

# Analysis of Beaches and Beach Managing in Context of New Maritime Domain and Sea Ports Act

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Beaches are a resource that often captures public interest, especially in local communities, due to the various roles they play in people's lives. Interest in beaches is continuous and diverse, while the pressure on them is increasing. Economic interest, as a result of tourist demand, is evident both globally and in Croatia. Simultaneously, there is a growing interest in beaches among the experts and scientists, considering various issues, including the economic impacts on beaches and their effects on the environment. Although various laws and directives regulate the management and protection of beaches as a resource, the approaches vary. In 2023, the Croatian Parliament amended a new Maritime Domain and Sea Ports Act (MDSPA), which introduces different approaches to beaches beyond their classification.

The subject of this research is beaches in general, and open questions in the new legal framework. The purpose of the research is to analyse the institutional framework and how beaches are managed in Croatia. The authors analyse the new legal solutions in MDSPA, explaining the jurisdiction, form of using and managing, protection, and the economic use of beaches. The aim of the research is to analyse the theoretical and legal aspects of beaches, identify open questions, propose methodology and measures to improve the beach managing model in Croatia.

## KEY WORDS:


- ~ Beaches,
- ~ Managing model,
- ~ Analysis,
- ~ Maritime Domain and Sea Ports Act,
- ~ Croatia.

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## 1. INTRODUCTION

Beaches are undeniably important recreational and social resources, and a prerequisite for the development of coastal tourism. They are part of the integral tourist product of a destination, making it attractive and serving as a motivation for a certain number of tourists. At the same time, beaches are more than just spaces for tourists to relax and recreate. The local needs regarding coastal tourism are much broader, encompassing free activities and the use of beaches outside the tourist season. In order to meet the needs of various stakeholders, public administration faces many open questions when creating beach managing plans, which are an integral part of maritime domain plans.

Worldwide, beaches, including those on rivers and lakes, represent a significant source of income and bring benefits to local communities. Due to changes in lifestyle and the impact of climate change, interest in the potential for greater recreational and economical use of beaches has grown significantly in recent years.

Croatia, with a coastline of 5,835.3 km, including islands and the mainland, surpasses the other Adriatic countries (74% of the total), boasting a diverse coastline (coefficient of 11.10; the 2<sup>nd</sup> in the world) and numerous islands (1,246), ranking second in the Mediterranean behind Greece (Duplančić Leder *et al.*, 2004). The total number of beaches in Croatia is still unknown although it has been the subject of numerous studies and projects. As Bogovac *et al.* (2023) state, an approximate number of 1,904 beaches were addressed in the previous research. That was an estimation of the number of beaches, and this number was obtained by PL/14 forms in the action conducted by counties in their regional managing programmes during 2015. The total number of beaches in Croatia depends on how the beach is defined, and it can vary accordingly. Beaches in Croatia are regulated by the law defining the concept and classification of beaches as well as their managing, protection, and various forms of economical use. The authors in this multidisciplinary research provide an overview of novelties according to the new MDSPA and analyse the effects of beach managing in Croatia. The most important determinants of beaches, i.e. the concept and definition, classification, replenishment, managing, economic and other benefits are explained. Special emphasis is placed on the parts of the MDSPA where the concept of public beaches is introduced, the impossibility of fencing them off, and the exclusion of the concept of hotel beaches. The beaches for specific purposes that serve some specific groups of users (with specific needs) are defined. However, at the same time, naturist camps are included, which is contradictory considering the fact that the camps use the beaches for commercial purposes. A concession is introduced on request with a limited period of 5 years, as well as a license to perform activities and use maritime property of minor importance. Permits are awarded according to the results of a public tender. The authors highlight new legal provisions in the context of granting concessions and assessing the value of beaches. Measures for the qualitative assessment of beaches are presented after the discussion.

