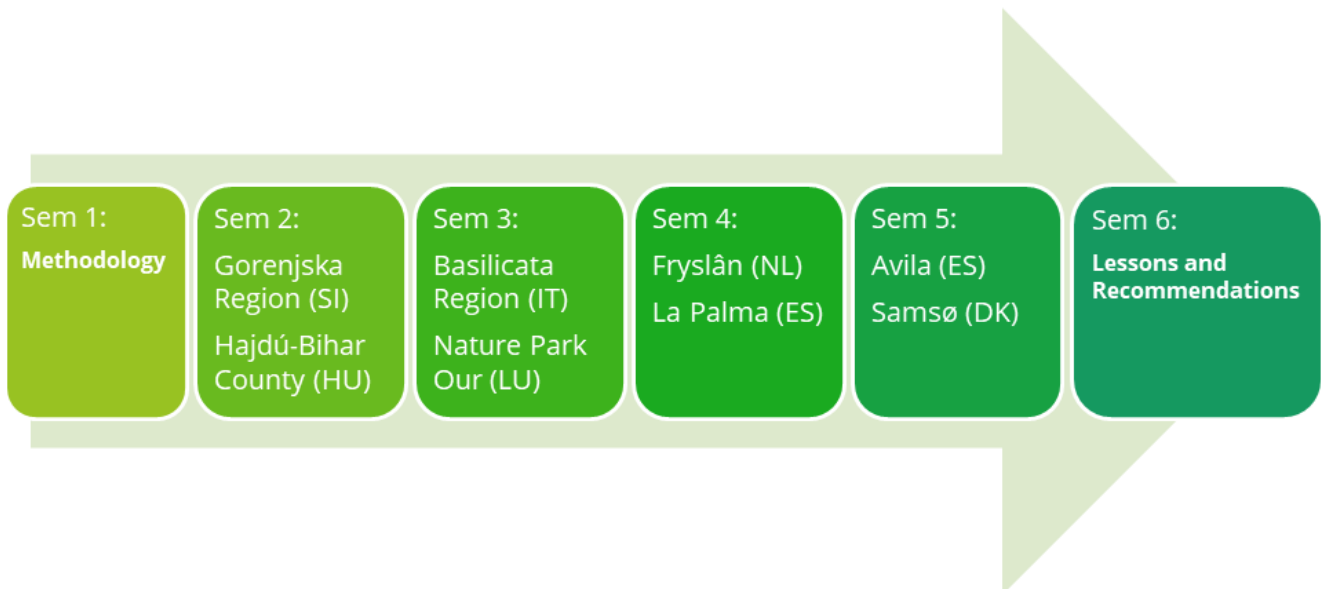


These events served as forums where partners and stakeholders exchanged and learned about relevant policies and practices, shared experiences from the peer reviews and action planning process.



During each seminar, partners worked on 3 main dimensions of reducing light pollution and protecting dark skies: public engagement, lighting technology and valorisation of dark skies.

Strengthened by specified expertise and on-site experience, *peer reviews* (totally 8 events) offered another type of learning meaning an effective method for policy learning at partner and stakeholder level.



In a peer review, experts from the partner regions visited a hosting partner region to analyse the situation and challenges linked to the project issue and proposed interventions to improve the host region's targeted policy. It was a mutual learning process as the visiting experts also sharpened their knowledge and capacities on the practices of the host region.

The process was coordinated based on the peer review toolkit providing the detailed method of a peer review session. Dedicated expert team has been selected for each review from partner staff and regional stakeholders from all partner regions with the right expertise.

Each partner participated in the peer reviews of at least 5 other regions getting in-depth knowledge of the regional situation.

For the regional peer review events (PR), different focus themes have been preliminary defined in each region:

- ✓ PR1 – Hajdú-Bihar
 - ✓ *Awareness/Marketing-Tourism/Education*
- ✓ PR2 – Gorenjska
 - ✓ *Development of nature areas towards Dark Sky (light pollution/tourism)*
- ✓ PR3 – Matera
 - ✓ *Astrotourism/Dark sky preservation*
- ✓ PR4 – Our
 - ✓ *Awareness/Marketing/Tourism/Regulation-light pollution*

- ✓ PR5 – Fryslân
 - ✓ *Sustainable Dark Sky tourism/business models/engaging local communities*
- ✓ PR6 – La Palma
 - ✓ *Awareness/engaging public sector/tourism/politicians+public/lighting quality*
- ✓ PR7 – Avila
 - ✓ *Awareness/dark sky culture/reducing light pollution/astrotourism business development/institutional challenges*
- ✓ PR8 – Samsø
 - ✓ *Legislation on light pollution/dark sky tourism/supporting local entrepreneurs*



At the end of each review, the team presented their analysis and proposed policy improvements to an audience of stakeholders, responsible policymakers, politicians and regional media. Shortly after the visit, the expert team also submitted a more detailed report of their findings and recommendations to the host region.

