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# Stakeholder involvement and preferences in landscape protection decision-making: a systematic literature review

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Stakeholder involvement and preferences are pivotal in the decision-making process for landscape protection within a specific context. However, many decisions regarding landscape protection options still rely on management choices with little or no consideration of all stakeholders. Previous scholars emphasized the importance of establishing an integrated framework to gain an adequate understanding of the process of stakeholders' decision-making in landscape protection. Therefore, a systematic literature review was conducted on the topic of stakeholders' involvement and preferences in landscape protection decision-making. This review included research articles published from 2013 to 2023 using two databases and registers, namely, Science Direct and Google Scholar. A total of 110 research articles were identified and qualified for review based on the screening requirements, with an additional 15 documents for theories and backgrounds to provide a better understanding and outcomes for the study. The results of this study were organized based on concepts from the resulting research articles and were integrated to propose a conceptual framework for Stakeholders' involvement and preferences in landscape protection. Additionally, this study's findings indicate the significance of incorporating diverse stakeholders and their preferences in landscape protection processes to ensure awareness of inclusivity in decision-making and secure long-term support.

## KEYWORDS

stakeholder involvement, stakeholder preference, stakeholder theory, stakeholder approach, stakeholder decision-making, stakeholder communication, landscape protection

## 1 Introduction

Natural landscapes are considered national treasures globally due to their significance in various aspects, including the economy, environment, health, tourism, urban planning, and culture (Shafaghat et al., 2017). They serve as instrumental forces in shaping biocultural diversity and preserving heritage values inherent in the human-nature relationship (Baránková and Špulerová, 2023). Furthermore, natural landscapes are considered an important attraction element in the realm of tourism, fostering its overall growth in some areas (Khizar et al., 2023).

Additionally, the social integration of landscapes influences people's connection with nature, contributing positively to their health and well-being (Peng, 2020). The nexus between landscapes and human health has been explored through environmental psychology, emphasizing the advantages of nature engagement in restoring attention, reducing stress, and eliciting positive emotions (Nishi and Hashimoto, 2022). Landscapes also elevate the quality of life by offering outdoor activities and recreational opportunities, especially for those residing in urban and semi-urban areas (Chang, 2020). Additionally, they help maintain the visual aesthetic attractiveness of the environment and enhance the quality of life for local communities, making cities more livable (Mundher et al., 2022a). Moreover, landscapes are important for biodiversity, ecosystem functioning, and ecological processes, supporting the sustainable economic development of ecological resources and contributing to the establishment of an ecological civilization (Lu et al., 2023). The concept of landscapes extends beyond their environmental and geographical connotations, encompassing multiple aspects that contribute to the understanding of the relationship between humanity and the natural world (Roque et al., 2021). As a result, it can be said that the importance of landscapes in the context of human-nature relations is continuous and multifaceted, leading to an increasing global focus on the protection and conservation of landscapes (Conrad et al., 2019).

Undoubtedly, all countries strive to preserve their natural landscapes. Therefore, landscape protection has been a concern for numerous governing bodies and the focus of various research initiatives worldwide over the past two decades. However, attempts to protect landscapes often face threats and difficulties due to increased human activities (Choe and Schuett, 2020). The absence of stakeholders' involvement in landscape protection decision-making has led to several adverse outcomes. For instance, it has resulted in a lack of integration of the planning efforts, where decisions were made without considering the perspectives and needs of all stakeholders (Enengel et al., 2014). Also, this lack of distribution of decision-making opportunities can be problematic, as certain actors may have no power and influence while others encompass all the responsibilities (Kusters et al., 2020). Additionally, the implementation and enforcement of regulations may be weak, with a lack of accountability and oversight in the absence of stakeholders' involvement (Jewell et al., 2023). Furthermore, the absence of stakeholders' involvement can hinder the development of a shared understanding of landscape governance, exacerbating differences in interests and limiting possibilities for collaborative action (Dale et al., 2019). Therefore, stakeholders play a crucial role in landscape protection by facilitating decision-making processes, developing trust, and promoting collaborative action (Chazdon et al., 2021).

However, despite these challenges, most decisions regarding landscape protection still rely on management choices with little or no consideration of involving other stakeholders and low levels of cooperation between policymakers and stakeholders (Nita et al., 2022). Stakeholders' involvement, which can be manifested as the participation of stakeholders in the decision-making process, is often lacking in the field of landscape governance (Choe and Schuett, 2020). The reasons for this may be a result of a lack of complete understanding of who the stakeholders are as well as a lack of understanding of their importance in landscape protection, particularly since the concept of inclusive governance is more common in the field of business

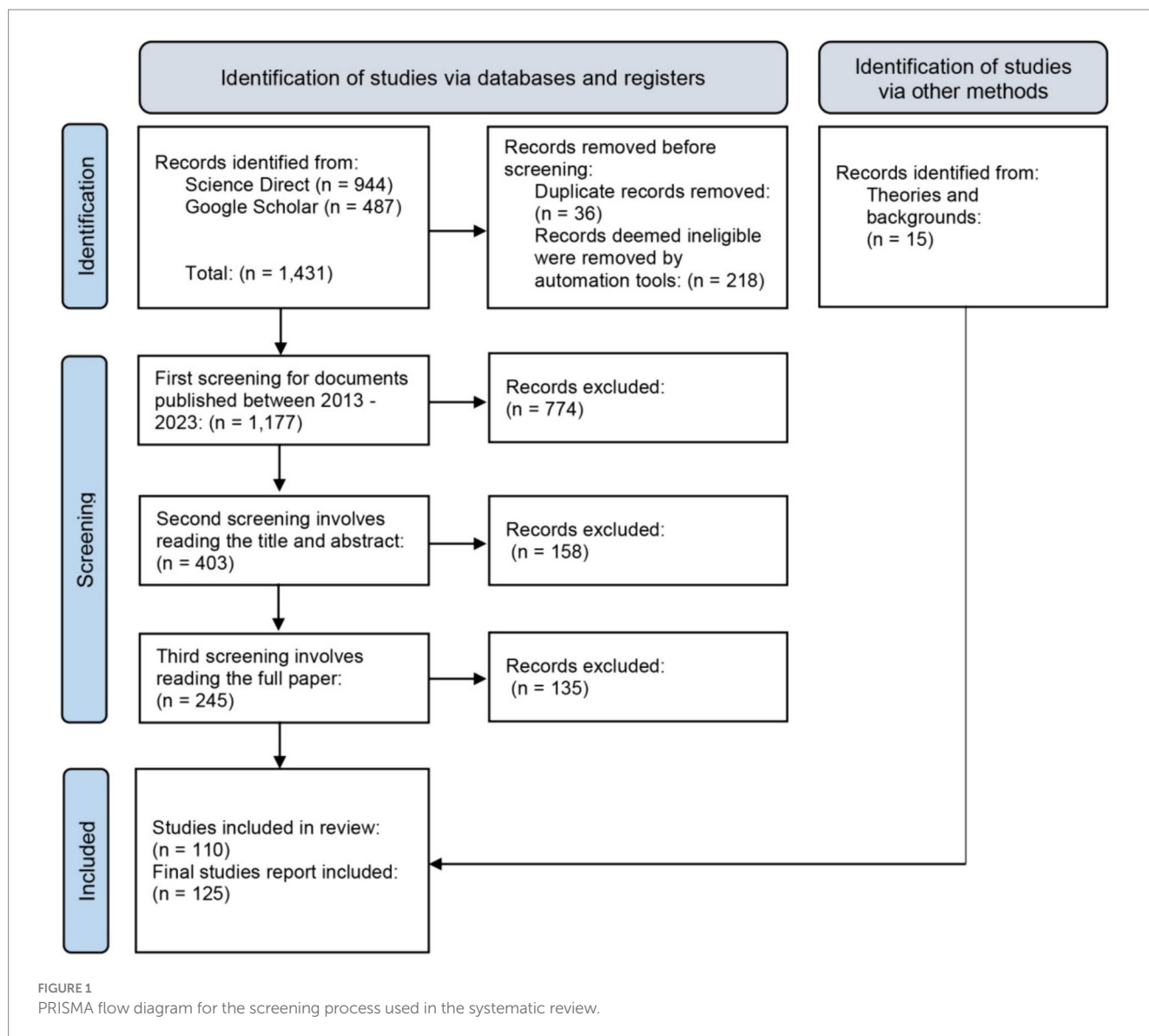
(Freeman and McVea, 2001). Therefore, this study conducted a systematic literature review on the topic of stakeholders' involvement and preferences in landscape protection decision-making with the aim of providing a holistic understanding of stakeholders' involvement in the decision-making processes of landscape protection. The developed understanding will be presented in the form of a conceptual framework. In this regard, defining the various stakeholders and understanding of their involvement are the primary purposes and motivations for studying the decision-making processes in landscape protection. It is essential to develop an understanding of stakeholder theory and historical context, stakeholder approaches, and all the methods and factors used to collect stakeholders' preferences in order to develop an integrated conceptual framework and gain an adequate understanding of the stakeholder decision-making's process stages in landscape protection.

## 2 Materials and methods

The methodology for this systematic review involved a detailed process of keyword selection, literature screening, and data collection. Initially, the keyword selection focused on three main themes: stakeholder, landscape, and decision-making. Keywords such as "stakeholder involvement" and "stakeholder preference" were included to reflect the core of the study. These keywords underscore the significance of public stakeholder involvement in environmental governance, as highlighted by Reed et al. (2020) and the critical role of preferences in ensuring community needs and desires are considered, as noted by Gao et al. (2023). In the context of landscape studies, stakeholder preferences are pivotal in influencing decision-making processes to protect natural landscapes (Li et al., 2024). Thus, "landscape protection" was added as a key term, aiming to understand stakeholders' attitudes and efficacy in directing landscape decision-making. This inclusion allows for a broad spectrum of viewpoints, enabling decision-makers to identify mutually advantageous resolutions through stakeholder engagement (Du et al., 2019). The final set of keywords selected for the systematic review on stakeholders' involvement and preferences in landscape protection decision-making were summarized as follows: "Stakeholder Involvement" OR "Stakeholder Preference" AND "Landscape Protection" AND "Decision-Making."

The screening of relevant literature adhered to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Using the keywords selected, an initial literature search was conducted across two databases, Science Direct and Google Scholar, resulting in 1431 papers. Duplicate entries and ineligible records identified by automation tools were removed, reducing the number to 1,177 papers. In the initial screening phase, only papers published between 2013 and 2023 were considered, excluding 774 papers. A subsequent review of titles and abstracts of 403 papers further narrowed the selection to 245 papers. In the third screening phase, a thorough full-text examination determined the relevance of these articles, resulting in the selection of 110 papers that met the criteria. An additional 15 documents were included to provide a comprehensive understanding of the theoretical background, culminating in a final dataset of 125 documents (see Figure 1).

Data collection involved a comprehensive full-text reading of each document that met the inclusion criteria. The data extracted from the



selected papers were summarized and organized into a spreadsheet using Microsoft Office Excel software. The collected data encompassed authors' names, titles, years, journals, document types, methodology types, and research scopes from each of the 125 documents. These details are presented in [Supplementary Tables SA1,A2](#).

The following sections represent the major themes in the results namely: defining stakeholders, stakeholder theory, stakeholder approach, stakeholder involvement in landscape protection, stakeholder preferences in landscape protection, and stakeholder decision-making process stages and framework.

### 3 Results

#### 3.1 Defining stakeholders

In the 1980s, the term stakeholder emerged marking a turning point with the publication of "Strategic Management: A Stakeholder Approach" by [Freeman \(1984\)](#). The impetus behind the stakeholder

term was an effort to establish a framework capable of effectively addressing the concerns of managers navigating unprecedented levels of environmental turbulence and change. The conventional strategic frameworks failed to assist managers in forging new strategic directions or directing them on how to seize new opportunities in the face of an avalanche of change. Freeman states, "Our extant theories do not align with the magnitude and types of changes occurring in the 1980s business landscape, a new conceptual framework is necessary" ([Freeman and McVea, 2001](#)). Therefore, the stakeholder concept arose in response to this difficulty.

Freeman's book is often considered the foundation of the general stakeholder concept, even though Freeman himself acknowledged earlier authors in related fields, such as [Ansoff \(1965\)](#), [Rhenman \(1973\)](#), and [Ackoff \(1974\)](#). Freeman emphasizes the necessity for an all-encompassing stakeholder definition in management and proposes: "Stakeholders are those groups who can affect or are affected by the achievement of the organization's purpose" ([Freeman, 1984](#)). Initially, stakeholders were considered synonymous with shareholders of a company; however, the concept has evolved to include a wider

range of actors, such as investors, suppliers, customers, users, authorities, and other key individuals or groups. Since Freeman's pioneering work in 1984, numerous authors have introduced their own definitions of stakeholders, leading to the emergence of countless variations in the literature (Wondirad et al., 2020). Divergent definitions arise partly due to researchers employing different criteria for inclusivity when determining who qualifies as a stakeholder and who warrants attention and focus from a managerial standpoint (Eskerod et al., 2016). Nevertheless, some more comprehensive definitions do exist (Table 1).

According to Ayuso et al. (2014), stakeholders are described as individuals and groups who, regardless of their intent or circumstance, contribute to a project's capacity for creation and participate in its undertakings. As a result, they represent potential beneficiaries or individuals assuming associated risks. In other words, stakeholders are individuals, groups, or organizations with a vested interest in a decision-making process that could directly or indirectly impact them, and they could potentially exert either positive or negative influence on the outcomes (Akhmouch and Clavreul, 2016). Eskerod et al. (2016) similarly define stakeholders as individuals and groups affected by the project or positioned to influence it, irrespective of possessing an official role within the project. Overall, stakeholders play a crucial role in the success or failure of projects and organizations, showing that effective stakeholder management are essential for achieving common goals.

### 3.2 Stakeholder theory

Stakeholder theory constitutes a framework within the realms of business ethics and organizational management, which takes into account the interests and benefits of various stakeholders (Mahajan et al., 2023). Stakeholder theory originated in the 1960s when the Stanford Research Institute introduced the concept of stakeholders, emphasizing that organizations need support from stakeholders, not just shareholders, to survive and thrive. This concept has resulted in a stark dichotomy between pursuing shareholder dividends and satisfying stakeholder requirements. However, research on stakeholder theory did not acquire prominence until the early 1980; since then, the body of knowledge regarding stakeholder theory has more than doubled (Schaltegger et al., 2017).