## 2. REVIEW OF PREVIOUS RESEARCH

The first resorts opened in the 18th century and expanded in the 1840s, which has led to increased research activities. An initial research was conducted in England, where beach culture was prevalent. Other well-known European destinations, such as the French and Spanish Mediterranean Coast, gradually attracted researchers. Many authors initially focused on geographical and geomorphological landscape changes (Cendrero and Fischer, 1997; Cicin Sain *et al.*, 1998; Defeo *et al.*, 2009; Williams and Micallef, 2009), later expanding their interest to the socio-economic aspects of beaches (Runko Luttenberger 2014; Kovačić *et al.*, 2013; Marković *et al.*, 2010; 2010 Jovičić *et al.*, 2008). Over time, authors have included tourism-related questions, considering economic impacts and sustainability issues. Some researchers (Liu *et al.*, 2023; Stronge, 2019; Anfuso *et al.*, 2018; Blakemore, 2022; Houston, 2013; James, 2000) highlight the economic values of beaches, tourist preferences, and management issues. Emphasis is on interdisciplinary research and various scientific fields. Beaches are discussed as a resource primarily for recreation and health in many papers

(Bogovac et al., 2023; Kovačić et al., 2020; Rodella, 2020; Pascoe, 2019; Baldwin, 2007) emphasising the importance of valuation and protection of beaches.

However, beach management remains an open question, depending on the legal solutions of the countries and stakeholders involved. Some authors (Botero et al., 2009; Jovičić et al., 2008) emphasise carrying capacity as one of the most general tools for beach management, highlighting beach overcrowding (number of visitors) as the most important criterion (CRA/PPA, 2003). Other authors have conducted case studies (Da Silva et al., 2007, Zacarias et al., 2011, Kovačić et al., 2018, 2020). In addition, Botero et al. (2017) and Williams et al. (2009) discuss beaches on a theoretical and practical level, analysing methods, tools, and techniques for beach valuation and management. The results indicate that beaches are the topic of interest for various and often conflicting stakeholders, putting the question of beach management quality in focus. The authors (Cabiocch et al., 2022; Cervantes et al., 2018; Micallef et al., 2002; Williams et al., 2009) emphasise the fact that good management involves evaluation or beach valuation.

In theory, beaches are discussed from different aspects. Beaches do not have a dominant economic character but are viewed as a resource with multiple functions that require protection, especially from uncontrolled usurpation and devastation (James, 2000, Rodella et al., 2020). In this context, beaches are seen as a natural resource, yet their value has not been fully recognized to date. Over the years, beaches have been destroyed in various ways: by land reclamation, concretisation, the construction of houses, apartment complexes, golf courses, military facilities, etc.

Furthermore, beaches are considered as social resource, e.g. in James (2000); Pascoe (2019). The strong process of littoralisation during the 20th century resulted in the increased construction of residential buildings along the coast. The coast has always attracted people for various activities as it is especially evident in the construction of facilities and camps for tourism purposes. In the early 1940s, tourism became mass-oriented, leading to the introduction of the concept of integrated coastal zone management. In the United States, California embraced this concept as early as 1972, considering beaches a high-value socio-economic and national resource requiring higher levels of protection. Overall, beaches worldwide attract more attention from experts and scientists.

Beaches are an important economic and recreational resource focusing on global tourism and are generally considered a key factor in the tourism market. Nevertheless, beaches are more than that. According to many authors, they are a significant recreational resource contributing to people's health and well-being. Given the climate change and its impacts, beaches are exposed to natural influences, but the capital pressures.

### **3. MATERIALS AND METHODS**

In this section a view of the beach definition is given, and the determinants of the new law, which are important for beach management, are explained.

#### **3.1. Beaches in definition**

The definitions of beaches differ from country to country, but for the purposes of this research the following are highlighted. According to Anić (1998), a beach is an area by the sea, river or lake, arranged for swimming. Beaches along rivers and lakes differ from sea and ocean beaches primarily in ownership regime, while the beaches by the sea and oceans are most often determined as maritime domain. According to Kundih (2005), beaches are a common good, and the maritime domain is a domain outside commercial use (*res extra commercium*). Beaches are also defined as a complex system of consolidation of land and sea or ocean, closely linked to specific social and economic circumstances (Simm et al., 1995). Therefore, it is a highly valuable

resource that is threatened by various potentially harmful influences as a result of many natural and other, especially human, actions.

The institutional framework for defining and classifying beaches in Croatia introduces innovations that provide a new approach to understanding beaches and their evaluation. According to the new law, Article 3 defines the concept of sea beaches and provides their classification. Beaches on rivers and lakes are not subject to this law. According to the MDSPA, a sea beach is a natural or built and arranged piece of land and the corresponding maritime area of the maritime domain used for a stay, recreation, swimming, and the related activities. Sea beaches are classified as follows:

- Public sea beaches, divided into natural and arranged sea beaches
- Special-purpose Sea beaches.

