



# **SHORT BOOK**

## **THREATS TO AND ENABLING FACTORS FOR SUSTAINABLE CO- EVOLUTION IN MEDITERRANEAN TOURISTIC AREAS**

**CNR-ISMAR & PAP/RAC**



**CO-EVOLVE**

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# COASTAL AND MARITIME TOURISM IN THE MEDITERRANEAN

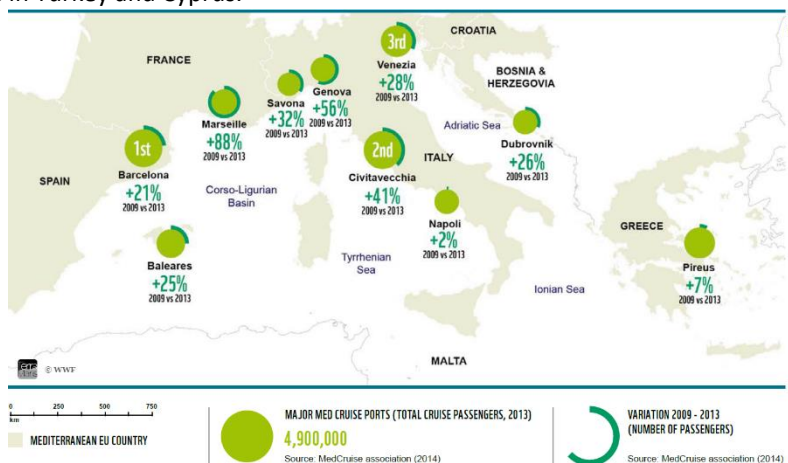
The Mediterranean Basin attracts more than 30% of the international tourist arrivals, especially during summer months. In 2012 nearly 300 million international tourists visited the region, substantially contributing to the economy of the Mediterranean countries (especially Malta, Cyprus and Croatia). Southern EU countries such as Spain, France and Italy have a leading role in the distribution of international arrivals in the Mediterranean region, with a total market share of over 60%, followed by rapid growth rates of the Southern and Eastern Mediterranean countries. Turkey is the top non-EU destination with 40 million visits recorded in 2014.

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*Coastal tourism has been identified as one of five priorities of the EU Blue Growth Strategy.*

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The Mediterranean Sea is among the most important cruise and yachting destinations in the world, but also a rapidly emerging destination for recreational boating. There is a growing demand for spatial expansion of marinas and recreational ports on the Mediterranean coast. Approximately 75% of cruise ports in the Mediterranean are located in Italy, Spain, France, Greece, and Croatia and 9% in Turkey and Cyprus.

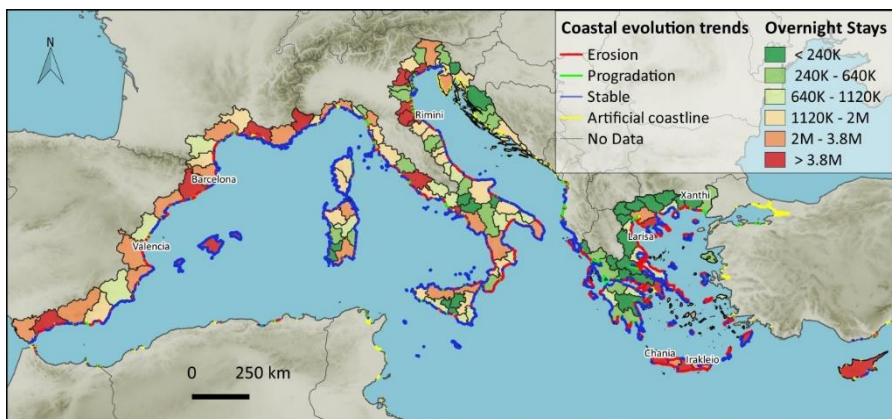


**Growth of Mediterranean ports in number of cruise passengers between 2009 and 2013.**

# THREATS AND ENABLING FACTORS (T&EF) TO/FOR SUSTAINABLE TOURISM

## CLIMATE CHANGE AND MORPHOLOGICAL STABILITY

Many important tourist destinations along the EU Mediterranean coast are exposed to erosion. Hot spot areas for coastal erosion are noted in a significant part of the Spanish coast (e.g. Valencia, Barcelona), the Adriatic-Ionian coast (e.g. Rimini), with emphasis on its northern part, and the island of Crete (Chania and Irákleio). The eastern coast of Greece also suffers from erosion, but coastal tourism pressure is still low (e.g. Xanthi and Larisa).