The theoretical aspect of stakeholder theory emphasizes the active participation of stakeholders to achieve their long-term success (Wondirad et al., 2020). Consequently, engaging in contractual agreements with key stakeholders during the process of policy formulation and implementation became essential. However, relying solely on contractual relationships is inadequate for safeguarding stakeholders (Freeman and McVea, 2001). Only by allowing stakeholders to participate in institutional governance actively can they effectively fulfill their supervisory role, fostering long-term success for all stakeholders (Kusters et al., 2018). Stakeholder theory can effectively address this issue by emphasizing participation in institutional governance, particularly for key stakeholders, who often directly contribute to value creation (De Meo et al., 2018; Xiao, 2023). Additionally, stakeholder theory proposes “The stakeholder enabling principle” and “The principle of stakeholder responsibility” as methods to enhance the practicality of stakeholder participation in governance (Freeman and McVea, 2001). Within this framework, it becomes more challenging for management to act solely in their personal interest, encouraging them to work towards the overall benefit of the institution and promoting a long-term win-win situation for all parties involved.

According to this theory, organizations aim to generate multiple benefits for diverse stakeholders (Freeman and McVea, 2001). Consequently, stakeholder theory can be defined as a theory that advocates for organizations to acknowledge and account for their internal and external stakeholders. Furthermore, stakeholder theory holds both normative (moral/ethical) and instrumental (profit-enhancing) implications. Engaging with stakeholders can be perceived as an obligation to fulfill the valid demands of all stakeholders and/or as a strategy to optimize profitability (Ayuso et al., 2014). Stakeholder theory promotes the understanding and efficient management of stakeholder needs, desires, and requests. Stakeholder theory conceptualizes organizational purpose as originating from the goals and interests of stakeholders and views organizations as tools for pursuing shared purposes (De Meo et al., 2018; Xiao, 2023). Thus, it embodies a comprehensive and conscientious framework that goes beyond a decision-making process's exclusive focus on shareholders. In turn, this enables organizations to adopt a strategic approach, increase their value creation, and ensure their long-term prosperity and sustainability (Mahajan et al., 2023).

TABLE 1 Stakeholder comprehensive definitions.

	Definitions of stakeholder	References
1	Stakeholders are those groups who can affect or are affected by the achievement of the activities and objectives of an organization.	<ul style="list-style-type: none"> <li>Freeman and McVea (2001)</li> <li>Freeman (1984)</li> </ul>
2	Stakeholders are individuals and groups affected by the project or positioned to influence it, irrespective of possessing an official role within the project.	<ul style="list-style-type: none"> <li>Eskerod et al. (2016)</li> </ul>
3	Stakeholders are individuals and groups who, regardless of their intent or circumstance, contribute to a project's capacity for creation and participate in its activities.	<ul style="list-style-type: none"> <li>Ayuso et al. (2014)</li> </ul>
4	Stakeholders are individuals, groups, or organizations with a vested interest in a decision-making process; policies directly or indirectly impact them and potentially exert either positive or negative influence on the outcomes.	<ul style="list-style-type: none"> <li>Dale et al. (2019)</li> <li>Akhmouch and Clavreul (2016)</li> <li>Kujala et al. (2022)</li> </ul>
5	Stakeholders in the landscape are individuals or groups with an interest or stake in the management and use of the landscape, whose opinions and preferences are considered.	<ul style="list-style-type: none"> <li>De Meo et al. (2018)</li> </ul>



### 3.2.1 Historical context of stakeholder theory

Ackoff emerged as one of the first proponents of the stakeholder concept in 1956. A research group was established at Case Western Reserve University as a result of his advocacy for a systemic approach to comprehending corporate and societal challenges. This group investigated societal issues utilizing innovative research techniques dubbed “Social Systems Sciences” (Ackoff, 1956). In the early 1970s, Ackoff’s book “Redesigning the Future 1974” advocated interpreting complexities as a network of stakeholders. In addition, he began incorporating stakeholder-centered thinking into corporate planning (de Gooyert et al., 2017).

Ackoff attributed the stakeholder idea to Ansoff (1965), one of the pioneers in strategic planning, but notes that Ansoff rejected the idea. Ackoff confirmed that Igor Ansoff was present at the Stanford Research Institute in the 1960s when the concept of stakeholders was conceived. Simultaneously, systems theorist Rhenman (1973) was investigating the concept in Sweden. Equally notable is the impact of West Churchman on the evolution of this concept (Churchman, 1979). During his tenure as a graduate student at the University of Pennsylvania studying philosophy alongside Ackoff, Churchman contributed insights and commentary about the stakeholder idea.

During the late 1970s, Mitroff and Mason took the stakeholder concept further through a process termed “Strategic Assumptions Analysis” (Mason and Mitroff, 1981). This notion was expanded by Mitroff in his book “Stakeholders of the Organizational Mind” in 1983 (Mitroff, 1983). Mitroff collaborated with Emshoff and others at Wharton - the Wharton Applied Research Center - dedicating a year to applying “Strategic Assumptions Analysis” to corporate planning challenges. The primary application of the stakeholder concept in this context paralleled its usage at the “Stanford Research Institute,” wherein it served to structure environmental data or “assumptions” about the environment. However, it laid the groundwork for the framework of strategic decision-making (Eskerod et al., 2016; de Gooyert et al., 2017).

On the other side, Emshoff and Freeman, who also possessed a background in philosophy, worked to transform the stakeholder idea into a managerial framework termed stakeholder management (Mitroff, 1983). Emshoff and Freeman’s framework was a continuation of the groundwork laid by earlier pioneers, including Ackoff (1974) and Mason and Mitroff (1981), and it propelled the concept into the academic discourse surrounding both societal concerns and business policies. Operating through at Wharton, they had the opportunity to collaborate with various companies to test their theories and concepts. This endeavor was documented in Emshoff’s “Managerial Breakthroughs” 1980 and Freeman’s “Strategic Management: A Stakeholder Approach” 1984. The evolution of the stakeholder concept is meticulously detailed in the book of Freeman (1984) and was subsequently refined in an article co-authored with colleagues in 2010 (Parmar et al., 2010). Therefore, it can be acknowledged that Freeman established the foundation for contemporary stakeholder research, leading the way for a sequence of investigations that have enriched the field of stakeholder management to corporate social responsibility, ethical conduct, and sustainability (Eskerod et al., 2016).

On the basis of Freeman’s foundational work, Donaldson and Preston (1995) argued that corporations have an ethical responsibility to account for the interests of all stakeholders and that adept management of stakeholders can facilitate long-term profitability. They outlined three theoretical methodologies for addressing stakeholders: first, the Descriptive approach, which views

organizations as entities comprising diverse stakeholder groups as “means,” with their concerns or demands regarded; second, the Instrumental approach, which emphasizes the importance of stakeholder management due to its impact on financial results, aiming to strike a balance between financial and stakeholder concerns; and third, the Normative approach, which views organizations as entities comprising diverse stakeholder groups, with their concerns or demands regarded as “ends” rather than just the “means” to achieve financial outcomes.

Additional research, including the work of Mitchell et al. (1997), established that power, legitimacy, and urgency can serve as valuable indicators for gauging the influence of stakeholders. Moreover, Jones and Wicks (1999) proposed a comprehensive theory of stakeholders that integrated diverse perspectives and methodologies. Phillips et al. (2003) conclude that stakeholder theory is more than just a normative theory of corporate social responsibility or a theory of business ethics. Instead, stakeholder theory serves as a fundamental framework for understanding and supervising the interests of diverse stakeholders, with ramifications extending to other domains such as corporate social responsibility, ethics, and sustainability (Table 2).

### 3.3 Stakeholder approach

Stakeholder approach considers the interests and influence of various stakeholders in decision-making. While it emerged as a response in the corporate world, it also plays a crucial role in landscape protection (Liu et al., 2018). In the corporate realm, the stakeholder approach emphasizes the importance of considering the interests of various stakeholders to achieve long-term sustainable development and avoid exploitation (Omoding et al., 2020). Conversely, in landscape protection, the stakeholder approach is utilized to ensure the participation and initiative of local residents and stakeholders in reaching agreements, highlighting the need to mitigate free rider issues (Dale et al., 2019). Moreover, the stakeholder approach in landscape protection focuses on collective welfare and coalitional contracting solutions to address collective action problems, contrasting with the traditional agency view of corporate governance (Avanzini et al., 2016). This shift in focus underscores the different contexts of the stakeholder approach in landscape protection compared to its utilization in the corporate world.

In the context of landscape protection, the stakeholder approach involves engaging various actors with conflicting demands on land and water resources (Sayer et al., 2015). It recognizes that different stakeholders have diverse interests and aims to reconcile these trade-offs through multi-stakeholder negotiations (Baylan and Karadeniz, 2018). The concept of the stakeholder approach entails that managers are responsible for devising and executing procedures that fulfill the requirements of all stakeholders (Freeman and McVea, 2001). At the core of the stakeholder approach concept lies the management and harmonization of interactions and concerns among shareholders, employees, customers, suppliers, communities, and additional entities, all orchestrated to ensure sustained prosperity (Wondirad et al., 2020). Landscape stakeholder approaches provide an organizing framework for comprehending the complexity of the landscape and assessing the impacts of various courses of action (Doyle-Capitman et al., 2018). They create opportunities for societal mobilization and can lead to more favorable land use outcomes (Pătru-Stupariu et al., 2016).

TABLE 2 Historical context of stakeholder theory.

Year	First author	Title	Key contributions	References
1956	Ackoff	The development of operations research as a science	Emerged as one of the first proponents of the stakeholder concept.	• <a href="#">Ackoff (1956)</a>
1973	Rhenman	Organization theory for long-range planning	Investigating of the stakeholder concept using an organization theory.	• <a href="#">Rhenman (1973)</a>
1979	Churchman	The systems approach and its enemies	Contributed insights and commentary on the stakeholder concept using a systems approach.	• <a href="#">Churchman (1979)</a>
1981	Mason	Challenging strategic planning assumptions: theory, cases, and techniques	Took the stakeholder concept through a process termed “strategic assumptions analysis.”	• <a href="#">Mason and Mitroff (1981)</a>
1981	Emshoff	Stakeholder management: a case study of the U.S. brewers association and the container issue	Transform the stakeholder idea into a managerial framework termed stakeholder management.	• <a href="#">Mitroff (1983)</a>
1984	Freeman	A stakeholder approach to strategic management	Established the foundation for stakeholder theory and advocated for considering all stakeholders into account.	• <a href="#">Freeman (1984)</a>
1995	Donaldson	The stakeholder theory of the corporation: concepts, evidence, and implications	Affirmed the moral imperative to consider stakeholders and proposed three theoretical approaches for doing so.	• <a href="#">Donaldson and Preston (1995)</a>
1997	Mitchell	Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts	Introduced power, legitimacy, and urgency as indicators for guiding stakeholder management	• <a href="#">Mitchell et al. (1997)</a>
1999	Jones	Convergent stakeholder theory	A comprehensive theory of stakeholders that integrated diverse perspectives and methodologies	• <a href="#">Jones and Wicks (1999)</a>
2003	Phillips	What stakeholder theory is not	Stakeholder theory emphasized its role as a framework for understanding and addressing the interests of various stakeholders.	• <a href="#">Phillips et al. (2003)</a>
2010	Parmar	Stakeholder theory: the state of the art	Provided an overview of the present status of stakeholder theory and its applications across multiple fields, along with the potential contributions offered by stakeholder management to corporate social responsibility, ethical conduct, and sustainability.	• <a href="#">Parmar et al. (2010)</a>

However, the success of landscape approaches depends on factors such as strong leadership, sustained long-term and facilitated processes, good governance, adequate budgets, and shared interests among all stakeholders ([Reed et al., 2020](#)). The stakeholder approach is crucial for categorizing the main groups of stakeholders that influence landscape protection.

[Taghian et al. \(2015\)](#) have categorized the stakeholder approach into two main groups: internal and external. Internal stakeholders encompass managers, government employees, and union institutions within the landscape ([Forsyth and Springate-Baginski, 2021](#)). Internal stakeholder approaches also emphasize the need for inclusive decision-making processes that give voice and representation to marginalized groups and balance the needs of different interest groups ([Ros-Tonen et al., 2018](#)). On the other hand, external stakeholders involve the public, including the local community and residents. External stakeholder approaches tend to a wide range of aims, such as forest restoration, sustainable commodity sourcing, or carbon emission reduction ([Forsyth and Springate-Baginski, 2021](#)). Using this classification, the Landscape stakeholder approaches can be further divided into two distinct approaches: the expert approach, which focuses on internal stakeholders, and the perception approach, which centers on external stakeholders.

### 3.3.1 Stakeholder expert approach

The stakeholder expert approach is known as “internal stakeholders.” Expert stakeholders include managers, government employees, and trade union institutions responsible for making landscape decisions ([Forsyth and Springate-Baginski, 2021](#)). The stakeholder expert approach differs from other stakeholder involvement approaches by focusing on involving experts in producing decisions based on knowledge rather than relying on presenting the results ([Mitchell et al., 2020](#)). This approach acknowledges the expertise and perspectives of expert stakeholders, treating them as valuable contributors to the decision-making processes rather than passive recipients of information ([Dawkins, 2015](#)). This means that they are responsible for making decisions based on their precise knowledge and experience in this field. Additionally, this approach recognizes the value of involving expert stakeholders throughout the decision-making process to improve output quality and legitimize the results ([Le and Campbell, 2022](#)). It emphasizes the importance of building stakeholder relationships through personal involvement methods ([Mitincu et al., 2023](#)). By actively involving expert stakeholders in the decision-making processes, the expert approach aims to ensure the sustainability and

viability of projects in interdisciplinary fields such as urban environments (Opoku et al., 2014).

The stakeholder expert approach offers several benefits. It allows institutions to stay in sync with the dynamic concerns of stakeholders, ensuring that strategies and action plans accommodate stakeholder interests (Escaron et al., 2015). This approach provides a more inclusive perspective for those seeking to involve the institution in the decision-making process and creating space for social participation (Le and Campbell, 2022). Additionally, it facilitates the maximization of value for the institution by establishing strategic actions that ensure the sustainability of the business and the well-being of society (Vurro et al., 2022). Furthermore, the stakeholder expert approach enables the integration of expert knowledge in a multi-stakeholder environment, allowing for the creation of innovative solutions to complex problems (Mitchell et al., 2020). Lastly, it enhances the likelihood of delivering net value to society by combining expert judgment processes and public stakeholder values with management (Ogawa et al., 2023; Zakaria et al., 2023).

While the stakeholder expert approach offers advantages, it encounters several obstacles. One significant issue is the absence of a formal mechanism for communicating their decisions to the general public stakeholders (Mitchell et al., 2020). Moreover, decisions based on the visual appeal of landscapes tend to be subjective and rely heavily on experiential factors (Mundher et al., 2023a). Understanding the behavior of expert stakeholders poses another challenge due to its complexity influenced by various factors (Escaron et al., 2015). Additionally, concerns have been raised that stakeholder expert decisions may prioritize personal gain over the public's welfare, necessitating a reevaluation of ethical theory fundamentals to develop a more public-oriented approach (Brunetti et al., 2020). Addressing these challenges is essential to meet the needs of public stakeholders, facilitate institutional decision-making, and contribute to landscape protection (Wagner, 2015).