In the same article, the managing of the sea beach is entrusted to the local self-government units or public institutions for the protected areas in accordance with the Maritime Domain Management Plan or the Protected Areas Management Plan. The beach can also be managed by a concessionaire in accordance with the decision and concession agreement. The sea beach must be protected and maintained, ensuring the satisfaction of the public's interest. It is stipulated that sea beaches must be accessible to everyone on the same terms and must not be excluded from general use, which, in practice, poses a significant challenge. The sea beach must not be fenced or otherwise restricted, and entrance fees must not be charged. This applies to new concession agreements, but the question arises regarding the existing concession agreements, where some concessionaires have agreements allowing entrance fees or the possibility of fencing the beach with or without charges.

### **3.2. Analysis of Beaches in the Context of the New Maritime Domain and Sea Ports Act**

As a result of many bad practices, Article 77 of the MDSPA introduces a ban on nourishing beaches with soil, waste, excavation, etc. Beaches can only be nourished with natural gravel and/or sand, and beach construction is possible after preparing an environmental impact assessment report and obtaining the necessary permits.

In accordance with Article 78, public marine beaches are divided into two types: natural and arranged. For a natural marine beach, it is specified as a beach located within or outside the settlement and is infrastructurally unequipped. A natural beach has completely preserved natural features, and the land part encompasses the area of natural material (stone, sand, gravel, their combinations, etc.).

The construction of buildings is not allowed on a natural beach; only interventions in space are allowed according to special regulations governing construction and are not considered construction. Access must not be fenced off or excluded from general use, and entrance fees must not be charged. If a natural marine beach is outside the construction area, it cannot be subject to concession.

According to Article 79 of the MDSPA, an arranged marine beach is a sea beach located within or outside the settlement, accessible to everyone on equal terms, including persons with reduced mobility. It is a beach with arranged and modified natural features, infrastructure, and content-arranged land directly connected to the sea. The law requires the local self-government unit or concessionaire to mark and protect the beach from the sea and prominently display an information board in visible places. The information board must contain data on sea quality for swimming, on access with pets, and beach coverage, i.e. the area of the sea and land parts. Information about possible emergencies follows. The provisions regarding the impossibility of fencing and exclusion from public use also apply to this beach. Entrance fees must not be charged on the beach.

The new law introduces sea beaches for special purposes (Article 80) and defines them as beaches that meet the requirements of special user groups and their specific needs. Furthermore, the law stipulates that a marine beach for special purposes can be used based on a concession that can be granted to:

- A public institution in the health system whose founder is the Republic of Croatia or a unit of regional (regional) self-government and whose users are in that institution for treatment and/or rehabilitation
- A legal entity that is a concessionaire on a marine beach whose users are natural tourists.

As public institutions in the healthcare system are not commercial entities, it is not acceptable for special-purpose beaches to be given in concession without an economic purpose. Another novelty is the distribution of funds, where 40% of concession revenue belongs to regional self-government, 30% to the State, and 30% to local government. This legal solution is positively assessed in terms of encouraging regional administration to anticipate and determine the specificities, attraction elements of each location, and fiscal and other effects through the Maritime Domain Plans and Concession Feasibility Studies due to possible higher revenues.

The new law provides closer regulation of concession issues, introduces on-demand concessions, and replaces concession approvals with permits for the use of maritime domain. Article 49 defines the concession for the economical use of a beach and the building of structures on the beach. Article 3 introduces the concept of a concession for maritime domain as the right to economically use maritime domain acquired through a contract.

Furthermore, Article 55 instructs the concession provider to set a deadline for the concession based on the financial data and indicators from the Concession Feasibility Study. The same Article determines that the concession is granted for a period that does not restrict market competition more than necessary to ensure the amortisation of the concessionaire's investment and a reasonable return on invested capital, considering the costs and risks assumed by the concessionaire during the concession period. This provision brings a more qualitative approach, as some beaches, according to the previous law, were given in concession for 20 years. However, the decision-maker's judgment on the concession period remains an open question. At the same time, the law establishes that a concession for natural beaches can be granted for a maximum period of up to 5 years.