**Coastal evolution trends and NUTS III overnight stays (average 2010-2015) in the Northern Mediterranean.**

If over the past decades the broad erosion along the Mediterranean coasts has been basically related to the anthropogenic development, which altered the overall sediment budget and the natural balance of littoral sand nourishment, the future erosion trends will additionally largely depend on the climate change effects (sea-level rise and extreme events). Low-lying sandy and highly subsiding coastal areas will be the most exposed. Coastal tourism is very sensitive to climate change; consequently, the vulnerability to climate impacts will increase as well.

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*Coastal erosion is usually the result of a combination of factors - both natural and human induced - that operate on different scales.*

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CO-EVOLVE developed a geodatabase (at Mediterranean NUTS III scale) containing information about coastal morphodynamics and oceanographic and climate conditions, necessary to analyze and identify threats to the coasts and related touristic activities.

## COASTAL PROTECTION MEASURES

Building coastal defence structures is a concrete way to prevent or reduce erosion at the local level. A significant presence of hard defence structures is observed in several Mediterranean areas characterized by sandy beaches and high urban development. Well-designed defence structures generally reduce the erosion rate of the protected beach, and are often combined with sand supply, dredging and nourishment in the framework of ICZM policy development.

Although the technique of beach nourishment is nowadays becoming much more adopted in the Mediterranean region and it is recommended in all the policy documents mentioned above, it is often applied as a measure of a remedial rather than preventive strategy. Therefore, an overall long-term planning, coastal management, and regular monitoring of the coastline should be included in the planning of this type of measures as part of ICZM policy. Efforts by authorities and stakeholders to implement ICZM recommendations are always desirable and suitable.



*Example of beach nourishment - Lido de Frontignan - Maguelone – Herault*

## TOURIST FLUXES AND CARRYING CAPACITY

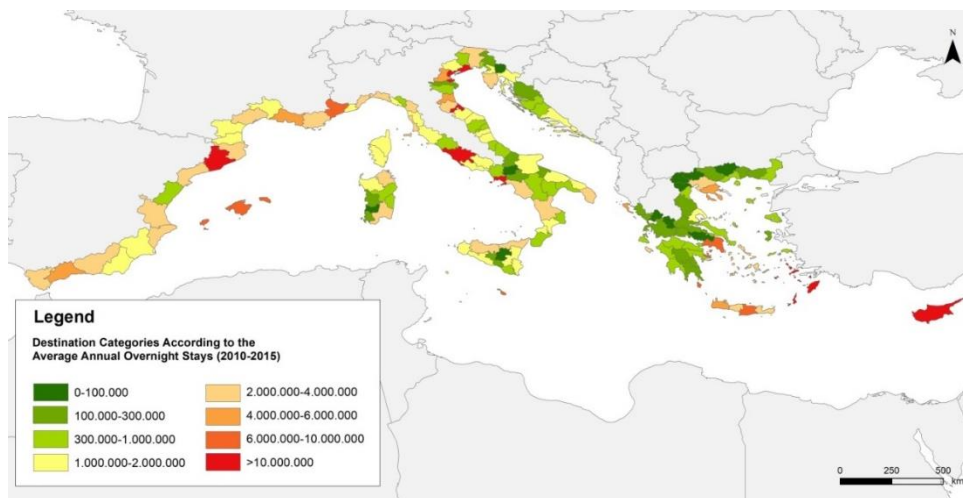
Massive tourist fluxes can alter and compromise tourism destinations causing several potential direct and indirect impacts, strictly linked to the increasing need of local resources, space and to the over-production of waste/pollution.