### 3.3.2 Stakeholder perception approach

The stakeholder perception approach is known as “external stakeholders.” Perception stakeholders include the public, including the local community and residents responsible for expressing their standpoints and needs in decisions that concern them (Forsyth and Springate-Baginski, 2021). The stakeholder perception approach refers to how public stakeholders perceive and evaluate the actions and behavior of the public (Jokonya et al., 2015). This is important because the success of social responsibility practices depends on how stakeholders perceive and engage with the institution. The stakeholder perception approach involves public stakeholders in decision-making processes and considers their interests and concerns (Eskerod, 2020). Its goal is to create positive outcomes by securing public stakeholder buy-in and improving the adoption and implementation of landscape protection. Additionally, the stakeholder perception approach recognizes that public stakeholders may have different perspectives and expectations and that social behavior can be perceived differently depending on the dimension and perspective considered (Brescancin et al., 2018). Understanding public stakeholder perceptions is crucial for effective collaboration and achieving the institution's goals (Jokonya et al., 2015). The stakeholder perception approach is a structured quantitative approach based on multi-attribute group decision-making techniques designed to support public stakeholder involvement in sustainability projects (Bellantuono et al., 2016).

Utilizing a stakeholder perception approach in a project offers several advantages. It helps enhance the value delivered by projects and increases their success rate by placing the general public at the center of both project development and project management (Davis, 2016). Additionally, it enables decision-makers to understand and assess various criteria in urban planning projects from both their perspective and the public's perspective, revealing similarities and differences between the two (Samstad et al., 2019). Moreover, it provides a valuable tool for evaluating natural resource management policies by comparing stakeholder perceptions with ecological outcomes, demonstrating that stakeholder perception can align well with ecological results (McDonald et al., 2016). Also, incorporating public stakeholder perspectives into environmental decision-making can enhance decision legitimacy, the likelihood of implementation, and the quality of outcomes (Scolobig and Lilliestam, 2016). Lastly, it aids in actively managing relationships between public stakeholders, reducing risks and potential conflicts, and ultimately improving project outcomes (Rajablu et al., 2014).

Despite the advantages and support for the stakeholder perception approach, it faces several challenges. One key issue with this approach is its tendency to prioritize decisions that align with the preferences of the majority, which may not accurately and comprehensively represent all local residents (Mitchell et al., 2020). Additionally, assessing natural resource management policies based on public stakeholder can be challenging in the absence of robust, long-term data (McDonald et al., 2016). Furthermore, the conventional criteria used to identify public stakeholders in the stakeholder perception approach may not adequately explain the intricate processes and shared responsibilities in contemporary societies (Kusters et al., 2018). It's important to recognize that most ventures, programs, and portfolios involve a broad spectrum of public stakeholders with diverse, and sometimes conflicting, interests. These public stakeholders, alongside other interest groups, can significantly influence the ultimate success or failure of the initiative. Ultimately, addressing these challenges is vital to meet the needs and viewpoints of public stakeholders, facilitate institutional decision-making, and contribute to landscape protection. This is essential for ensuring the success and legitimacy of projects and decisions (Zakaria et al., 2023).

## 3.4 Stakeholder involvement in landscape protection

With the growing complexity of environmental issues, it is recognized that environmental problems cannot be solved by the government alone; indeed, participation in environmental decision-making effectively links public stakeholder involvement to environmental governance (Reed et al., 2020). Stakeholder involvement in landscape protection is considered crucial for successful decision-making and governance. It is recognized that stakeholders have a right to participate in decision-making processes that affect them (Garau et al., 2021). By involving the stakeholder as the source of environmental problems and solutions to environmental discussions, transparency and accountability are more likely to be achieved, thereby ensuring the legitimacy of decisions on which good environmental governance depends (Dale et al., 2019; Olofsson et al., 2023). A prerequisite for these positive outcomes is the true integration of the different experiences and knowledge from all

stakeholders based on the principles of inclusiveness, equity, and social justice (Garau et al., 2021). Arguably, strong stakeholder involvement in environmental governance could increase commitment among stockholders, which in turn should strengthen the compliance and enforcement of environmental laws (Gerlak et al., 2023). This implies that the contributions of stakeholder involvement will have an impact on the development of landscape protection and environmental laws (Garau et al., 2021).

However, different research and official documents define the concept of stakeholder involvement from different perspectives (McGrath and Whitty, 2017). Schweizer et al. (2021) suggested that stakeholders' involvement in the forest and landscape community, such as the private sector, local social interest groups, government, and non-governmental organizations, protect the community's interests. Moreover, Gerlak et al. (2023) focused on Stakeholder engagement between scientists and decision-makers in the co-production of knowledge for environmental and natural resource decision-making. In addition, García-Nieto et al. (2015) define the role of stakeholder involvement in exploring differences in the spatial distribution of ecosystem services. Also, Sharpe et al. (2021) focused on delineating criteria for stakeholder priorities for environmental management and establishing steps for the involvement of stakeholders. Ultimately, Kusters et al. (2020) define stakeholder involvement as playing a significant role in fostering landscape valorization and can contribute to improving landscape governance. Despite the differences in stakeholder involvement presented, stakeholder involvement may be regarded as a form of empowerment and as a crucial component of landscape governance protection.

Moreover, the literature reveals that the concept of stakeholder involvement differs from public involvement for landscape use and landscape governance (Palinkas et al., 2013). Public involvement encompasses a range of procedures and methods designed to consult, involve, and inform local communities and citizens, i.e., the 'public'. By opening up a wider, more inclusive perspective, stakeholder involvement transcends civil society and end users and reaches other participant groups inside and outside the landscape department in activities related to planning, decision-making, implementation, monitoring, and evaluation (Sterling et al., 2017; Dale et al., 2019). Therefore, to accurately explain stakeholder involvement, one should understand who the involved stakeholders are, their characteristics, and the benefits and risks that arise from their involvement.

### 3.4.1 Identifying stakeholders' involvement

Stakeholder involvement is designed to ensure that the people's will is upheld by providing opportunities for their voices to be heard and by communicating what will be done and the impacts of a specific project to the people (Scerri and Attard, 2023). Local stakeholders are crucial in assessing landscape services and spatial evaluation indicators (Antognelli and Vizzari, 2017). They provide valuable knowledge and insights into the benefits and values of the landscape that expert evaluations or proxy data may not capture. In this context, Dale et al. (2019) suggested that stakeholder participation is required in the sustainable landscape protection process. Therefore, Sautter and Leisen (1999) claimed that the first step in implementing stakeholder involvement is to have a full appreciation of all the persons or groups who have interests in the planning processes and outcomes. Also,

Colvin et al. (2016) identify that social structures relevant to stakeholders' involvement include the private sector, regulators, service providers, donor agencies, investors, and civil society in its various forms (e.g., individual users, group citizens, and organizations or non-governmental organizations NGOs), as well as other relevant constituencies. According to Zakaria et al. (2023), stakeholders will typically include individuals and groups performing the work, individuals and groups affected by the work, owners, shareholders, customers, and statutory and regulatory bodies. Due to the variability in determining the stakeholders in different projects, Sautter and Leisen (1999) adopted the Stakeholder Map. The stakeholders responsible for landscape protection were identified and included businesses/operators, local communities/residents, managers/local policymakers, protection groups/NGOs, and tourists, as shown in (Figure 2).

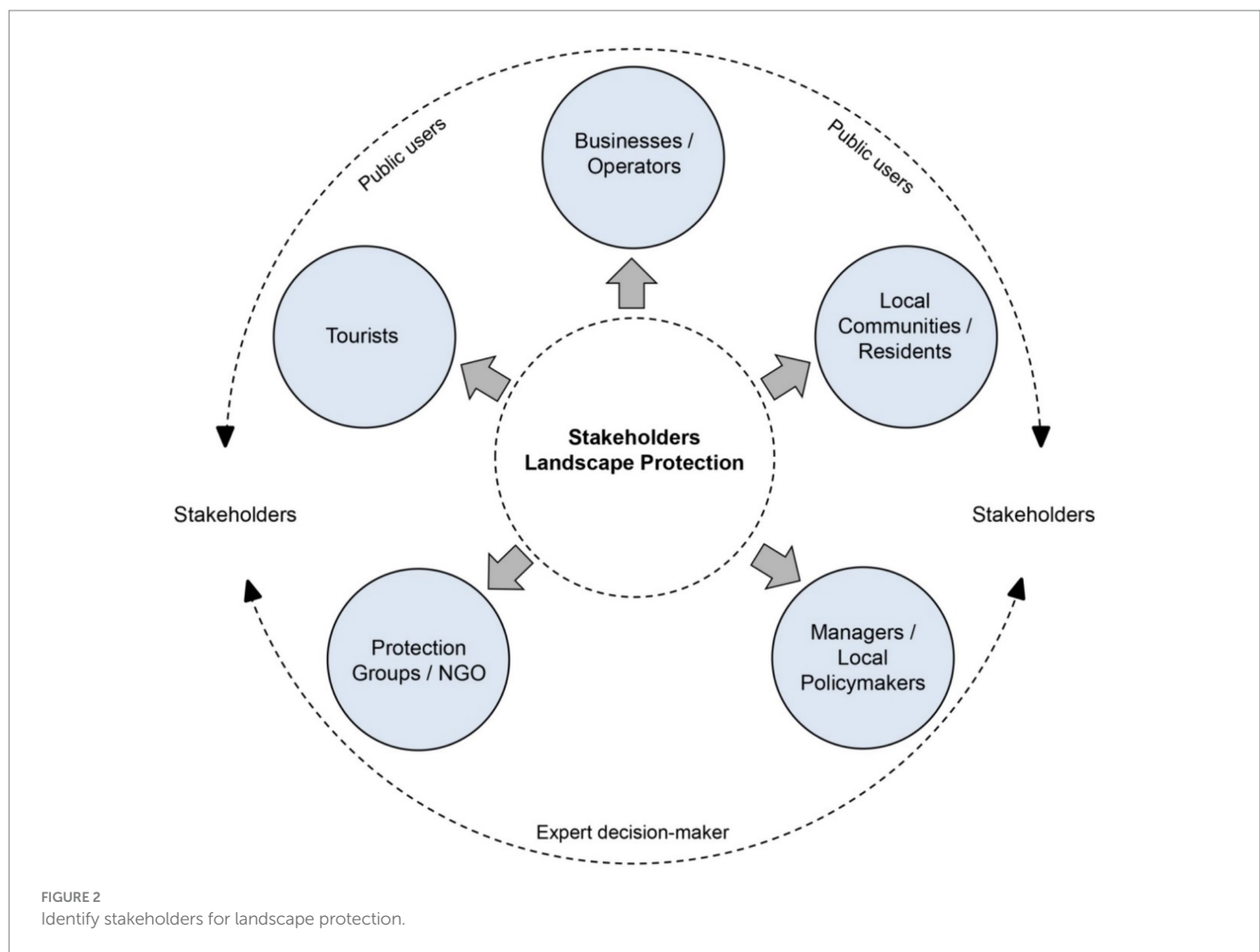
### 3.4.2 Characteristics of stakeholder involvement

To involve stakeholders in landscape conservation decision-making processes, effective management engages individuals who may be affected by or who may influence the implementation of the decision-making process. This stakeholder involvement can lead to a wide range of benefits for landscape protection and may even result in the development of new governance methods if executed effectively (Kujala et al., 2022). Therefore, the success of this approach hinges on the careful selection of involved stakeholders, as poor selection is likely to lead to mistrust, tension, and a reduced likelihood of establishing successful relationships in decision-making (Sterling et al., 2017). In such cases, the selection of stakeholders should be based on key characteristics to create a meaningful experience. Kusters et al. (2018) outlined the essential characteristics of meaningful stakeholder involvement as it should be grounded in stakeholders' values and vision. Also, stakeholders should have a say in decisions regarding actions that could affect their lives or the essential environment for life. Moreover, stakeholder involvement includes the commitment that each stakeholder's contribution will influence the decision-making process and should be free from manipulation or coercion, focusing on long-term involvement. The characteristics of stakeholder involvement in landscape protection can vary, but they often include the following key elements: inclusivity, collaboration and information sharing, transparency, expertise, adaptability, long-term perspective, and monitoring and evaluation; as shown in (Table 3).

### 3.4.3 Benefits of stakeholder involvement

The process of involving stakeholders may incur higher costs compared to a complete lack of consultation; however, these costs are likely to be offset by short- and long-term benefits, such as the testing and refining of decisions. Short-term benefits pertain to the outcomes of involvement, including improved decision-making, greater stakeholder readiness to collaborate in addressing landscape protection issues, and increased support for implementing landscape protection or policies (Dale et al., 2019). The long-term benefits encompass enhanced understanding and awareness of landscape loss risks, increased confidence in the decisions made by governing bodies, and increased breadth of understanding of sustainability problems. Benefits can be grouped into four categories: acceptability and sustainability, social equity and cohesion, capacity





development, and economic efficiency (Akhmouch and Clavreul, 2016).

### 3.4.3.1 Acceptability and sustainability

The involvement of stakeholders enhances the acceptability and sustainability of initiatives and policies in landscape protection (Akhmouch and Clavreul, 2016). Stakeholder involvement is crucial for ensuring sustainable management and contributes to making policies and initiatives more resilient and legitimate over time. Participation in decision-making raises awareness of environmental issues and fosters willingness to implement new sustainable measures (Martín et al., 2021). Stakeholder involvement processes allow different actors to negotiate and develop collaborative actions to address challenges and make decisions in landscape protection (Vila Subirós et al., 2016). Additionally, stakeholder involvement in the management of protected areas can lead to increased trust and a perceived likelihood of positive future decision outcomes (Dale et al., 2019; Ruiz et al., 2023). In contrast, policymaking or project processes that exclude stakeholders can result in protests and implementation delays. Inclusive decision-making by stakeholders can also prevent decision-makers from considering certain options, thereby undermining the democratic legitimacy and accountability of decision-making processes. Consequently, participation processes play a crucial role in public scrutiny and in holding decision-makers accountable, ultimately resulting in more sustainable projects and policies (Akhmouch and Clavreul, 2016).