The new law introduces on-demand concessions (Article 64) for conducting economic activities on a publicly organised beach. The beach must not be fenced or an entrance fee charged, which means that it cannot be excluded from the general use. A hotel, camp, or tourist resort with a minimum rating of four stars or higher can request a concession for economic activities. The condition is that the facilities are built outside the maritime domain, and the beach is infrastructurally connected to them. The investment in infrastructure is also considered. The maximum duration of an on-demand concession is five years. It is noteworthy that many campsites in Croatia, as well as resorts, have been using public beaches for years with minimal fees, usually through concession approvals (now obsolete) or, according to the new law, through permits. Since campsites are often fenced for security and other reasons, beach access is usually limited. It is recommended that when initiating the on-demand concession process, the concession fee be assessed based on the location and its attractiveness. The concession provider should prepare an impartial concession feasibility study and determine the value of the concession and its effects, both direct and indirect, especially in the context of the local community.

The new concept introduces the term licence for maritime domain instead of concession approvals, representing an administrative act granting the holder a time-limited right to conduct activities on the maritime domain. The licence does not limit or exclude the general use of the maritime domain, and only a simple structure that is not considered a building according to construction regulations can be used for the activities. According to Article 71, a permit can only be granted for the activities and the use of maritime domains of minor significance. An important innovation is that, based on the Plan for the Management of Maritime Domain (Article 39), the executive body of the local self-government unit is obliged to publish a public tender for the allocation

of permits on the maritime domain in the official gazette, on the notice board, on the official website of the local self- government unit, and at least in one daily newspaper by February 1 of the current year. Permits for maritime domain are granted for a period of two to five years. This period is slightly longer in the Mediterranean countries, up to 7 years, and the issuance of permits is within the jurisdiction of the regional or port authorities. Another novelty is the distribution of funds, where 30% of permit revenue belongs to the regional self-government and 70% to local government, which is considered positive in terms of possibly reducing the local community's interest in issuing permits on the maritime domain due to lower revenues.

In Article 203, monetary fines for legal entities acting as concessionaires are prescribed, ranging from €6,000.00 to €33,000.00 for maritime offences, as follows:

- if they nourish the beach with more than 0.35 cubic metres per linear metre of beach shoreline without a prior approval from the administrative body in the unit of local (regional) self-government responsible for environmental and nature protection matters (Article 77, paragraph 3)
- if they nourish the beach in a way that alters the average annual position of the coastline, the appearance of the beach, and its characteristics (Article 77, paragraph 4)
- if they fence or otherwise restrict access to a public beach (Article 76, paragraph 7)
- if they charge an entrance fee to a public beach (Article 76, paragraph 8).

It is essential to emphasise that, despite being a step forward, the penal or misdemeanour provisions face challenges to better implement procedures of penalties. The law positively acknowledges existing structures built on embankments exempt from the maritime domain, highlighting the visible encroachment on existing beach resources. This has led to numerous controversies, institutional delays, and a reluctance to impose appropriate penalties.

Furthermore, according to the new law, in all proceedings to retain buildings in the space, care should be taken to avoid a negative impact on the objective legal norm, ensuring that the legalised structures in the maritime domain, which should be publicly accessible and equally available to all in nature, do not serve private interests. The new law also lays down that the buildings constructed based on building permits allowing construction for the use of the maritime domain cannot be exempt from the maritime domain (such as bathing areas, beach facilities, boat storage, fishing equipment, etc.). This raises questions about the legitimacy of structures for which building permits have been issued or will be issued, especially considering the relatively long period of tolerating illegal construction and encroachment on the maritime domain and beach resources. The issue of construction and legalisation of facilities on the maritime domain is very complex and requires a deeper reflection in order to offer appropriate solutions.

The new law envisages the establishment of the Council for Maritime Domain and Sea Ports as an interdepartmental expert advisory body for the integral management of the maritime domain, but the priority is to resolve the main question, i.e. how to properly valorise the maritime domain? One of the few studies that explicitly proposes solutions is an evaluation model of Croatia's maritime domain, using methodologies and tools such as GIS tools and multicriteria analysis (Mladineo *et al*, 1997). This study is a quality starting point for creating evaluation model of the Croatian sea beaches which includes decision making methods and processes.