The Tourism Carrying Capacity Assessment (TCCA) is a valuable decision-making tool for maritime and coastal tourism destinations planning. A system of metrics for a logical assessment of TCC for five types of maritime and coastal tourism in the Mediterranean has been developed in the frame of CO-EVOLVE.

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*Diversification of the tourist offer, de-seasonalization and distribution of the flows on wider areas are all key actions to reduce the pressure from tourist fluxes.*

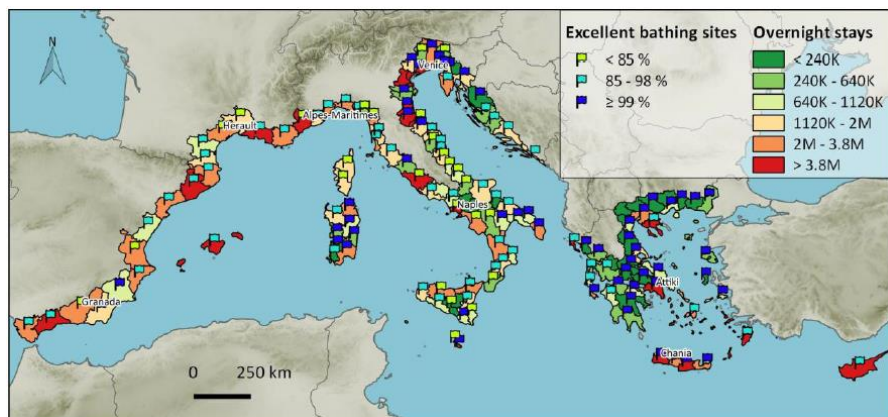
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***Destination categories according to the Average Annual Overnight Stays (2010-2015)***

## POLLUTION AND OTHER ANTHROPOGENIC PRESSURES TO ECOSYSTEMS

Overnight stays can be compared with the quality of coastal waters, represented by an indicator highly relevant for tourism, i.e. the percentage of bathing sites with excellent water quality (bathing season 2016). There is a general positive relationship between tourist fluxes and bathing water quality. However, the oceanographic conditions (i.e. semi-enclosed versus open seas) and of course management of sewerage and treatment systems in place play a significant role in guaranteeing satisfactory water quality. High tourist fluxes coupled with high bathing water quality are recorded in some NUTS III areas of the Northern Adriatic and Greece, while the Western Mediterranean has an overall lower bathing water quality.

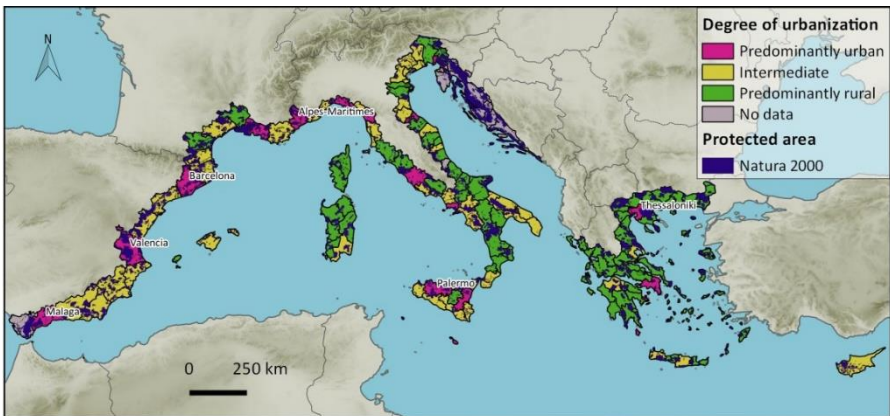


**Bathing water quality and NUTS III overnight stays (average 2010-2015) in the Northern Mediterranean.**

## ECOSYSTEM PROTECTION

Healthy coastal ecosystems provide multiple benefits for coastal tourism. They support recreation, wellbeing, aesthetic experience and intellectual stimulation. These so-called “cultural ecosystem services” rely on other services provided by coastal ecosystems crucial for tourism development, such as for instance micro-climate regulation and protection from coastal erosion. Considering the importance of ecosystem services for coastal tourism, current regulations, such as the Maritime Spatial Planning Directive, need to be supported and guided by an ecosystem approach, which takes into adequate consideration also the role of ecosystem services.