### 3.4.3.2 Social equity and cohesion

The involvement of stakeholders ensures fairness and democracy in decision-making and can resolve conflict situations (Akhmouch and Clavreul, 2016). Stakeholder involvement helps bolster stakeholders' confidence, enhance customer satisfaction, and facilitate cooperation toward more cohesive and inclusive decision-making (Reed et al., 2018). When stakeholders involve themselves in the decision-making process, they are more likely to feel a sense of responsibility for the outcome compared to when they are excluded and made to believe that the ultimate decision is being imposed upon them (Newig et al., 2017). However, stakeholder in landscape protection can vary, with different viewpoints based on stakeholder background interpretations (Young et al., 2013). Therefore, involvement methods can help address the lack of stakeholder consensus on land management priorities and ensure that diverse perspectives are considered, thereby achieving social equity (Kizos et al., 2018). This enables the transition of perspectives from individual local actions to a collective and cohesive social scale through discussions and integration (García-Nieto et al., 2019). Moreover, stakeholder involvement contributes to a greater sense of ownership over the outcomes of the involvement processes, leading to subsequent actions, whether it involves the construction of new landscape infrastructure or the implementation of landscape policies (Akhmouch and Clavreul, 2016; Doyle-Capitman et al., 2018). In summary, stakeholder involvement can contribute to social equity,

TABLE 3 The characteristics of stakeholder involvement in landscape protection.

Characteristics	Description	References
Inclusivity	Inclusivity in stakeholder involvement in landscape protection includes a wide range of stakeholders interested in or affected by landscape preservation. It ensures that all relevant actors, including civic, private, and public stakeholders, have equal opportunities to influence decision-making and contribute their perspectives on addressing landscape-level challenges.	<ul style="list-style-type: none"> <li>• Kusters et al. (2020)</li> <li>• Wondirad et al. (2020)</li> <li>• Kusters et al. (2018)</li> <li>• Goodson et al. (2022)</li> <li>• Kizos et al. (2018)</li> </ul>
Collaboration and information sharing	Collaborative landscape protection involves decision-making through collaboration, where stakeholders work together to develop strategies and plans for preserving and managing landscapes. Effective communication and information sharing ensure that stakeholders are well-informed about the state of the landscape, proposed protection measures, and their roles in the process.	<ul style="list-style-type: none"> <li>• Kusters et al. (2020)</li> <li>• Dale et al. (2019)</li> <li>• Goodson et al. (2022)</li> <li>• Kizos et al. (2018)</li> <li>• Wamsler (2017)</li> </ul>
Transparency	Transparency in landscape stakeholder involvement refers to the openness and clarity in the decision-making process, and it is critical for building trust among stakeholders. It involves open and honest communication about the goals, strategies, and outcomes of landscape protection efforts.	<ul style="list-style-type: none"> <li>• Kusters et al. (2020)</li> <li>• Dale et al. (2019)</li> <li>• Wondirad et al. (2020)</li> <li>• Kusters et al. (2018)</li> <li>• Jericó-Daminello et al. (2021)</li> </ul>
Expertise	Expertise in landscape stakeholder involvement refers to the level of knowledge and skills that stakeholders possess related to landscape management and decision-making processes. It is crucial for stakeholders to have a profound understanding of the complexities and interdependencies within landscapes to effectively contribute to decision-making and achieve sustainable outcomes.	<ul style="list-style-type: none"> <li>• Dale et al. (2019)</li> <li>• Kusters et al. (2018)</li> <li>• Suldovsky et al. (2017)</li> </ul>
Adaptability	Adaptability in landscape stakeholder involvement refers to the ability of stakeholders to adjust and respond to changing circumstances and challenges in the management of landscapes. It involves the capacity to engage in deliberative processes, negotiate and learn from others, and enhance the quality of arguments and insights.	<ul style="list-style-type: none"> <li>• Wondirad et al. (2020)</li> <li>• Kusters et al. (2018)</li> <li>• Wamsler (2017)</li> </ul>
Long-term perspective	A long-term perspective in stakeholder involvement for landscape protection typically necessitates effective communication, patience, and trust, with a focus on sustainable practices and the ongoing maintenance of protected areas; this is because protection projects often require a significant amount of time to achieve their goals.	<ul style="list-style-type: none"> <li>• Kusters et al. (2020)</li> <li>• Dale et al. (2019)</li> <li>• Kusters et al. (2018)</li> <li>• Suldovsky et al. (2017)</li> <li>• Colvin et al. (2020)</li> </ul>
Monitoring and evaluation	Monitoring and evaluation of stakeholder involvement in landscape protection efforts are crucial to assess their effectiveness and make necessary adjustments. It should involve a systematic process of assessing and analyzing the progress, outcomes, and impacts of multi-stakeholder platforms and initiatives in landscapes.	<ul style="list-style-type: none"> <li>• Dale et al. (2019)</li> <li>• Kusters et al. (2018)</li> </ul>

cohesion, and improved decision-making processes in landscape protection.

### 3.4.3.3 Capacity development

The involvement of stakeholders can strengthen capacity building and empowerment (Akhmouch and Clavreul, 2016). It can serve an educational function by enabling participants to develop the skills necessary to articulate their interests and concerns, providing them with insights into decision-making and implementation processes. Effective capacity development initiatives in protection activities should include tailored activities, diverse knowledge sources, skill sets for selecting protection interventions, and multiple subjects and skill sets (Bloomfield et al., 2019). Moreover, the process of jointly designing and implementing a policy or project can strengthen local organizations, develop confidence, skills, and cooperation capacity, and increase awareness and critical evaluation in landscape protection (Akhmouch and Clavreul, 2016; Kizos et al., 2018). Encouraging communication and collaboration between various stakeholders is a useful method for integrating knowledge and capacity development from various disciplines (Newig et al., 2017; Dale et al., 2019). Additionally, research and lessons from the experiences of others can

provide a foundation for participatory activities that foster mutual learning and contribute to the long-term management of landscape resources (Cohen et al., 2015; Brescancin et al., 2018). Stakeholders who are involved can then share their perspectives and generate new knowledge that enhances the overall understanding of pertinent issues, such as capacity development, culture, aesthetics, and spirituality in the protection of the landscape (Payera, 2018). In this manner, capacity development through stakeholder participation contributes to nature protection, knowledge sharing, and overall positive collaboration, with lower risks and adequate effort for decision-making in landscape protection (Enengel et al., 2014).

### 3.4.3.4 Economic efficiency

Stakeholder involvement can lead to efficient landscape management, enhancing economic efficiency and satisfying various consumer needs (Avanzini et al., 2016). The involvement of stakeholders contributes to economic efficacy, optimizing invested resources and producing improved outcomes with greater cost-effectiveness over time. Furthermore, it can assist in optimizing cost-saving, value for money, and time-saving (Akhmouch and Clavreul, 2016). Landscape initiatives that involve stakeholders working

together can contribute to a common understanding among landscape-level stakeholders and trigger discussions on adapting financial flows to reduce negative impacts or increase positive impacts (Wamsler, 2017). Additionally, stakeholders contribute to broader economic benefits, such as improved policy coherence, and reduce the costs of conflict and contention. Encouraging mutual stakeholders to discuss their diverse interests and needs contributes to building consensus and common agreements on economic issues that could have otherwise stoked tensions, such as enhancing economic efficiency and common interests in the use and development of landscape in hot spring areas (Akhmouch and Clavreul, 2016). Overall, stakeholder involvement in landscape protection can lead to improved management, collaboration, and decision-making, resulting in economic benefits and enhanced landscape sustainability.

### 3.4.4 Risks of stakeholder involvement

Despite its advantages, stakeholder involvement in landscape protection carries some risks. These risks include conflicts over procedures, unclear decision-making scope, the potential of not implementing decisions, and the risk of individuals with less influence feeling marginalized (Enengel et al., 2014). Also, stakeholder involvement can entail certain risks related to potential conflicts among stakeholders arising during the participation process if it is poorly managed (Kubota et al., 2013). There are also risks of opposition and litigation over the process outcomes if stakeholders are only engaged in the final phase of the policy or project process and have no influence over earlier stages (Terkenli and Kavroudakis, 2017).

Moreover, stakeholder involvement processes that are established under false or misleading pretenses (i.e., giving the illusion of inclusiveness on a particular issue when, in fact, the decision has already been made) can undermine trust of decision-makers if the participants discern that their inputs were not utilized (Akhmouch and Clavreul, 2016). Furthermore, reluctance to alter current practices, complexity of the process, and over-consultation can all increase the likelihood of frustration and fatigue among stakeholders (Vargas-Payera et al., 2020). Additionally, not all participation processes result in positive outcomes, for example, while a collaborative initiative is in progress, new officials may refuse to implement what their predecessors promised, or, as a

result of changes in their roles, stakeholder groups that have previously approved a final agreement may change their views and obstruct its implementation (Susskind, 2013).

However, there exist mechanisms and measures to assist decision-makers in mitigating these risks, and these are made more effective by promoting multi-stakeholder partnership methods (Louman et al., 2021). These approaches help capture different perspectives and enhance the quality of arguments, allowing for new insights and overcoming risks (Forsyth and Springate-Baginski, 2021). Furthermore, improving the governance of landscapes requires analyzing and improving institutional arrangements, promoting cooperation, ensuring integrity and transparency, and enabling the recognition and involvement of stakeholders in matters that matter to them (Dale et al., 2019). Subsequently, decision-making becomes more inclusive, equitable, and less risky, ensuring that the needs and interests of all stakeholders involved in landscape protection are considered, as shown in (Table 4).

## 3.5 Stakeholder preferences of landscape protection

Stakeholders' preferences in landscape refer to the opinions and choices of individuals or groups with a vested interest or those affected by the design, management, or use of a particular landscape (De Meo et al., 2018). These preferences play a crucial role in the decision-making processes, ensuring that the community's needs and desires are taken into account (Ureta et al., 2020). Understanding stakeholders' preferences allows for the prioritization of ecosystem services and the development of conservation programs that align with their well-being and maintain ecosystem health (De Meo et al., 2018). These preferences encompass a wide range of factors, including visual perceptions, ecosystem services, land use priorities, and the provision of goods and services (Ureta et al., 2020). Understanding stakeholders' preferences is essential for effective decision-making in landscape planning and management. It helps identify priorities, prevent conflicts, and ensure the well-being of both stakeholders and the ecosystem (Foelske and van Riper, 2020). Various studies emphasize the importance of considering stakeholders' preferences in various contexts, including conservation

TABLE 4 Risks and mitigating of stakeholder involvement.

Risks	Example	Mitigation	References
Risk of conflicts	Conflicts resulting from objectives, interests, and motivations.	Establishing negotiation and mediation processes for reaching an agreement.	<ul style="list-style-type: none"> <li>Enengel et al. (2014)</li> <li>Mitchell et al. (2020)</li> <li>Newig et al. (2017)</li> <li>Kubota et al. (2013)</li> </ul>
Risk of opposition and litigation	Opposition to the involvement procedure and results.	Stakeholder involvement as early as possible to ensure that everyone controls the process.	<ul style="list-style-type: none"> <li>Akhmouch and Clavreul (2016)</li> <li>Mitchell et al. (2020)</li> <li>Terkenli and Kavroudakis (2017)</li> </ul>
Risk of accountability	Accountability related to involvement set-up under false or deceptive pretenses.	Providing a clear rationale and objectives and ensuring integrity and transparency.	<ul style="list-style-type: none"> <li>Dale et al. (2019)</li> <li>Akhmouch and Clavreul (2016)</li> <li>Mitchell et al. (2020)</li> <li>Susskind (2013)</li> </ul>
Risk of frustration and fatigue	Reluctance to change, process complexity, or over-consultation.	Defining distinct objectives and expectations and involving stakeholders in matters that matter to them.	<ul style="list-style-type: none"> <li>Dale et al. (2019)</li> <li>Mitchell et al. (2020)</li> <li>Vargas-Payera et al. (2020)</li> </ul>

programs (Ureta et al., 2020), forest management planning (Mundher et al., 2022b), and land use planning (Foelske and van Riper, 2020). Therefore, stakeholders' preferences in landscape are fundamental for achieving landscape protection goals.

Stakeholders' preferences are a reliable and effective method for obtaining data about people's preferences for a particular landscape (Villamor et al., 2014). People evaluate environments based on their overall affective judgments and responses (Imran et al., 2014). According to Kaplan (1985), preference results from acquired knowledge, cognitive processing, and innate reactions. In this regard, Mundher et al. (2022c, 2023b) indicated that visual preference depends on viewers' sentiments, emotions, and backgrounds, while interactions influence their perceptions, preferences, and the selection of environments that represent community, cultural, and aesthetic values. In a direct sense, emotions and expertise allow individuals to view certain components of the environment as outstanding, indicating those emotions and background knowledge influence participants' preferences. Moreover, stakeholders' preferences may also vary with different time periods, stakeholder backgrounds, varying environmental conditions, educational backgrounds, and the process of engaging with the landscape (Reed et al., 2018). In this case, Ferreira et al. (2020), engage stakeholders with diverse ecological knowledge, such as local communities and indigenous groups, which play a critical role in enhancing the ecological outcomes of landscape conservation efforts. Additionally, careful stakeholder selection may be required to obtain effective preferences, especially for sensitive topics such as landscape protection (Dale et al., 2019).

Understanding stakeholder preferences for natural landscape protection becomes richer when considering ecocultural identity (Milstein and Castro-Sotomayor, 2020). For instance, stakeholders' professions play a clear role in that conservation biologists are more likely to be driven by ecological health, advocating for stricter regulations. Conversely, resource extraction or development stakeholders prioritize economic opportunities, shaping a contrasting ecocultural identity. While inclusive governance seeks to balance these perspectives, cultural backgrounds further influence ecocultural identity and preferences. Indigenous stakeholders with deep spiritual connections to the land advocate for practices that coexist with nature, reflecting a strong ecocultural identity (Stoeckl et al., 2021). Urban stakeholders, whose ecocultural identity might be shaped by limited access to nature, prioritize recreational opportunities (Liu et al., 2021). Rural stakeholders reliant on resource extraction might have concerns about restrictions within protected areas, highlighting the complex interplay between ecocultural identity and livelihoods (Branco et al., 2020). Proximity to natural landscapes also shapes ecocultural identity (Milstein and Castro-Sotomayor, 2020). Stakeholders near protected areas appreciate environmental benefits but may have concerns about limitations on traditional uses, reflecting the intertwined nature of their identity and the environment (Berkes, 2004). Conversely, those far removed might prioritize development over conservation (Van Den Born et al., 2020). Finally, personal values and generational differences play a role. Stakeholders with strong environmental stewardship advocate for stricter protection, possibly reflecting a strong ecocultural identity that prioritizes sustainability. Stakeholders of younger generations, often exhibiting greater concern for environmental sustainability, might reflect a shifting ecocultural identity (Lorenzini et al., 2021). Recognizing this heterogeneity in ecocultural identities is crucial for crafting effective and inclusive natural landscape protection

strategies, considering the diverse ways stakeholders connect with the natural world (Reed et al., 2020). Ultimately, stakeholder preferences result from perception and reflect innate reactions, acquired knowledge, and cognitive processing, as stakeholders express their preferences for specific landscapes (Qiu et al., 2014).