## 4. DISCUSSION

The managing of beaches in Croatia, as in the previous Act, is entrusted to regional and local self-government, which more or less successfully protects beaches in line with the nature of use and the growing demands of users. The function of managing beaches and making decisions about their use is, therefore, highly complex. The majority of the decision-making burden falls on the public administration that should find ways to improve communication and coordination among all the stakeholders, especially the local population. The issue of intellectual and professional capacity for solving complex problems persists today. Different questions and a lack of understanding of the need to assess beaches and the sustainable use of beach resources (such as determining ecological, social, and physical capacity limits, among other things) continue to exist. The question of protecting the entire coastal area remains largely declarative despite the regulations.

Concessionaires often, contrary to the concession agreement for the beach and with minimal compensation, do not invest within the specified deadlines and amounts defined by the economic feasibility study, burdening beach areas with equipment and closing beaches without permission. This raises questions about the beach as a common public good that can suddenly be closed, fenced off, and inaccessible. It should

be noted that the closure of beaches with the possibility of entrance fees for the needs of five-star hotels, resorts, nudist beaches, and beach campsites is not contrary to the practice of many countries. The Mediterranean countries, as well as other countries in Croatia's environment, seek to protect the coastal zone and consequently the beaches, based on laws. Regarding the beaches, the prevailing opinion is that they must be accessible to everyone, i.e. open to access. However, there are exceptions, mainly for resorts and nudist beaches, and more recently for public urban beaches. Blackmore (2020) emphasises that certain forms of tourism, such as naturism, require a different approach. It is essential to act in accordance with the law and the management plan by zoning the area, which is particularly important for protected areas.

Research results regarding the entrance fees for beaches (Birdir *et al.* 2013; Rodella *et al.* (2019, 2020) argue that tourists are willing to pay a tourist tax or entrance fee to the beach when they know that the funds are used for beach protection and conservation purposes.

Despite the expectations that, following regional plans for the regulation and managing of beaches in Croatia, the public administration at the regional and local levels would determine the capacity of acceptance on a greater number of beaches, this has not been implemented. Due to the growing burden, there is a need to change the approach to managing beaches, which have always been a place for relaxation and swimming. The problem of commercial and hospitality facilities, as well as the rental of numerous water-sports equipment at one location, is especially emphasised. Cars and campers parked directly on beach areas, and sometimes on beaches, also pose a problem. All of this reduces the free beach area and access to the sea, diminishing the capacity for acceptance, recreational value, and the attractiveness of the beach itself. At the same time, questions arise about increased amounts of municipal waste and other issues. It is important to note that there are desirable beaches with various amenities, but cleaning, safety, and other issues still remain a problem.

Beach managing is complex in the light of the fact that it is a resource that has multiple roles, from recreational to economic. It is very important that the managing plans have a starting point at the regional level and that the regional administration determines the optimal use of the beach area, establishes restrictions and implements misdemeanour measures. This is necessary in order to avoid overcrowding of the beaches in terms of the offer of services, as well as illegal replenishment, etc. It is important to continuously educate the employees about the value of the beach resource and to familiarise them with the experiences of other countries. Therefore, this study is intended not only for the scientists, but also for the professionals, especially for the public administration in order to improve beach managing.

As a result, beach managing must be part of strategic coastal development planning, which is complex and requires a higher level of awareness of the value of the coast and beach resources.

## **5. MEASURES TO IMPROVE BEACH MANAGING MODEL IN CROATIA**

The existing administrative division of Croatia into counties (21) delegates the responsibility for beach managing to smaller geographic administrative areas. Inter-county practices of beach management in Croatia may objectively differ very little. Fundamentally, they must meet the criteria of integrated coastal zone managing and ensure consistent implementation. A particular issue is the granting of concessions and licences at the local level, where there is often a lack of political will for the valorisation and protection of beaches from significant pressures. Camps, which frequently use beach resources, often enclose them without proper documentation/permits and utilise beaches for minimal fees. As the determination of maritime domain boundaries is a crucial aspect of the concession-granting process, these procedures need to be expedited to address the issue of concessions for campsite beaches.