These reports were dominant sources for the development of regional actions.

LESSONS LEARNT

Following the joint activities of interregional learning process, there are some *core findings* defined:

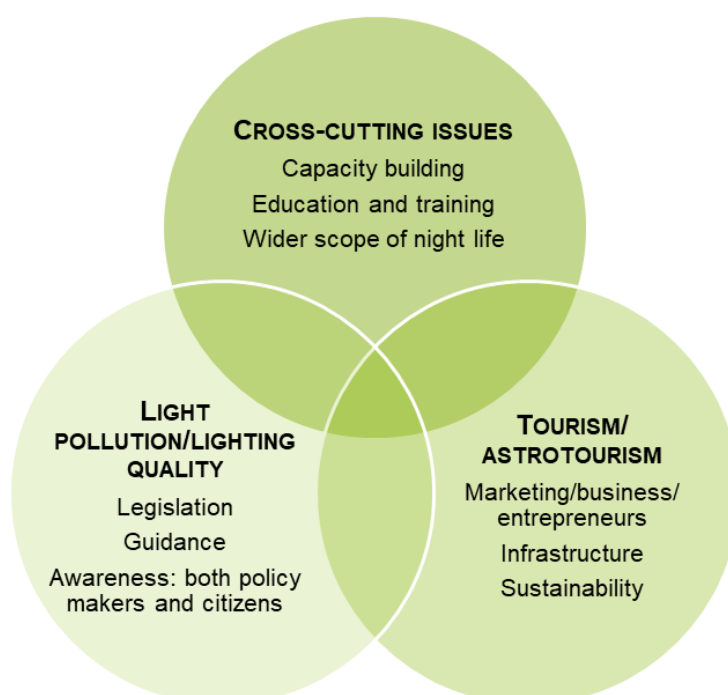
- ❖ Most important light pollution sources endangering dark areas are identified
- ❖ Demand for new type of sustainable tourism products is stated
- ❖ Efficient education and awareness raising is a must have
- ❖ Commitment of both citizens and policy makers is missing
- ❖ Clear intervention logic should be structured
- ❖ Dedicated human capacity is a first step

In order to achieve actual results, it is essential to consider the *role of regional stakeholders*:

- ❖ The involvement of stakeholders was found extremely valuable at all level for each partner; the direct involvement was solved via regional stakeholder group meetings, peer review events and policy learning seminars; strong, committed and long-term interregional relationship has been built based on the joint learning
- ❖ Stakeholder network should be activated where needed
- ❖ Partners have to provide stakeholders a well-prepared and managed coordination
- ❖ Strengthening and widening the stakeholder network is determining
- ❖ It is necessary to include lighting companies and technical actors in the regional stakeholder group
- ❖ Stakeholders and collaborating networks including citizens and entrepreneurs, scientists and politicians, nature conservation experts and light quality technicians should join their commitment and forces

Considering the main findings, several *observations and solutions* have been pre-formulated by the partnership divided by the themes covered.