### 3.5.1 Methods used to collect stakeholders' preferences

Stakeholder preferences are studied using various communication methods, such as field interviews (Burns and Haraldsdóttir, 2019), public participation methods like surveys (Chreptun et al., 2023), or participant interviews or observations (Tuyen et al., 2022) or employed focus groups and online consultations (Hossu et al., 2022). Furthermore, Keseru et al. (2021) propose a methodology that combines scenario analysis and focus group discussions of the scenarios, while Chang et al. (2023) utilize quality function deployment (QFD) based on a multi-stakeholder and multi-expert multi-criteria decision-making (MCDM) model. Also, Vo et al. (2023) employ stakeholder preferences through the analytic hierarchy process and compositional data analysis to assess socioeconomic or environmental benefits. These methods help increase the breadth of understanding of issues and allow for multiple perspectives to be considered. However, it is important to note that different methods may yield different results and engage different types of stakeholders.

The choice of method should be based on the research objectives and the nature of stakeholder involvement. Combining mixed methods can often provide a more comprehensive understanding of stakeholders' preferences and improve the robustness of the results (Davis, 2016). However, using mixed methods to collect stakeholders' preferences in landscape protection decisions presents challenges. One challenge is the need for clear communication and trust-building among diverse stakeholders, including experts and local communities (Cole et al., 2023). Another challenge is the complexity of the decision-making process, which requires incorporating multiple perspectives and considering various dimensions such as power dynamics, ecosystem services, and place-based identity (Reed et al., 2019; Cronan et al., 2022). However, these challenges also present opportunities. By engaging stakeholders in the decision-making process, it is possible to generate meaningful conversations, create common understandings, and translate research findings to different audiences (Peck and Khirfan, 2021). Furthermore, integrated landscape approaches that incorporate diverse stakeholders and knowledge systems can lead to more equitable and sustainable development, enabling decision-makers to prioritize management actions and reduce stakeholder conflicts (Dale et al., 2019).

To ensure that stakeholders' preferences are taken into account in landscape protection decisions, a collective and multi-faceted approach is necessary. This can be achieved by framing landscape decision-making as a governance process that encourages key stakeholders to come together and discuss their priorities and what constitutes good governance (Cole et al., 2023). Therefore, in making landscape protection decisions, participatory methods are often used to create a negotiation and learning space for stakeholders to express their knowledge and values (Brescancin et al., 2018; Allain and Salliou, 2022). One of the most successful and reliable methods used to obtain direct feedback and a negotiation space with stakeholders is field interviews or focus groups through direct communication with stakeholders (Keseru et al., 2021; Tuyen et al., 2022). Moreover, employing a combination of methods and



meaningful and effective stakeholder involvement strategies is crucial to ensure a comprehensive understanding of stakeholders' preferences in landscape protection decisions. This is called the purposeful sampling method, and it is a technique widely used in qualitative research (Palinkas et al., 2013). Ultimately, direct involvement with stakeholders in the protection of landscapes can establish a robust governance approach (Chuamuangphan, 2016).

### 3.5.2 Factors affecting stakeholders' preferences

Environmental managers have a comprehensive range of goals, often with competing interests. They need to balance multiple uses of management areas, considering economic, ecological, and social interests. An expanded set of stakeholder factors could be beneficial in this regard (Sharpe et al., 2021). Factors affecting stakeholders' preferences in landscape protection are important to consider because they play a crucial role in decision-making processes and the successful implementation of protection strategies (Hölting et al., 2020). Therefore, recognizing and understanding these factors are essential when involving stakeholders and incorporating their preferences into decision-making processes. By addressing these factors, decision-makers can effectively navigate stakeholder dynamics and promote more inclusive and effective decision-making processes (de Castro-Pardo et al., 2019). Considering factors such as the diverse values, interests, and demands of stakeholders

in multifunctional landscapes can help address conflicts and improve landscape management (Hölting et al., 2020; Li et al., 2024). Moreover, numerous factors such as knowledge, expertise, trust, and relationships can impact stakeholder preferences during the decision-making process, with variations depending on the specific context and stakeholder characteristics (Githiora-Murimi et al., 2022). Therefore, stakeholders' preferences in landscape protection are influenced by several factors as follows: values and beliefs, interests and needs, knowledge and expertise, power dynamics, trust and relationships, and external influences (Table 5). These factors highlight the importance of considering stakeholders' preferences and perceptions when developing landscape protection policies and projects.

### 3.6 Stakeholder decision-making process stages and framework

Stakeholder involvement and preferences in the decision-making process could play a pivotal role within a particular context. Several researchers emphasized the significance of stakeholder involvement processes in the decision-making process. For instance, Vo et al. (2023) have demonstrated that stakeholder involvement aims to comprehensively understand stakeholder

TABLE 5 Influencing factor of stakeholders' preference.

Factor	Description	References
Values or beliefs	Stakeholder preferences can be influenced by cultural, religious, or ethical factors, which shape their attitudes and priorities.	<ul style="list-style-type: none"> <li>• Eskerod (2020)</li> <li>• Sharpe et al. (2021)</li> <li>• Hölting et al. (2020)</li> <li>• Li et al. (2024)</li> </ul>
Interests and needs	Stakeholders may prioritize economic development or conservation, depending on their community or organizational affiliations.	<ul style="list-style-type: none"> <li>• Sharpe et al. (2021)</li> <li>• Keseru et al. (2021)</li> <li>• Li et al. (2024)</li> </ul>
Knowledge and expertise	Stakeholders' preferences may differ based on their level of scientific or technical expertise compared to those with limited knowledge or different expertise areas.	<ul style="list-style-type: none"> <li>• Sharpe et al. (2021)</li> <li>• Colvin et al. (2016)</li> <li>• Suldovsky et al. (2017)</li> <li>• Newig et al. (2017)</li> <li>• Githiora-Murimi et al. (2022)</li> <li>• Li et al. (2024)</li> </ul>
Power dynamics	Stakeholders with greater power and influence tend to shape preferences to align with their interests, while marginalized or less powerful stakeholders may have limited influence in the decision-making process.	<ul style="list-style-type: none"> <li>• Wondirad et al. (2020)</li> <li>• Colvin et al. (2016)</li> <li>• Vargas-Payera et al. (2020)</li> <li>• de Castro-Pardo et al. (2019)</li> <li>• Li et al. (2024)</li> </ul>
Trust and relationships	The level of trust between stakeholders and decision-makers, as well as among different stakeholder groups, can significantly impact preferences, and trusting relationships foster cooperation and shared preferences, while lacking trust can lead to conflicts and divergent preferences.	<ul style="list-style-type: none"> <li>• Dale et al. (2019)</li> <li>• Wondirad et al. (2020)</li> <li>• Kizos et al. (2018)</li> <li>• Reed et al. (2018)</li> <li>• Baumfield (2016)</li> <li>• De Vente et al. (2016)</li> <li>• Li et al. (2024)</li> </ul>
External influences	Stakeholder preferences can be shaped by external factors such as laws, regulations, policies, and societal norms. These external influences provide a broader context for stakeholders to consider when forming their preferences.	<ul style="list-style-type: none"> <li>• Sharpe et al. (2021)</li> <li>• Colvin et al. (2016)</li> <li>• Githiora-Murimi et al. (2022)</li> <li>• Li et al. (2024)</li> </ul>

TABLE 6 Stakeholder decision-making process stages.

	Stages	Description
1	Setting objectives and goal	Defines the goals and objectives of landscape protection, which may include conserving biodiversity, maintaining ecosystem services, or preserving cultural heritage.
2	Information gathering	Collect relevant data, research, and information about the goals and objectives of the landscape, its ecological systems, factors or requirements influencing stakeholders, and information about the stakeholders.
3	Stakeholder involvement and perception	Regarding stakeholder involvement, it involves identifying the approach and identifying all relevant stakeholders who have an interest in or may be affected by landscape protection decisions. As for stakeholder perception, they are the data extracted from stakeholders using specific methods and factors for landscape protection decisions.
4	Analysis and evaluation	Stakeholder perception output and data are analyzed to assess various options and their potential impacts. This may include designating challenges and the implications of inclusive governance for protecting landscapes.
5	Decision-making	Based on the analysis of stakeholder output and the evaluation of protection options, decisions are made about the specific measures to be taken for landscape protection. This decision may involve protection regulations, conservation agreements, or other actions.
6	Implementation	Once a decision is reached, it is put into action. This stage involves planning and allocating resources for implementing the chosen protection measures.
7	Monitoring and review	Continuously monitor the landscape to assess the effectiveness of protective measures and their impacts on the ecosystem, cultural heritage, and community well-being.
8	Documentation	Once the decision has been fully implemented and its impacts assessed, the decision-making process is concluded, and the information learned from landscape protection efforts is documented for future reference.

characteristics and their effectiveness in guiding ecosystem decision-making processes by assessing participants' preferences. Moreover, [Reed et al. \(2018\)](#) found that the opinions of stakeholder experts and public involvement could be a useful resource in the landscape of managing decisions. Additionally, [Kuller et al. \(2023\)](#) have shown that stakeholder preferences are valuable and central to performing multi-criteria decision-making analytical processes, contributing to the understanding of stakeholders' perspectives and shaping decisions. [Uribe et al. \(2014\)](#) confirmed the significance of incorporating diverse stakeholders and their preferences to ensure awareness in decision-making and secure long-term support. Stakeholders' preferences reflect a range of perspectives, and it is precisely for this reason that decision-makers can facilitate dialogue, build consensus, and find mutually beneficial solutions by involving stakeholders in the decision-making process ([Du et al., 2019](#)). Also, information regarding stakeholder involvement and preferences has implications for managers seeking effective decision-making procedures ([Hauck et al., 2013](#)). Therefore, Stakeholder involvement and preferences are significant factors that can influence the effectiveness of decision-making procedures and contribute to inclusive governance for landscape protection.

Stakeholder involvement and perception seek to create meaningful dialogue, build relationships, and actively involve stakeholders throughout the decision-making process, which includes eight stages as follows: setting objectives and goals, information gathering, stakeholder involvement and perception, analysis and evaluation, decision-making, implementation, monitoring and review, and documentation ([Lemke and Harris-Wai, 2015](#)) (Table 6). Although these stages appear sequential, beginning with setting objectives and goals and concluding with documentation, decision-making rarely follows a linear structure in practice (Figure 3). The specific stages and their order may vary depending on the context, but these steps provide a general framework for stakeholder decision-making in landscape

protection. It is essential to involve all relevant stakeholders and promote collaboration to achieve the common goal of preserving and protecting natural landscapes.

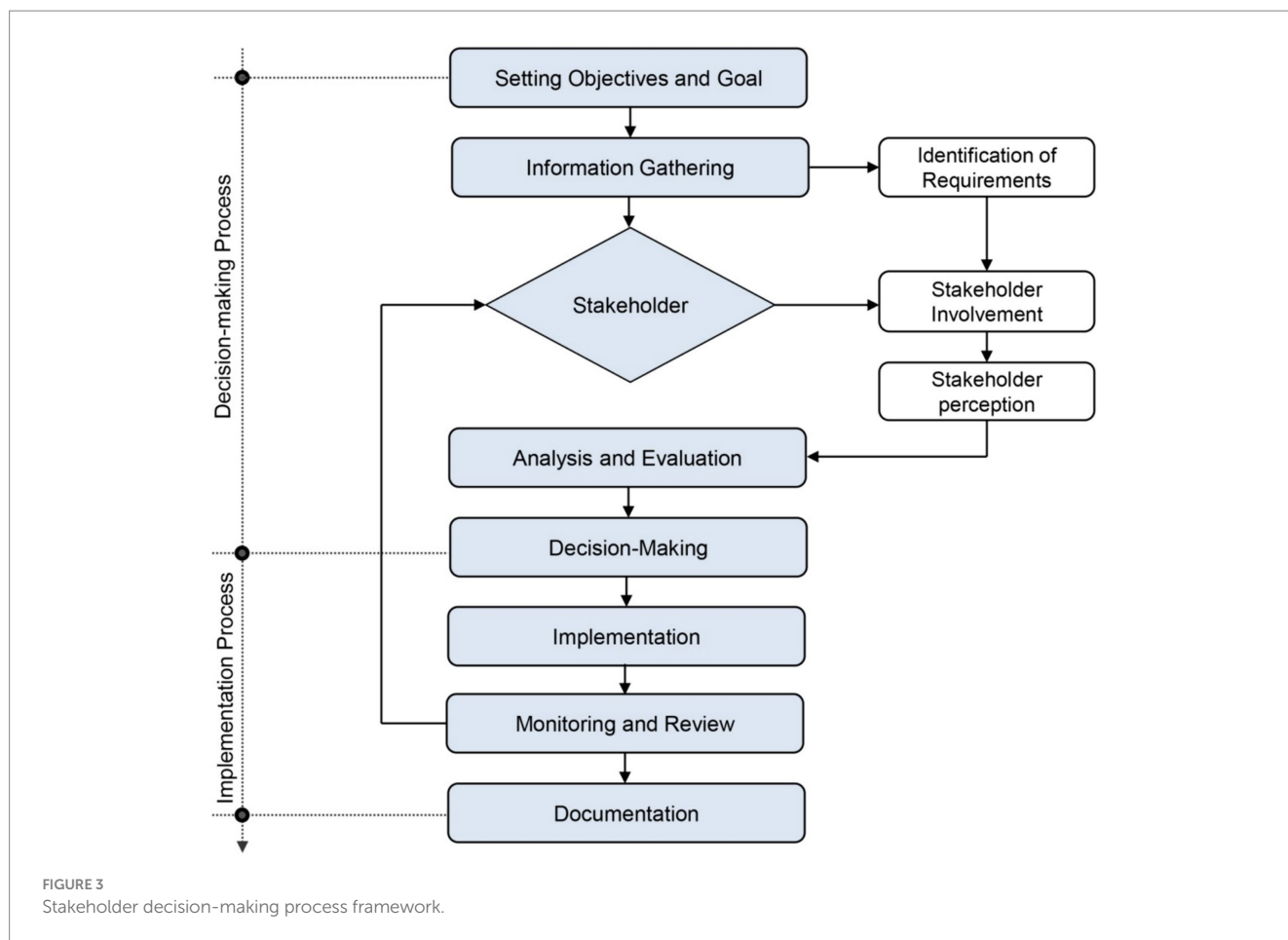
## 4 Discussion

### 4.1 Importance of the stakeholder concept and theory in landscape protection decision-making

The stakeholder concept, popularized by [Freeman \(1984\)](#), emerged as businesses faced unprecedented environmental turbulence. While this concept has gained prominence, gaps remain in understanding stakeholders' roles in landscape protection decision-making. This research defines landscape protection stakeholders as individuals or groups interested in landscape management whose opinions are essential for effective landscape protection, consistent with [De Meo et al. \(2018\)](#).