Local residents, as indicated by surveys and public statements, express their dissatisfaction, usually addressing local administration and tourist companies. This confirms the insufficient valorisation of beaches and



beach environments, as well as the absence of a systematic approach. At the national level, a database has been established covering the typology of beaches, but it only includes beaches where water sampling is conducted. Regional administrations approach this problem differently, often due to administrative and professional capacity limitations.

According to the new Law, the concession system in Croatia has a developmental and protective role for the local community, the region, and the country as a whole. However, such a system must be transparent, and the concession-granting process itself must be efficient. There is a continuous lack of a uniform approach based on the valorisation of beaches as complex resources.

The duration of concessions for beaches is also a critical issue. Foreign practice recognises a period of 7–10 years without investments, or a longer period for significant investments.

The proposed beach managing model in Croatia relies on a holistic approach, including the definition of a beach management strategy at the regional level. Strategic goals include economic impacts and benefits for the local population and tourists. Regional spatial plans serve as the basis for the model, with beach valorisation as its core element. The beach managing model assumes the establishment of a special agency for managing maritime domains, including beaches, at the regional level. This approach allows for the proper care of protecting beach resources (monitoring) and their economic utilisation with appropriate intellectual capacity.

To implement the model effectively, a capable management is crucial, responsible for implementing the fundamental guidelines of the model. The role of the management is to understand and valorise beaches as resources and plan for a balanced management. To achieve this, communication with local residents, tourists, tourism operators, and other stakeholders must be improved.

Simultaneously, economic impacts resulting from concessions or licences must be very carefully planned, maximising other opportunities and benefits. However, these effects should not become an end in themselves. While economic impacts are important for the economy, understanding the essence of rational beach resource use is crucial. Beach managing also involves managing the supply and demand for beach amenities. The management's special role is evident in maintaining national quality and water quality standards. The proposed model is open-ended and requires adaptation to changes in the environment that interact with it.

The recommended beach managing model includes a methodological approach based on a geographic information system (GIS), which is a very useful tool in zoning the area. This tool is recognized as very useful in decision-making procedures based on a larger set of data. Furthermore, the method of multi-criteria analysis (MCA), which includes establishing criteria, evaluating them and providing the possibility of various solutions, has proven to be a very useful method, especially in the decision-making processes when it is necessary to choose among several possible scenarios (Kovačić *et al.*, 2020, Mladineo *et al.* 1997).

## **6. CONCLUSION**

This research focuses on beaches by proposing a qualitative model based on a comprehensive approach, considering the value of resources in socio-cultural and economic terms, emphasising the competence of the regional self-government as the manager of beaches, and highlighting the benefits for the local communities.

At the local level, the management is based on maritime-domain plans. The plans are adopted by the cities and municipalities, either by issuing permits or managing through municipal companies. In recent years, there has been a tendency and readiness for the local administration to assume jurisdiction over beach management through the concession institute in its administrative area, but the professional capacities are missing. Although this is an additional motivation for the local administration to directly manage the development

of beach resources, often due to a lack of intellectual and other capacities, it results in many negative effects. While experiences vary, beach management is most often entrusted to regions to ensure a holistic approach by the institutions that consider beaches in the context of their importance in the socio-economic and ecological terms. Legal regulations, as in Croatia, emphasise the importance of beach protection as a natural resource, with penalties for offenders. Despite various documents and the enactment of the new Maritime Domain and Sea Ports Act in 2023, Croatia faces a serious problem in defining and implementing the development goals, often left to the discretion of the local administration. Therefore, intellectual capacities should be developed, and the coordination among institutions (national, regional, and local) needs a lot of improvements. Proactivity and a future-oriented approach to beach resources imply strict enforcement of misdemeanour provisions in practice. Citizen participation in the decision-making on the use of public goods is crucial, as is the partnership among the local authorities, civil society organisations, and the private sector. The experiences of individual countries and the methodological approach to evaluation of beaches are additional tools for effective and sustainable beach managing.

It is very important to continue research in order to create a long-term evaluation model that will contribute to the quality of decision-making and beach managing at all levels of governance.

It is logical to conclude that beaches are the topic of interest of different stakeholders, which is the reason to continue research in order to consider different approaches to beach managing. The conducted research has some limitations and should, therefore, be continued in a way that compares the legal regulations and practices of the Mediterranean countries.

## **CONFLICT OF INTEREST**

The authors declared no potential conflicts of interest with respect to the research, authorship and publication of this article.

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