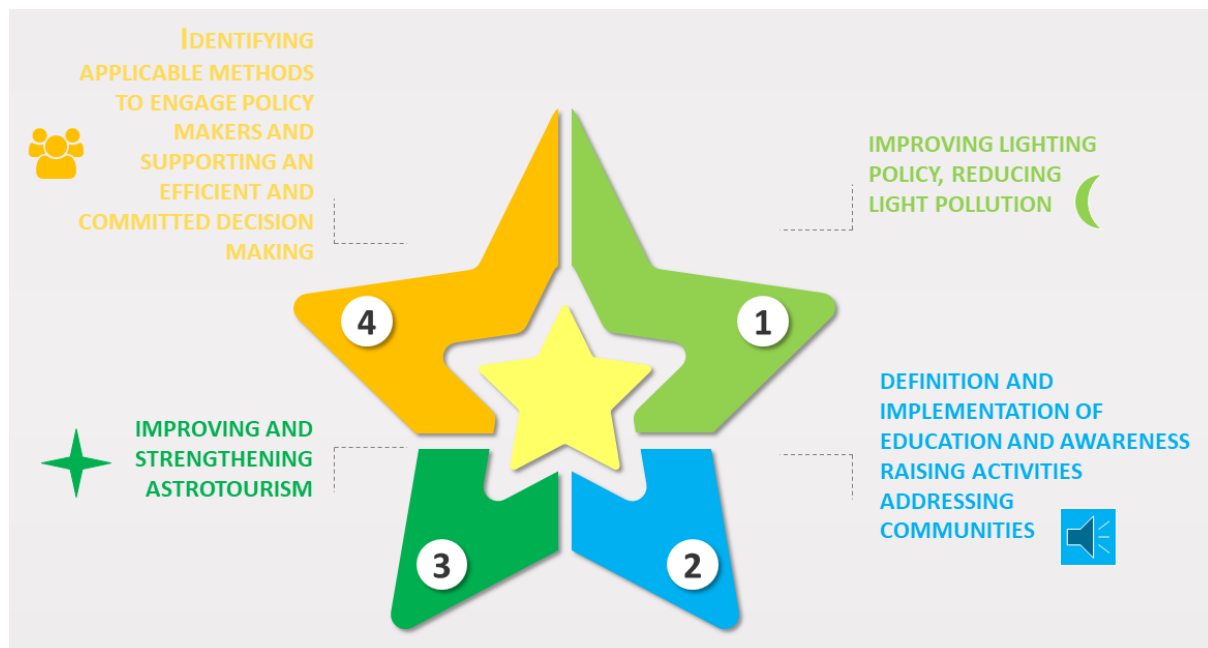
There is a brief summary of the core issues:



RECOMMENDATIONS – THEMATIC GUIDANCE FOR FUTURE

In order to support the future work of European regions in the theme of Night Light, the most significant results – highlighting the actions defined by partners – have been identified and marked as applicable solutions in the different thematic fields of protecting and preserving our dark skies.

The practices, solutions and actions reflect the core activities and intervention fields of the Night Light project:



These four topics include several opportunities covering a wide range of potentially applicable actions:





Based on the lessons learnt and final discussions within the partnership in coordination with stakeholders, the following 4 boxes have been developed providing detailed actions and activities for those working for a better dark sky status.

Policy makers and practitioners, citizens and nature protection experts, politicians and tourism actors all can find applicable practices to adapt in their region.

It has been learnt that without favourable institutional frameworks and policy environment it is almost impossible to achieve result both for reducing light pollution and utilizing the potential of dark sky.

Long-term predictable policies, committed political and administrative actors can strongly support the efforts.

It is also important to enhance the understanding, the common understanding of the danger and negative consequences of light pollution as well as the newly emerging options for local economies.

IMPROVING LIGHTING POLICY, REDUCING LIGHT POLLUTION

ANALYSIS AND CONTROL OF LIGHT POLLUTION SOURCES

- ❖ Mapping light pollution
- ❖ Strengthen the adoption of energy saving systems and the reduction of light pollution
- ❖ Prevent and reduce light pollution in agricultural/rural areas and promote the use of appropriate technologies
- ❖ Strengthen control actions for compliance with legislation on the reduction of light pollution
- ❖ Replacement and renovation of existing plants (adaptation and optimization processes)
- ❖ Implant and implement a night lighting management system – setting up a system for managing lighting quality objectives

IMPROVING LIGHTING QUALITY PROTECTION

- ❖ Installing sky quality meters
- ❖ Applying TESS (telescope encoder and sky sensor) measurement equipment for dark sky quality
- ❖ Establish local rules for light pollution control in astronomical observation sites and astronomical view points
- ❖ Guarantee the safety of lighting systems and safeguard against light pollution - ensuring the safety of lighting sources

CREATING THE FRAMEWORK FOR GOOD LIGHTING - GUIDELINES FOR MUNICIPALITIES AND PILOT EXPERIENCE

- ❖ Guidelines for different sectors and different administration levels (e.g. „Guideline on lighting practice for nature conservation bodies and national park directorates” in Hungary)
- ❖ Applying pilot experience/Show room/Living lab
- ❖ Building light pollution issues in national/regional/municipal spatial planning through the revision of existing planning documents