Stakeholder theory, originating in business ethics and organizational management, underscores the importance of considering the well-being of diverse stakeholders. This theory provides the basis for actively involving stakeholders in landscape protection, emphasizing the need to benefit a wide range of stakeholders while incorporating moral and profit-oriented considerations. It enables organizations to adopt a strategic approach that enhances value creation and ensures long-term prosperity and sustainability, consistent with [Mahajan et al. \(2023\)](#).

Stakeholder approaches in landscape protection provide a framework for understanding complex environments and assessing the implications of protection policies. They foster societal mobilization and lead to favorable outcomes. Stakeholders are classified into two main groups: internal and external. Internal stakeholders, or "expert stakeholders," include managers,



government employees, and trade unions. External stakeholders, or “public stakeholders,” encompass the general public, including local communities and residents. Both groups have benefits and challenges, highlighting the need for a balanced decision-making process that considers various perspectives and contributes to landscape protection and sustainability, consistent with [Taghian et al. \(2015\)](#).

In summary, the stakeholder concept and theory have transformed decision-making by recognizing stakeholder interests. Applied to landscape protection, they offer a valuable framework for informed and inclusive decision-making, ultimately contributing to sustainable practices.

## 4.2 Fundamental aspects of stakeholder involvement in landscape protection decision-making

Stakeholder involvement in landscape protection is a critical component of successful decision-making and governance in an era of growing environmental concerns. It recognizes that environmental problems cannot be addressed by the government alone and emphasizes the importance of involving those who have a stake in the outcomes of landscape protection decisions ([Niedziałkowski et al., 2016](#)). This inclusiveness enhances transparency, accountability, and legitimacy, leading to more effective environmental governance ([Dale](#)

[et al., 2019](#)). Stakeholder involvement is based on principles of inclusiveness, equity, and social justice, ensuring that various perspectives are integrated into the decision-making process.

Stakeholder involvement is a multifaceted concept, and different studies approach it from various perspectives. These approaches range from protecting community interests to engaging scientists and decision-makers in co-producing knowledge for environmental decisions. Despite these different approaches, stakeholder involvement is seen as a form of public stakeholders’ empowerment, as well as being a crucial aspect of landscape protection governance; this finding is consistent with the findings of [Nasr-Azadani et al. \(2022\)](#). In this view, this study identifies the involved stakeholders with regard to landscape protection governance as the following: businesses/operators, local communities/residents, managers/local policymakers, protection groups/NGOs, and tourists, which is consistent with [Sautter and Leisen \(1999\)](#).

Stakeholder involvement is distinct from public involvement as it goes beyond consulting and informing the public, and its benefits to landscape protection are substantial. It enhances the acceptability and sustainability of initiatives, fostering a sense of ownership and trust among stakeholders. It promotes social equity, cohesion, and better decision-making, increasing the legitimacy and transparency of the process while also contributing to capacity development and empowerment. Stakeholder involvement can lead to economic efficiency and cost savings, ultimately improving landscape management and sustainability; this is consistent with [Paletto et al.](#)

(2015). However, stakeholder involvement is not without risks. Conflicts, opposition, accountability issues, and frustration can arise during the involvement process if not managed effectively. These risks can be mitigated through negotiation, early involvement, clear communication, and transparency. Moreover, when it comes to managing the risks associated with stakeholder involvement, effective mitigation measures and multi-stakeholder partnership methods can help ensure that the benefits outweigh the potential downsides, ultimately contributing to the long-term success of landscape protection efforts, which is consistent with Niřa et al. (2015).

### 4.3 Importance of stakeholders' preferences in landscape protection decision-making

Understanding stakeholders' preferences is essential to ensure the incorporation of community needs and desires, enabling the prioritization of ecosystems and the development of conservation programs that align with well-being and ecosystem health. Stakeholder preferences can evolve over time and under different conditions, making it complex and dynamic. It is worth noting that stakeholder preferences are subjective and could be influenced by various factors, including cultural backgrounds, expertise levels, and the context of their engagement with the landscape (Mundher et al., 2022c, 2023b). Consequently, investigating stakeholder preferences for incorporation into the decision-making process is complex, as it involves considering multiple subjective viewpoints and dimensions.

To take into account stakeholders' preferences in landscape protection decisions, a comprehensive and multifaceted approach is essential. This involves framing landscape decision-making as a governance process and creating spaces for stakeholders to express their knowledge and values. Direct engagement with stakeholders through field interviews, focus groups, and various participation methods provides negotiation spaces; this is consistent with Schneider et al. (2021). Additionally, using a combination of methods and meaningful stakeholder involvement strategies is crucial to gaining a comprehensive understanding of their preferences. Furthermore, these preferences are influenced by factors such as values, interests, knowledge, power dynamics, trust, and external influences. Recognizing and understanding these factors are crucial when involving stakeholders and incorporating their preferences into decision-making processes. By addressing these factors, decision-makers can navigate stakeholder dynamics, prevent conflicts, and develop more inclusive and effective landscape protection strategies; this is consistent with Githiora-Murimi et al. (2022).

In summary, recognizing and understanding the complexities of stakeholder preferences are vital for achieving landscape protection goals while maintaining the well-being of both stakeholders and the ecosystem.

### 4.4 Case studies in stakeholder involvement for landscape protection

Successful landscape protection and preservation require incorporating diverse stakeholder perspectives. This focus on

stakeholder involvement ensures that management strategies are not only effective but also consider the needs and values of local communities. Examining case studies from various contexts provides valuable insights into the different ways stakeholder engagement can be implemented.

One such case study involves forest landscape restoration in the Brazilian Atlantic Forest (Maioli et al., 2021). Researchers employed participatory approaches, conducting interviews and questionnaires with local stakeholders. This engagement not only revealed novel aspects of the landscape and landowner perspectives but also complemented the assessment process, ultimately leading to successful project outcomes. Importantly, stakeholder involvement ensured compliance with environmental protection laws, demonstrating the positive impact on achieving conservation goals.

Similarly, Cui and Fang (2023) explored stakeholder engagement in urban landscape renewal projects in Jigang, China. Their study utilized participatory mapping and interviews to assess perceived landscape values from various stakeholders. This approach proved to be an effective decision-making tool. Combining stakeholder views with participatory cartography ensured compatibility with existing conservation efforts and decision-making processes. Notably, this case study highlights how stakeholder engagement bridges the gap between top-down planning and on-the-ground needs, leading to more sustainable and inclusive urban landscape renewal projects.

Moving beyond restoration and renewal, Olasunmbo et al. (2021) investigated stakeholder involvement in developing cultural landscapes for tourism in Nigeria. Their study at the Osun Grove employed a mixed-methods approach, combining structured questionnaires with unstructured interviews. While quantitative data revealed a positive correlation between cultural landscape development and stakeholder contributions, qualitative analysis highlighted a need for increased stakeholder participation in decision-making processes. This case study underscores the importance not just of involving stakeholders but also of ensuring their meaningful participation throughout the process. Effective stakeholder engagement fosters a sense of ownership and enables local communities to contribute to the protection and sustainable management of cultural landscapes.

The complexities of managing multifunctional landscapes are evident in Baylan and Karadeniz (2018) research on Ekřisu Wetlands in Turkey. Their study emphasizes the necessity of stakeholder involvement in planning and management processes to address potential conflicts and prioritize both protection and improvement of the wetland landscape. By facilitating dialogue and understanding stakeholder perspectives, this case study demonstrates how collaboration can lead to the establishment of sustainable management strategies, prioritizing the wetland's regulatory and cultural functions.

These diverse case studies collectively showcase the multifaceted approaches to stakeholder involvement in landscape protection and preservation. Each case study offers valuable insights into the benefits of stakeholder engagement, including fostering successful project outcomes, ensuring compliance with environmental regulations, facilitating inclusive decision-making processes, and bridging the gap between top-down planning and local needs. By incorporating stakeholder perspectives, landscape protection efforts can be more sustainable, effective, and inclusive.



## 5 Limitations and future works

This review comprehensively analyzed existing research on stakeholder involvement in landscape protection decisions. However, the comprehensiveness of the findings is inherently limited by the chosen search keywords and the selected timeframe for the literature search. Relevant research articles published outside this timeframe or containing terminology not captured by the keywords might have fallen outside the inclusion criteria.

To gain a more nuanced understanding of stakeholder influence and the practical application of stakeholder involvement approaches, future research could explore several avenues. First, expanding the search strategy with a broader range of keywords and potentially including additional databases could capture a wider range of relevant research, including more case studies that exemplify stakeholder involvement in real-world settings. Second, delving deeper into the existing research through a bibliometric analysis could offer valuable insights. This analysis could identify the most researched aspects of stakeholder involvement, reveal prominent research trends, and shed light on the geographic distribution of the produced studies within the field.

The proposed framework for stakeholder involvement presents a valuable structure for decision-making processes. However, experimental and practical validation is necessary to ensure its effectiveness in real-world scenarios. Future research could involve implementing the framework in pilot studies or case studies, particularly those focusing on concrete examples like co-management arrangements in Protected Areas. This would allow for assessing the framework's effectiveness in facilitating the co-production of knowledge, methods, and approaches in response to environmental challenges. By incorporating these case studies in more depth, the research could go beyond the conceptual level and resonate with a broader audience.

By addressing these limitations through future research, we can further strengthen our understanding of stakeholder involvement, refine the proposed framework for more effective landscape protection decision-making, and provide practical guidance for implementing successful stakeholder engagement strategies. Additionally, this study lays the groundwork for future research to explore the proposed framework's specific policy implications.

## 6 Conclusion

This systematic review underscores the critical role of stakeholder involvement in achieving informed, sustainable, and inclusive landscape protection decisions. Integrating diverse perspectives fosters the development of more effective and efficient conservation programs. Collaboration with stakeholders, for instance, can lead to identifying novel environmental threats or developing culturally sensitive solutions that address the root causes of environmental degradation. Furthermore, stakeholder involvement enhances social equity by ensuring a fair distribution of burdens and benefits associated with conservation efforts. Including stakeholder voices in decision-making ensures that traditional knowledge is respected and communities benefit from protected landscapes. Moreover,

stakeholder involvement increases program legitimacy and long-term sustainability. When stakeholders feel ownership over conservation decisions, compliance with regulations and program success are more likely. Collaborative management of protected areas exemplifies this principle, where local communities work alongside authorities for effective conservation. Traditional top-down approaches may struggle with contemporary environmental complexities, highlighting the need for collaborative governance frameworks. Top-down approaches fail to consider local knowledge and expertise, which can lead to impractical, culturally insensitive solutions.

By systematically synthesizing the available research, this review identified a critical gap in the literature, which is the lack of a conceptual framework for integrating stakeholder preferences. To address this gap, the study proposes a novel, multi-stage conceptual framework. This framework offers a structured and adaptable approach encompassing key stages, namely, objective setting with stakeholder input and information gathering, which is essential for real-world applications through methods such as surveys and interviews, collaborative decision-making, and implementation of multi-stakeholder action plans. By acknowledging the multifaceted nature of stakeholder preferences, namely, values, interests, knowledge, power dynamics, trust, and external influences, the framework empowers decision-makers to consider diverse perspectives. This leads to more informed prioritization, the development of effective and equitable conservation programs, and the fostering of social cohesion. This review not only presents a valuable tool – the framework – but also highlights the ongoing need for collaborative governance and continuous refinement of stakeholder involvement practices. Effective integration of stakeholder preferences, facilitated by the framework's structure, is crucial for achieving sustainable and equitable solutions that ensure the long-term preservation of natural landscapes and the well-being of dependent communities.

## Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

## Author contributions

YL: Conceptualization, Data curation, Investigation, Methodology, Project administration, Visualization, Writing – original draft. NA: Conceptualization, Investigation, Supervision, Validation, Writing – review & editing. NI: Supervision, Validation, Writing – review & editing. NM: Supervision, Validation, Writing – review & editing. RM: Data curation, Formal analysis, Investigation, Methodology, Writing – original draft.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fcomm.2024.1340026/full#supplementary-material>