Conservation measures are concentrated more in the EU Northern Basin (Corso Ligurian Basin) and in the Central Basin (between Tunisia and Sicily), than in the southern Mediterranean Basin.



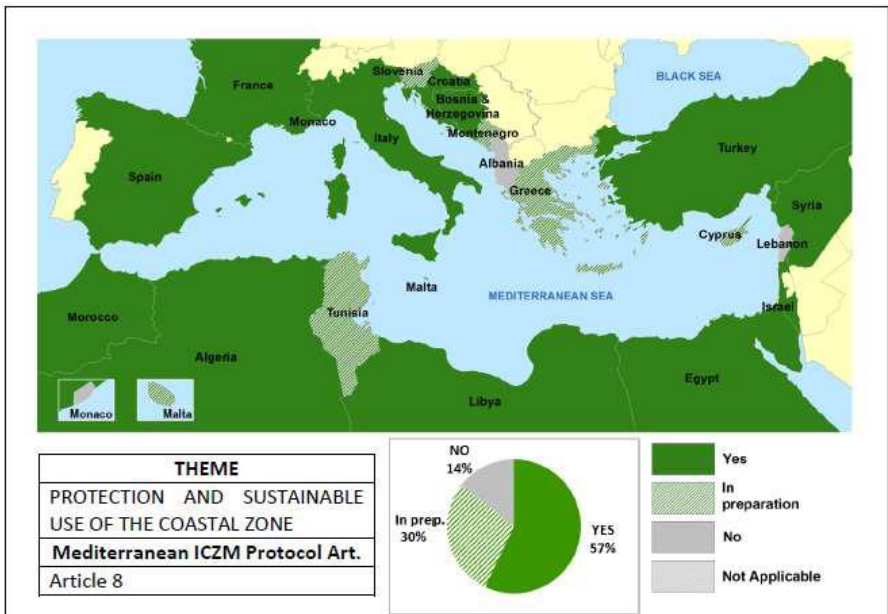
***Degree of urbanization and Natura 2000 sites in the Northern Mediterranean***



## LITTORALIZATION AND URBANIZATION

Coastal urbanization/littoralization can be considered as both a threat to and a main component of the tourist destinations development. Mature tourist destinations with high tourism dynamism show the highest degree of coastal urbanization/littoralization (e.g. Attiki, Rome, Barcelona, and Malaga), while regions characterized by low to medium touristic pressure are still predominantly rural (e.g. Evros, Rovigo, Ogliastro).

The ICZM Protocol of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995), the so-called “Barcelona Convention”, is the main instrument at the basin scale to address littoralization/urbanization. In its article 8, it requires of the contracting parties to establish a setback zone where construction is not allowed in the first 100 meters from the shore. To a different extent, all Mediterranean countries have developed a strategy to plan and manage land use in their coastal areas, with the final aim of promoting their sustainable development.



*Countries having or setting up a 100-metre setback zone where construction is banned as requested by the ICZM Protocol (PAP/RAC, 2014)*

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*If the urbanization rate of European countries is expected to increase by a moderate degree by 2050, North African countries' rate will grow even more rapidly (Salvati, 2014).*

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## CONFLICTS AMONG DIFFERENT USES ON LAND AND AT SEA AND LAND-SEA INTERACTION