INTRODUCTION, FAMILIARIZATION AND IMPLEMENTATION OF DARK SKY POLICY

- ❖ Setting up „Team for the Sky” working group involving national policy makers
- ❖ Introduction of latest challenges, achievements and measures concerning light pollution and astrotourism for policy makers/decision makers by “Team for the Sky” working group; regular meetings at least once a year
- ❖ Setting up Sky Pact committee, regular meetings
- ❖ Introducing and disseminating lessons learned for other communities through regional stakeholder groups, network meetings
- ❖ Developing guidelines for future municipal projects in new buildings, refurbishing old buildings and renovating other sites

DEFINITION AND IMPLEMENTATION OF EDUCATION AND AWARENESS RAISING ACTIVITIES ADDRESSING COMMUNITIES

PROPER DEFINITION OF TARGET GROUPS

- ❖ Involvement of education, training and marketing experts to have the best results

STRENGTHENING PUBLIC PARTICIPATION AND SOCIAL CONTROL

- ❖ Making information available about light pollution
- ❖ Strengthening public supervision
- ❖ Creating participatory campaign framework

ORGANISATION OF DEDICATED EVENTS

- ❖ Painting/essay/photo contest for school children
- ❖ Dynamization with local amateur groups
- ❖ Telescope handling workshops
- ❖ Astronomy day at schools
- ❖ Organised visits to observatory
- ❖ Astronomer workshop

INTRODUCING TARGETED EDUCATIVE AND AWARENESS RAISING ACTIVITIES FOR DIFFERENT AGE GROUPS

- ❖ Educative activities with secondary schools and Training Teachers programme
- ❖ Awareness raising activities with local communities (presentation + stargazing in municipalities) and presentation to university students
- ❖ Organisation of technical sessions for Public Lighting in municipalities (jointly with regional authority, lighting installation companies and engineering)

UTILIZING DARK SKY AS CULTURAL HERITAGE

- ❖ Designing and introducing an exhibition/travelling exhibition introducing the role of stars and starry sky in traditional regional/local culture and history (e.g. shepherds' culture and transhumance in Hungary, Slovenia and Italy)

DARK SKY MARKETING BY STORYTELLING

- ❖ Introducing the exceptional universal values of starry sky through storytelling; where man and nature meet, stories are written: top nature, dynamic landscapes, appealing culture and region-specific activities to strengthen pride of communities
- ❖ Providing specific, well-coordinated and professionally led marketing actions addressing local communities

BROADENING THE EXISTING DARK SKY NETWORK

- ❖ Definition and implementation of multilateral Dark Sky World Heritage programs
- ❖ Cooperation between the regions (Dark Sky Communities) having dark sky heritage involving regions having only the potential yet emphasizing the apparent values like space, tranquillity, openness, nocturnal darkness, unique living nature, undisturbed dynamics of environmental/natural elements
- ❖ Organization of multilateral meetings or workshops to inform and inspire each other to promote, together with communities and stakeholders, various initiatives for reducing light emissions: to prevent unnecessary lighting, the exchange of best practices, technological innovations or monitoring activities without losing the sight of safety standards

IMPROVING AND STRENGTHENING ASTROTOURISM

DEFINING AND IMPLEMENTING DARK SKY ACTIVITIES

- ❖ Looking for true stories
- ❖ Identifying enthusiastic entrepreneurs
- ❖ Incorporating Dark Sky into existing products
- ❖ Developing/strengthening the branding of a region to focus on the broader 'Green' profile and integrate eco touristic products: Dark Sky as a green sustainable tourism product
- ❖ Defining target group and involving people of all age groups
- ❖ Defining what is specific for a region
- ❖ Connecting the story with the regional traditions and history
- ❖ Creating a group of Dark Sky ambassadors
- ❖ Training guides for Dark Sky tourism
- ❖ Setting up/Applying a certification scheme
- ❖ Training Course on Astronomic Starlight Guides
- ❖ Involving tourism experts to advise on the whole tourism sector
- ❖ Organizing sensitizing festive events (e.g. „Night, light and more” in Luxembourg)