## References

- Ackoff, R. L. (1956). The development of operations research as a science. *Oper. Res.* 4, 265–295. doi: 10.1287/opre.4.3.265
- Ackoff, R. L. (1974). Redesigning the future. Available at: [https://scholar.google.com/scholar\\_lookup?title](https://scholar.google.com/scholar_lookup?title)
- Akhmouch, A., and Clavreul, D. (2016). Stakeholder engagement for inclusive water governance: “practicing WhatWe preach” with the OECD water governance initiative. *Water* 8, 1–17. doi: 10.3390/w8050204
- Allain, S., and Salliou, N. (2022). Making differences legible: incommensurability as a vehicle for sustainable landscape management. *Ecol. Econ.* 191:107240. doi: 10.1016/j.ecolecon.2021.107240
- Ansoff, H. I. (1965). *The concept of strategy*. New York: McGraw-Hill.
- Antognelli, S., and Vizzari, M. (2017). Landscape liveability spatial assessment integrating ecosystem and urban services with their perceived importance by stakeholders. *Ecol. Indic.* 72, 703–725. doi: 10.1016/j.ecolind.2016.08.015
- Avanzini, M., Bussolon, S., Caporusso, L., Gios, G., and Goio, I. (2016). Landscape conservation: the perspectives of experts and other stakeholders. *J. Landsc. Ecol.* 9, 5–28. doi: 10.1515/jlecol-2016-0006
- Ayuso, S., Rodríguez, M. A., García-Castro, R., and Ariño, M. A. (2014). Maximizing stakeholders' interests: an empirical analysis of the stakeholder approach to corporate governance. *Bus. Soc.* 53, 414–439. doi: 10.1177/0007650311433122
- Baránková, Z., and Špulerová, J. (2023). Human-nature relationships in defining biocultural landscapes: a systematic review. *Ekol. Bratisl.* 42, 64–74. doi: 10.2478/eko-2023-0008
- Baumfield, V. (2016). Stakeholder theory from a management perspective: bridging the shareholder/stakeholder divide. *Aust. J. Corp. Law* 31, 187–207.
- Baylan, E., and Karadeniz, N. (2018). Identifying landscape values and stakeholder conflicts for the protection of landscape multifunctionality: the case of ekŞisu wetlands (Turkey). *Appl. Ecol. Environ. Res.* 16, 199–223. doi: 10.15666/aer/1601\_199223
- Bellantuono, N., Pontrandolfo, P., and Scozzi, B. (2016). Capturing the stakeholders' view in sustainability reporting: a novel approach. *Sustain. For.* 8:379. doi: 10.3390/su8040379
- Berkes, F. (2004). Knowledge, learning and the resilience of social-ecological systems. Digital library of the commons repository, (august), 1–17. Available at: <http://dlc.dlib.indiana.edu/dlc/handle/10535/2385>
- Bloomfield, G., Meli, P., Brancalion, P. H. S., Terris, E., Guariguata, M. R., and Garen, E. (2019). Strategic insights for capacity development on Forest landscape restoration: implications for addressing global commitments. *Trop. Conserv. Sci.* 12:194008291988758. doi: 10.1177/1940082919887589
- Branco, P. S., Merkle, J. A., Pringle, R. M., King, L., Tindall, T., Stalmans, M., et al. (2020). An experimental test of community-based strategies for mitigating human-wildlife conflict around protected areas. *Conserv. Lett.* 13, 1–8. doi: 10.1111/conl.12679
- Brescancin, F., Dobšinská, Z., De Meo, I., Šálka, J., and Paletto, A. (2018). Analysis of stakeholders' involvement in the implementation of the Natura 2000 network in Slovakia. *Forest Policy Econ.* 89, 22–30. doi: 10.1016/j.forpol.2017.03.013
- Brunetti, F., Matt, D. T., Bonfanti, A., De Longhi, A., Pedrini, G., and Orzes, G. (2020). Digital transformation challenges: strategies emerging from a multi-stakeholder approach. *TQM J.* 32, 697–724. doi: 10.1108/TQM-12-2019-0309
- Burns, G. L., and Haraldsdóttir, L. (2019). Hydropower and tourism in Iceland: visitor and operator perspectives on preferred use of natural areas. *J. Outdoor Recreat. Tour.* 25, 91–101. doi: 10.1016/j.jort.2018.09.003
- Chang, P. J. (2020). Effects of the built and social features of urban greenways on the outdoor activity of older adults. *Landsc. Urban Plan.* 204:103929. doi: 10.1016/j.landurbplan.2020.103929
- Chang, J. P., Chen, Z. S., Wang, X. J., Martínez, L., Pedrycz, W., and Skibniewski, M. J. (2023). Requirement-driven sustainable supplier selection: creating an integrated perspective with stakeholders' interests and the wisdom of expert crowds. *Comput. Ind. Eng.* 175:108903. doi: 10.1016/j.cie.2022.108903
- Chazdon, R. L., Wilson, S. J., Brondizio, E., Guariguata, M. R., and Herbohn, J. (2021). Key challenges for governing forest and landscape restoration across different contexts. *Land Use Policy* 104:104854. doi: 10.1016/j.landusepol.2020.104854
- Choe, Y., and Schuett, M. A. (2020). Stakeholders' perceptions of social and environmental changes affecting Everglades National Park in South Florida. *Environ. Dev.* 35:100524. doi: 10.1016/j.envdev.2020.100524
- Chreptun, C., Ficko, A., Gosling, E., and Knoke, T. (2023). Optimizing forest landscape composition for multiple ecosystem services based on uncertain stakeholder preferences. *Sci. Total Environ.* 857:159393. doi: 10.1016/j.scitotenv.2022.159393
- Chuamuangphan, N. (2016). The potential of Hot Springs in the Western Thailand for health tourism and sustainability. *Econ. World* 4, 147–156. doi: 10.17265/2328-7144/2016.04.001
- Churchman, C. W. (1979). The systems approach and its enemies. Available at: <https://lccn.loc.gov/78019937>
- Cohen, M., Wiek, A., Kay, B., and Harlow, J. (2015). Aligning public participation to stakeholders' sustainability literacy—a case study on sustainable urban development in Phoenix, Arizona. *Sustain. For.* 7, 8709–8728. doi: 10.3390/su7078709
- Cole, B., Bradley, A. V., Willcock, S., Gardner, E., Allinson, E., Hagen-Zanker, A., et al. (2023). Using a multi-lens framework for landscape decisions. *People Nat.* 5, 1050–1071. doi: 10.1002/pan3.10474
- Colvin, R. M., Witt, G. B., and Lacey, J. (2016). Approaches to identifying stakeholders in environmental management: insights from practitioners to go beyond the “usual suspects”. *Land Use Policy* 52, 266–276. doi: 10.1016/j.landusepol.2015.12.032
- Colvin, R. M., Witt, G. B., and Lacey, J. (2020). Power, perspective, and privilege: the challenge of translating stakeholder theory from business management to environmental and natural resource management. *J. Environ. Manag.* 271:110974. doi: 10.1016/j.jenvman.2020.110974
- Conrad, E., Fazey, I., Christie, M., and Galdies, C. (2019). Choosing landscapes for protection: comparing expert and public views in Gozo, Malta. *Landsc. Urban Plan.* 191:103621. doi: 10.1016/j.landurbplan.2019.103621
- Cronan, D., Trammell, E. J., and Kliskey, A. (2022). Images to evoke decision-making: building compelling representations for stakeholder-driven futures. *Sustain. For.* 14:2980. doi: 10.3390/su14052980
- Cui, Y., and Fang, W. (2023). Research on the spatial perception of stakeholders in brownfield redevelopment based on value compatibility analysis. *Appl. Sci.* 13:620. doi: 10.3390/app13010620
- Dale, V. H., Kline, K. L., Parish, E. S., and Eichler, S. E. (2019). Engaging stakeholders to assess landscape sustainability. *Landsc. Ecol.* 34, 1199–1218. doi: 10.1007/s10980-019-00848-1
- Davis, K. (2016). A method to measure success dimensions relating to individual stakeholder groups. *Int. J. Proj. Manag.* 34, 480–493. doi: 10.1016/j.ijproman.2015.12.009
- Dawkins, C. (2015). Agonistic pluralism and stakeholder engagement. *Bus. Ethics Q.* 25, 1–28. doi: 10.1017/beq.2015.2
- de Castro-Pardo, M., Pérez-Rodríguez, F., Martín-Martín, J. M., and Azevedo, J. C. (2019). Modelling stakeholders' preferences to pinpoint conflicts in the planning of transboundary protected areas. *Land Use Policy* 89:104233. doi: 10.1016/j.landusepol.2019.104233
- de Gooyert, V., Rouwette, E., van Kranenburg, H., and Freeman, E. (2017). Reviewing the role of stakeholders in operational research: a stakeholder theory perspective. *Eur. J. Oper. Res.* 262, 402–410. doi: 10.1016/j.ejor.2017.03.079
- De Meo, I., Cantiani, M. G., Ferretti, F., and Paletto, A. (2018). Qualitative assessment of forest ecosystem services: the stakeholders' point of view in support of landscape planning. *Forests* 9, 1–16. doi: 10.3390/f9080465

- De Vente, J., Reed, M. S., Stringer, L. C., Valente, S., and Newig, J. (2016). How does the context and design of participatory decision making processes affect their outcomes? Evidence from sustainable land management in global drylands. *Ecol. Soc.* 21:224. doi: 10.5751/ES-08053-210224
- Donaldson, T., and Preston, L. E. (1995). The stakeholder theory of the Corporation: concepts, evidence, and implications. *Acad. Manag. Rev.* 20, 65–91. doi: 10.5465/amr.1995.9503271992
- Doyle-Capitman, C. E., Decker, D. J., and Jacobson, C. A. (2018). Toward a model for local stakeholder participation in landscape-level wildlife conservation. *Hum. Dimens. Wildl.* 23, 375–390. doi: 10.1080/10871209.2018.1444215
- Du, Y., Wang, X., Zhang, L., Feger, K. H., Popp, J., and Sharpley, A. (2019). Multi-stakeholders' preference for best management practices based on environmental awareness. *J. Clean. Prod.* 236:117682. doi: 10.1016/j.jclepro.2019.117682
- Enengle, B., Penker, M., and Muhar, A. (2014). Landscape co-management in Austria: the stakeholder's perspective on efforts, benefits and risks. *J. Rural. Stud.* 34, 223–234. doi: 10.1016/j.jrurstud.2014.02.003
- Escaron, A. L., Weir, R. C., Stanton, P., and Clarke, R. M. (2015). Defining and rating the effectiveness of enabling services using a multi-stakeholder expert panel approach. *J. Health Care Poor Underserved* 26, 554–576. doi: 10.1353/hpu.2015.0035
- Eskerod, P. (2020). A stakeholder perspective: origins and Core concepts. *Oxford Res. Encycl. Bus. Manag.*, 1–31. doi: 10.1093/acrefore/9780190224851.013.3
- Eskerod, P., Huemann, M., and Ringhofer, C. (2016). Stakeholder inclusiveness: enriching Project Management with general stakeholder theory. *Proj. Manag. J.* 46, 42–53. doi: 10.1002/pmj.21546
- Ferreira, V., Barreira, A. P., Loures, L., Antunes, D., and Panagopoulos, T. (2020). Stakeholders' engagement on nature-based solutions: a systematic literature review. *Sustain. For.* 12, 1–27. doi: 10.3390/su12020640
- Foelske, L., and van Riper, C. J. (2020). Assessing spatial preference heterogeneity in a mixed-use landscape. *Appl. Geogr.* 125:102355. doi: 10.1016/j.apgeog.2020.102355
- Forsyth, T., and Springate-Baginski, O. (2021). Are landscape approaches possible under authoritarianism? Multi-stakeholder governance and social transformation in Myanmar. *Environ Sci Policy* 124, 359–369. doi: 10.1016/j.envsci.2021.07.010
- Freeman, R. E. (1984). A stakeholder approach to strategic management. Available at: [https://scholar.google.com/scholar\\_lookup?title=Strategic.management&publication\\_year=1979&author=1](https://scholar.google.com/scholar_lookup?title=Strategic.management&publication_year=1979&author=1)
- Freeman, R. E. E., and McVea, J. (2001). A stakeholder approach to strategic management. *Darden Grad. Sch. Bus. Admin.* 77, 671–677. doi: 10.2139/ssrn.263511
- Gao, H., Abu Bakar, S., Maulan, S., Mohd Yusof, M. J., Mundher, R., and Zakariya, K. (2023). Identifying visual quality of rural road landscape character by using public preference and Heatmap analysis in Sabak Bernam, Malaysia. *Land* 12, 1–27. doi: 10.3390/land12071440
- Garau, E., Torralba, M., and Pueyo-Ros, J. (2021). What is a river basin? Assessing and understanding the sociocultural mental constructs of landscapes from different stakeholders across a river basin. *Landscape Urban Plan.* 214:104192. doi: 10.1016/j.landurbplan.2021.104192
- García-Nieto, A. P., Huland, E., Quintas-Soriano, C., Iniesta-Arandia, I., García-Llorente, M., Palomo, I., et al. (2019). Evaluating social learning in participatory mapping of ecosystem services. *Ecosyst. People* 15, 257–268. doi: 10.1080/26395916.2019.1667875
- García-Nieto, A. P., Quintas-Soriano, C., García-Llorente, M., Palomo, I., Montes, C., and Martín-López, B. (2015). Collaborative mapping of ecosystem services: the role of stakeholders' profiles. *Ecosyst. Serv.* 13, 141–152. doi: 10.1016/j.ecoser.2014.11.006
- Gerlak, A. K., Guido, Z., Owen, G., McGoffin, M. S. R., Louder, E., Davies, J., et al. (2023). Stakeholder engagement in the co-production of knowledge for environmental decision-making. *World Dev.* 170:106336. doi: 10.1016/j.worlddev.2023.106336
- Githiora-Murimi, Y. W., Owuor, M. A., Abila, R., Olago, D., and Oriaso, S. (2022). Integrating stakeholder preferences into ecosystem services mapping in Yala wetland, Kenya. *Ecosyst. People* 18, 146–163. doi: 10.1080/26395916.2022.2039774
- Goodson, D. J., van Riper, C. J., Andrade, R., Cebrián-Piqueras, M. A., and Hauber, M. E. (2022). Perceived inclusivity and trust in protected area management decisions among stakeholders in Alaska. *People and Nat.* 4, 758–772. doi: 10.1002/pan3.10312
- Hauck, J., Görg, C., Varjopuro, R., Ratamáki, O., and Jax, K. (2013). Benefits and limitations of the ecosystem services concept in environmental policy and decision making: some stakeholder perspectives. *Environ Sci Policy* 25, 13–21. doi: 10.1016/j.envsci.2012.08.001
- Hörling, L., Komossa, F., Filyushkina, A., Gastingier, M. M., Verburg, P. H., Beckmann, M., et al. (2020). Including stakeholders' perspectives on ecosystem services in multifunctionality assessments. *Ecosyst. People* 16, 354–368. doi: 10.1080/26395916.2020.1833986
- Hossu, C. A., Oliveira, E., and Niță, A. (2022). Streamline democratic values in planning systems: a study of participatory practices in European strategic spatial planning. *Habitat Int.* 129:102675. doi: 10.1016/j.habitatint.2022.102675
- Imran, S., Alam, K., and Beaumont, N. (2014). Environmental orientations and environmental behaviour: perceptions of protected area tourism stakeholders. *Tour. Manag.* 40, 290–299. doi: 10.1016/j.tourman.2013.07.003
- Jericó-Daminello, C., Schröter, B., Mancilla Garcia, M., and Albert, C. (2021). Exploring perceptions of stakeholder roles in ecosystem services coproduction. *Ecosyst. Serv.* 51:101353. doi: 10.1016/j.ecoser.2021.101353
- Jewell, K., Peterson, M. N., Martin, M., Stevenson, K. T., Terando, A., and Teseneer, R. (2023). Conservation decision makers worry about relevancy and funding but not climate change. *Wildl. Soc. Bull.* 47, 1–14. doi: 10.1002/wsb.1424
- Jokonya, O., Kroeze, J. A., and Van Der Poll, J. A. (2015). Investigating users' perception of stakeholder approach during IT adoption in organizations. *Proc. Comput. Sci.* 72, 244–251. doi: 10.1016/j.procs.2015.12.137
- Jones, T. M., and Wicks, A. C. (1999). Convergent stakeholder theory. *Acad. Manag. Rev.* 24, 206–221. doi: 10.2307/259075
- Kaplan, R. (1985). The analysis of perception via preference: a strategy for studying how the environment is experienced. *Landscape Plann.* 12, 161–176. doi: 10.1016/0304-3924(85)90058-9
- Keseru, I., Coosemans, T., and Macharis, C. (2021). Stakeholders' preferences for the future of transport in Europe: participatory evaluation of scenarios combining scenario planning and the multi-actor multi-criteria analysis. *Futures* 127:102690. doi: 10.1016/j.futures.2020.102690
- Khizar, H. M. U., Younas, A., Kumar, S., Akbar, A., and Poulouva, P. (2023). The progression of sustainable development goals in tourism: a systematic literature review of past achievements and future promises. *J. Innov. Knowl.* 8:100442. doi: 10.1016/j.jik.2023.100442
- Kizos, T., Plieninger, T., Iosifides, T., Garca-Martn, M., Girod, G., Karro, K., et al. (2018). Responding to landscape change: stakeholder participation and social capital in five European landscapes. *Land* 7:14. doi: 10.3390/land7010014
- Kubota, H., Hondo, H., Hienuki, S., and Kaieda, H. (2013). Determining barriers to developing geothermal power generation in Japan: societal acceptance by stakeholders involved in hot springs. *Energy Policy* 61, 1079–1087. doi: 10.1016/j.enpol.2013.05.084
- Kujala, J., Sachs, S., Leinonen, H., Heikkinen, A., and Laude, D. (2022). Stakeholder Engagement: Past, Present, and Future. *Bus. Soc.* 61, 1136–1196. doi: 10.1177/00076503211066595
- Kuller, M., Beutler, P., and Lienert, J. (2023). Preference change in stakeholder group-decision processes in the public sector: extent, causes and implications. *Eur. J. Oper. Res.* 308, 1268–1285. doi: 10.1016/j.ejor.2022.12.001
- Kusters, K., Buck, L., de Graaf, M., Minang, P., van Oosten, C., and Zagt, R. (2018). Participatory planning, monitoring and evaluation of multi-stakeholder platforms in integrated landscape initiatives. *Environ. Manag.* 62, 170–181. doi: 10.1007/s00267-017-0847-y
- Kusters, K., De Graaf, M., Buck, L., Galido, K., Maindo, A., Mendoza, H., et al. (2020). Inclusive landscape governance for sustainable development: assessment methodology and lessons for civil society organizations. *Land* 9, 1–14. doi: 10.3390/LAND9040128
- Le, C. T. U., and Campbell, M. L. (2022). The schism between experts' and novices' values: working toward a collective approach to improve decision making in marine biosecurity. *Environ Sci Policy* 138, 11–19. doi: 10.1016/j.envsci.2022.09.016
- Lemke, A. A., and Harris-Wai, J. N. (2015). Stakeholder engagement in policy development: challenges and opportunities for human genomics. *Genet. Med.* 17, 949–957. doi: 10.1038/gim.2015.8
- Li, Y., Abu Bakar, N. A., Ismail, N. A., Mohd Ariffin, N. F., and Mundher, R. (2024). Experts' perspectives on inclusive governance for protecting hot spring landscapes in China: barriers and implications. *Sustain. For.* 16, 1–28. doi: 10.3390/su16072767
- Liu, H., Ren, H., Remme, R. P., Nong, H., and Sui, C. (2021). The effect of urban nature exposure on mental health—a case study of Guangzhou. *J. Clean. Prod.* 304:127100. doi: 10.1016/j.jclepro.2021.127100
- Liu, D., Xiao, H., and Lv, G. (2018). The research of agricultural landscape evolution in mountain area of southern Jinan based on stakeholder theory. *Int. J. Environ. Protect. Policy* 6:19. doi: 10.11648/j.ijep.20180601.14
- Lorenzini, J., Monsch, G. A., and Rosset, J. (2021). Challenging climate strikers' youthfulness: the evolution of the generational gap in environmental attitudes since 1999. *Front. Polit. Sci.* 3, 1–13. doi: 10.3389/fpos.2021.633563
- Louman, B., Shames, S., Pamerneckyte, G., Anshah, M. O., Koesoetjahjo, I., Nghi, T. H., et al. (2021). Understanding the impacts of financial flows in the landscape. *Land* 10:1261. doi: 10.3390/land10111261
- Lu, X., Liu, R., and Xia, L. (2023). Landscape planning and design and visual evaluation for landscape protection of geological environment. *J. King Saud Univ. Sci.* 35:102735. doi: 10.1016/j.jksus.2023.102735
- Mahajan, R., Lim, W. M., Sareen, M., Kumar, S., and Panwar, R. (2023). Stakeholder theory. *J. Bus. Res.* 166:114104. doi: 10.1016/j.jbusres.2023.114104
- Maioli, V., Monteiro, L. M., Tubenclak, F., Pepe, I. S., de Carvalho, Y. B., Gomes, F. D., et al. (2021). Local perception in Forest landscape restoration planning: a case study