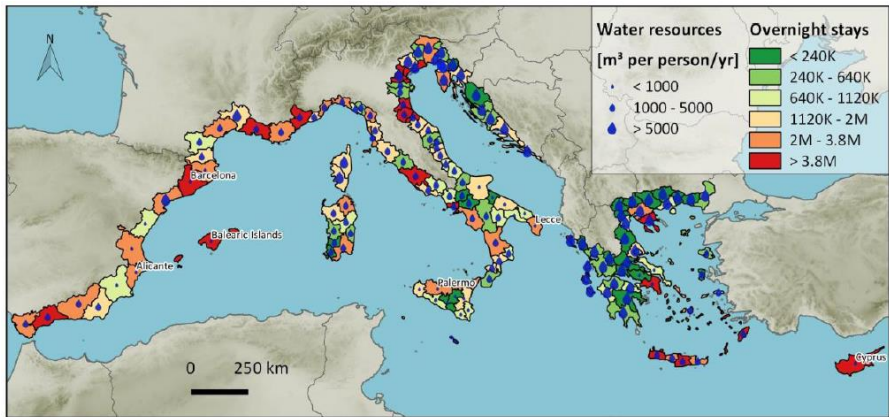
The Mediterranean has long been the focal point of interactions between different coexisting and often conflicting socio-economic activities, such as fisheries and agriculture, energy extraction and exploration, and maritime transport. However, currently the maritime and coastal tourism is the largest sea-related economic activity in the Mediterranean region. Future scenarios indicate that in 2030 the Southern and Mediterranean Europe will receive 103 arrivals per 100 inhabitants. The forecast for energy extraction and exploration is for an increased exploitation of offshore oil and gas deposits, while for maritime transport a 4% annual growth rate in global trade over the next decade can be anticipated.

Similarly, fish aquaculture production in the Mediterranean countries of the EU is expected to increase by 112% between 2010 and 2030. Impacts from other activities on tourism include, for instance, negative interactions with marine aquaculture (conflicts over the use of space and local degradation of ecosystems), the density and negative influence of ports infrastructures, and negative interactions with off-shore oil and gas infrastructures.

Main responses to the threats to coastal tourism produced by other coexisting and conflicting activities are represented by the application of planning and management according to the approaches and principles of ICZM and MSP.

## WATER SUPPLY AND DEPURATION

Most of the impacts of tourism on water resources are linked to seasonality, with peak demand coinciding with the dry season (summer). Spatial concentration along the coast, at locations with scarce local water resources (islands) and often in fragile natural environments, conflicts among uses (drinking water, agriculture, industry, ecosystems), and a preference among tourists for facilities that consume excessive amounts of water are all factors exerting pressure on water availability.



**Availability of water resources and high tourist pressure.**

The orientations and objectives of national water policies in the Mediterranean region reflect more the differences of state and perspective between North and South than common problems. In the North, where water demand is stable or decreasing (and uncompetitive), water policies are mostly in line with EU directives which aim to preserve the quality of water and the ecosystems.

In the southern countries, as well as in Turkey, where water demand is still increasing and the resources are most threatened by climate change, the supply-side policy, mainly for development purposes, is still predominant. Overexploitation of groundwater is still unequally mastered. One of the main objectives of water policies is to prevent the consequences of drought and the risk of water shortage, as well as the current and future “water crisis” caused by climate change.

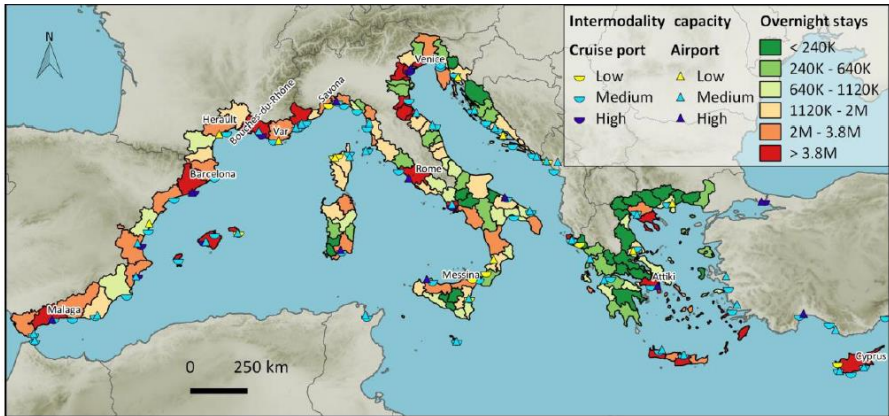
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*Every model indicates that the Mediterranean region will be a “hot spot” for global climate change. This will place pressure on water and increase the likelihood of us reaching crisis point (IPCC, 2013).*

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## TRANSPORT AND ACCESSIBILITY

Transport can be considered as a key factor in the success of sustainable tourism development. Accessibility of a tourist destination in order to attract tourists largely depends on the availability and efficiency of transports needed to travel to that destination. On the other hand, poor accessibility to destinations can discourage visitors from attempting to reach these places altogether.