STRATEGY ON ASTROTOURISM DEVELOPMENT AND PLATFORM

- ❖ Strategy on Astrotourism: Roadmap to develop the tourism related to the stars
- ❖ Raising awareness on accommodation providers sector (rural lodging)
- ❖ Raising awareness on tourism sector taking the advantage of tourism events and fairs
- ❖ Astrophotography contests and events attracting both residents and visitors

STRENGTHENING ASTROTOURISM THROUGH SPECIAL OFFERS

- ❖ Formulation of „Astro-Gastro” tours merging starry sky and traditional gastronomy values or creating new innovative culinary offers linking food and stars/dark sky
- ❖ Making the base to efficiently link different types of tourism assets (e.g. spa, national park, gastronomy, starry sky in Hajdú-Bihar county; history, nature, gastronomy and dark sky in Ávila) to boost the sector in a green and sustainable way widening and updating existing offers
- ❖ Creating Dark Sky experiences and facilities

IDENTIFYING APPLICABLE METHODS TO ENGAGE POLICY MAKERS AND SUPPORTING AN EFFICIENT AND COMMITTED DECISION MAKING

STRENGTHENING DARK SKY IDENTITY WITH EMPOWERMENT ACTIONS

- ❖ Empowerment actions to create the cooperation between generations embedded in different events

DEFINITION OF THE ROLE AND RESPONSIBILITY OF STAKEHOLDERS

- ❖ Reinforcing the role and responsibility of the regional/local decision makers in protecting the luminous environment

ELABORATION AND APPLICATION OF THE LEGISLATION ON THE REDUCTION OF LIGHT POLLUTION AND FOR THE PROMOTION OF ASTROTOURISM AND STAR OBSERVATION

- ❖ Providing practical support (information, knowledge, experience and good practices) for the development of rules and regulations
- ❖ Improving supervision and monitoring involving professionals and practitioners

ENGAGING PUBLIC SECTOR AND LINKING POLITICIANS AND CITIZENS FOR THE JOINT AND SUSTAINABLE ECONOMIC UTILIZATION OF DARK SKY VALUES

- ❖ Clarification of prioritisations
- ❖ Identification of the tourist potentials together with municipalities
- ❖ Elaboration of an outline proposal/ master plan including physical infrastructure
- ❖ Cooperating with municipality representatives for the development of astro-tourism events
- ❖ Presentation of a dedicated and detailed action plan
- ❖ Revealing and mapping funding opportunities in cooperation municipalities
- ❖ Preliminary defined calendar for meetings with all the municipalities concerned within a region
- ❖ Professional communication

COMMON UNDERSTANDING OF ASTROTOURISM AND ITS MARKETING FOR ECONOMY

- ❖ Creating a catalogue for astrotourism thematization - Course for astro-entrepreneurs about storytelling with the outcome of a catalogue
- ❖ Joint definition of new infrastructures while boosting the completion of current constructions
- ❖ Promoting the regions through international events (e.g. Reventon Trail, Astrofest in La Palma)

STIMULATING THE CREATION OF NEW DARK AREAS FOR STARGAZING

- ❖ Setting up the group of experts and stakeholders
- ❖ Preparation of regional strategic documents to become Dark Sky area - Preparation of strategic document with proposed actions involving all stakeholders
- ❖ Regular meetings of the stakeholder group to monitor progress

NIGHT LIGHT (Improving regional policies to reduce light pollution and protect and valorise dark night skies) project (2017-2021) brings together two significant challenges: the need to preserve dark skies and to utilize the potential they have in a sustainable way.

The project was planned to introduce packages of regional policy measures for each of the partner regions that will result in a lasting reduction of light pollution, the designation of nature areas where dark skies are protected and the introduction of new services and facilities to attract eco-tourism to these dark sky areas.

Partners

- ❖ Province of Fryslân - Lead Partner
- ❖ Hajdú-Bihar County Government (HU)
- ❖ Avila County Council (ES)
- ❖ Nature Park Our (LU)
- ❖ Samsø Energy Academy (DK)
- ❖ BSC, Business support centre Ltd. (SI)
- ❖ Basilicata Region (IT)
- ❖ Matera-Basilicata 2019 Foundation (IT)
- ❖ Island Government of La Palma (ES)



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For further information about the NIGHT LIGHT project please visit:

<http://www.interregeurope.eu/nightlight>

The information in this document does not necessary reflect the opinion of the Interreg managing authorities and the European Union.