***Intermodality capacity for cruise ports and airports is higher in Western Mediterranean than in Eastern Mediterranean, consistently with tourism fluxes.***

## INTERACTION AMONG THREATS AND ENABLING FACTORS

All T&EF are expected to increase in the near future, although at different speed and intensity, with the exception of “pollution and other anthropogenic pressures affecting ecosystems” which should stay constant, owing to the good environmental policies and practices. In general, the intensity of the interactions between T&EF is increasing, with the three main drivers being: i) the morphological instability of coastal areas, also due to climate changes; ii) the increase of tourist fluxes; iii) the protection measures to put in place on the coasts and ecosystems in order to respond to threats and allow for sustainable tourism development. The expected increase of other uses of the coast and the sea within a general expansion of sea economy and their coexistence with tourism will be another major issue. This analysis, although simplified, clearly shows the importance of a multidisciplinary, integrated and long-term view and effort on policy and governance.

# PROPOSAL FOR IMPROVEMENTS

As pointed out in this synthesis, tourism is a promising activity in terms of economic prospects which, however, puts a lot of pressure on the natural, social and cultural environment of the destinations. The traditional type of mass tourism in the Mediterranean region, which is mostly related to the “sun and beach” model, cannot anymore be considered as an option for the entire Mediterranean Basin. Without a long-term vision aimed at sustainable development, the Mediterranean Sea will not be able to sustain our economy and our well-being. Even though they cannot be considered as “silver bullets”, the Protocol on Integrated Coastal Zone Management (ICZM Protocol) and Marine Spatial Planning (MSP) principles can be considered as major tools for the improvement of sustainability of tourism since they address all the crucial issues which the Mediterranean basin is facing. Considering tourism through their prism can also help adopt a holistic approach which is essential in order to balance the uses of the coastal zone, as well as to reduce the conflicts among them. Five main cross-cutting obstacles to sustainable tourism can be identified when adopting this holistic perspective.

- Obstacle 1: Countrys’ excessive orientation and over-dependence on tourism as an economic activity;
- Obstacle 2: Misbalance between destinations’ carrying capacities and demand volume;
- Obstacle 3: Seasonal concentration of demand;
- Obstacle 4: Over-use and pollution of (natural and cultural) resources by tourism industry;
- Obstacle 5: Illegal activities by tourism industry.

The ICZM Protocol, as a legally binding instrument, complemented by the MSP principles on the marine part of the coastal zone, provides a legal basis for getting over these obstacles, and may act as a key enabling factor for co-evolution of the tourist areas of the Mediterranean region. Its implementation through the national laws, as well as through local practices, should enable the coastal destinations to keep or turn their coastal zones into healthy, attractive, economically balanced and diverse ones, which is the basis for developing sustainable tourism. Besides, it enables dealing with the emerging coastal environmental challenges, such as the climate change. Among its most relevant contents for sustainable tourism, it is worth mentioning the need to develop national ICZM strategies, which can then be considered as a framework for planning sectoral coastal activities, including tourism, in a coherent way. Coordination among sectors and levels of government is also of utmost importance, for it helps avoid strategic documents, investments and activities that are incompatible and mutually inhibiting or overlapping.



## WHO WE ARE

CO-EVOLVE is a three-year project that aims at analyzing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, allowing for sustainable development of tourism activities based on the principles of Integrated Coastal Zone Management (ICZM)/Maritime Spatial Planning (MSP).

It couples a presently unavailable analysis at MED scale of threats and enabling factors for sustainable tourism with local studies of seven representative Pilot Areas, to demonstrate through pilot actions the feasibility and effectiveness of an ICZM/MSP-based planning process.

Finally, CO-EVOLVE contributes to the Strategic Theme 2 (Joint Action 2.1) of the Bologna Charter Joint Action Plan: <http://www.bolognacharter.eu/>.

## CONTACT US



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