- from the Brazilian Atlantic Forest. *Front. Ecol. Evol.* 9, 1–13. doi: 10.3389/fevo.2021.612789
- Martin, E. G., Costa, M. M., Egerer, S., and Schneider, U. A. (2021). Assessing the long-term effectiveness of nature-based solutions under different climate change scenarios. *Sci. Total Environ.* 794:148515. doi: 10.1016/j.scitotenv.2021.148515
- Mason, R. O., and Mitroff, I. I. (1981). Challenging strategic planning assumptions: theory, cases, and techniques. Available at: <https://cir.nii.ac.jp/crid/1130282272094666496>
- McDonald, S. L., Lewison, R. L., Roody, S. E., Kramer, R. J., Rigling-Gallagher, D., and Read, A. J. (2016). Comparing stakeholder perceptions with empirical outcomes from negotiated rulemaking policies: is participant satisfaction a proxy for policy success? *Mar. Policy* 73, 224–230. doi: 10.1016/j.marpol.2016.08.013
- McGrath, S. K., and Whitty, S. J. (2017). Stakeholder defined. *Int. J. Manag. Proj. Bus.* 10, 721–748. doi: 10.1108/IJMPB-12-2016-0097
- Milstein, T., and Castro-Sotomayor, J. (2020). Routledge handbook of ecocultural identity. 1st Edn. London: Routledge.
- Mitchell, R. K., Agle, B. R., and Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts. *Acad. Manag. Rev.* 22, 853–886. doi: 10.2307/259247
- Mitchell, J. R., Mitchell, R. K., Hunt, R. A., Townsend, D. M., and Lee, J. H. (2020). Stakeholder engagement, knowledge problems and ethical challenges. *J. Bus. Ethics* 175, 75–94. doi: 10.1007/s10551-020-04550-0
- Mitincu, C. G., Niță, M. R., Hossu, C. A., Iojă, I. C., and Nita, A. (2023). Stakeholders' involvement in the planning of nature-based solutions: a network analysis approach. *Environ Sci Policy* 141, 69–79. doi: 10.1016/j.envsci.2022.12.022
- Mitroff, I. I. (1983). Stakeholders of the Organizational Mind (1st ed). Available at: <https://cir.nii.ac.jp/crid/1130000797840399744>
- Mundher, R., Abu Bakar, S., Al-Helli, M., Gao, H., Al-Sharaa, A., Mohd Yusof, M. J., et al. (2022a). Visual aesthetic quality assessment of urban forests: a conceptual framework. *Urban Sci.* 6:79. doi: 10.3390/urbansci6040079
- Mundher, R., Abu Bakar, S., Aziz, A., Maulan, S., Mohd Yusof, M. J., Al-Sharaa, A., et al. (2023a). Determining the weightage of visual aesthetic variables for permanent urban Forest reserves based on the converging approach. *Forests* 14:669. doi: 10.3390/f14040669
- Mundher, R., Abu Bakar, S., Maulan, S., Gao, H., Mohd Yusof, M. J., Aziz, A., et al. (2023b). Identifying suitable variables for visual aesthetic quality assessment of permanent Forest reserves in the Klang Valley urban area, Malaysia. *Urban Sci.* 7:92. doi: 10.3390/urbansci7030092
- Mundher, R., Abu Bakar, S., Maulan, S., Mohd Yusof, M. J., Al-Sharaa, A., Aziz, A., et al. (2022b). Aesthetic quality assessment of landscapes as a model for urban Forest areas: a systematic literature review. *Forests* 13:991. doi: 10.3390/f13070991
- Mundher, R., Abu Bakar, S., Maulan, S., Mohd Yusof, M. J., Osman, S., Al-Sharaa, A., et al. (2022c). Exploring awareness and public perception towards the importance of visual aesthetics for preservation of permanent Forest reserve (PFR) in Malaysia. *Land* 11:1280. doi: 10.3390/land11081280
- Nasr-Azadani, E., Wardrop, D., and Brooks, R. (2022). Is the rapid development of visualization techniques enhancing the quality of public participation in natural resource policy and management? A systematic review. *Landsc. Urban Plan.* 228:104586. doi: 10.1016/j.landurbplan.2022.104586
- Newig, J., Challies, E. D., Jager, N. W., Kochskaemper, E., and Adzersen, A. (2017). The environmental performance of participatory and collaborative governance: a framework of causal mechanisms. *Policy Stud. J.* 46, 269–297. doi: 10.1111/psj.12209
- Niedzialkowski, K., Pietrzyk-Kaszyńska, A., Pietruczuk, M., and Grodzińska-Jurczak, M. (2016). Assessing participatory and multi-level characteristics of biodiversity and landscape protection legislation: the case of Poland. *J. Environ. Plan. Manag.* 59, 1891–1911. doi: 10.1080/09640568.2015.1100982
- Nishi, M., and Hashimoto, S. (2022). Health and landscape approaches: a comparative review of integrated approaches to health and landscape management. *Environ Sci Policy* 136, 314–325. doi: 10.1016/j.envsci.2022.06.015
- Niță, A., Buttler, A., Rozyłowicz, L., and Pătru-Stupariu, I. (2015). Perception and use of landscape concepts in the procedure of environmental impact assessment: case study-Switzerland and Romania. *Land Use Policy* 44, 145–152. doi: 10.1016/j.landusepol.2014.12.006
- Nita, A., Fineran, S., and Rozyłowicz, L. (2022). Researchers' perspective on the main strengths and weaknesses of environmental impact assessment (EIA) procedures. *Environ. Impact Assess. Rev.* 92:106690. doi: 10.1016/j.eiar.2021.106690
- Ogawa, K., Garrod, G., and Yagi, H. (2023). Sustainability strategies and stakeholder management for upland farming. *Land Use Policy* 131:106707. doi: 10.1016/j.landusepol.2023.106707
- Olasunmbo, A., Joseph, F., and Dorcas, A. (2021). Stakeholders involvement in the development of cultural landscapes for stakeholders involvement in the development of cultural landscapes for tourism development: a case of Osun grove, Osogbo. *Am. J. Tour. Manag.* 10, 17–24. doi: 10.5923/j.tourism.20211002.01
- Olofsson, K. L., Selvakumar, P. P., Peach, K., Leon-Corwin, M., Stormer, S. A., Gupta, K., et al. (2023). Effective stakeholder engagement in environmental problem-solving through group model building: an Oklahoma case study. *Environ. Challng.* 13:100755. doi: 10.1016/j.envc.2023.100755
- Omoding, J., Walters, G., Andama, E., Carvalho, S., Colomer, J., Cracco, M., et al. (2020). Analysing and applying stakeholder perceptions to improve protected area governance in Ugandan conservation landscapes. *Land* 9:207. doi: 10.3390/LAND9060207
- Opoku, A., Cruickshank, H., Guthrie, P., and Georgiadou, M. C. (2014). Stakeholder engagement in research: the case of retrofit 2050 research project. Proceedings 30th Annual Association of Researchers in Construction Management Conference, 237–246.
- Paletto, A., Hamunen, K., and De Meo, I. (2015). Social network analysis to support stakeholder analysis in participatory Forest planning. *Soc. Nat. Resour.* 28, 1108–1125. doi: 10.1080/08941920.2015.1014592
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., and Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm. Policy Ment. Health Serv. Res.* 42, 533–544. doi: 10.1007/s10488-013-0528-y
- Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., de Colle, S., and Purnell, L. (2010). Stakeholder theory: the state of the art. Cambridge: Cambridge University Press.
- Pătru-Stupariu, I., Tudor, C. A., Stupariu, M. S., Buttler, A., and Peringer, A. (2016). Landscape persistence and stakeholder perspectives: the case of Romania's Carpathians. *Appl. Geogr.* 69, 87–98. doi: 10.1016/j.apgeog.2015.07.015
- Payera, S. V. (2018). Understanding social acceptance of geothermal energy: case study for Araucania region, Chile. *Geothermics* 72, 138–144. doi: 10.1016/j.geothermics.2017.10.014
- Peck, M., and Khirfan, L. (2021). Improving the validity and credibility of the sociocultural valuation of ecosystem services in Amman, Jordan. *Ecol. Econ.* 189:107111. doi: 10.1016/j.ecolecon.2021.107111
- Peng, L. P. (2020). Understanding human-nature connections through landscape socialization. *Int. J. Environ. Res. Public Health* 17, 1–18. doi: 10.3390/ijerph17207593
- Phillips, R., Freeman, R. E., and Wicks, A. C. (2003). What stakeholder theory is not. *Corp. Soc. Responsibil.* 13, 479–502. doi: 10.5840/beq200313434
- Qiu, J., Shen, Z., Chen, L., Xie, H., Sun, C., and Huang, Q. (2014). The stakeholder preference for best management practices in the three gorges reservoir region. *Environ. Manag.* 54, 1163–1174. doi: 10.1007/s00267-014-0324-9
- Rajablu, M., Marthandan, G., and Yusoff, W. F. W. (2014). Managing for stakeholders: the role of stakeholder-based management in project success. *Asian Soc. Sci.* 11, 111–125. doi: 10.5539/ass.v11n3p111
- Reed, J., Barlow, J., Carmenta, R., van Vianen, J., and Sunderland, T. (2019). Engaging multiple stakeholders to reconcile climate, conservation and development objectives in tropical landscapes. *Biol. Conserv.* 238:108229. doi: 10.1016/j.biocon.2019.108229
- Reed, J., Ickowitz, A., Chervier, C., Djoudi, H., Moombe, K., Ros-Tonen, M., et al. (2020). Integrated landscape approaches in the tropics: a brief stock-take. *Land Use Policy* 99:104822. doi: 10.1016/j.landusepol.2020.104822
- Reed, M. S., Vella, S., Challies, E., de Vente, J., Frewer, L., Hohenwallner-Ries, D., et al. (2018). A theory of participation: what makes stakeholder and public engagement in environmental management work? *Restor. Ecol.* 26, 7–17. doi: 10.1111/rec.12541
- Rhenman, E. (1973). Organization Theory for Long-Range Planning. Available at: <https://lccn.loc.gov/72005724>
- Roque, A. C., Veracini, C., and Brito, C. (2021). Shaping landscapes: thinking on the interactions between people and nature in inter- and Postdisciplinary narratives. *Humanities* 10, 1–9. doi: 10.3390/h10020075
- Ros-Tonen, M. A. F., Reed, J., and Sunderland, T. (2018). From synergy to complexity: the trend toward integrated value chain and landscape governance. *Environ. Manag.* 62, 1–14. doi: 10.1007/s00267-018-1055-0
- Ruiz, I., Pompeu, J., Ruano, A., Franco, P., Balbi, S., and Sanz, M. J. (2023). Combined artificial intelligence, sustainable land management, and stakeholder engagement for integrated landscape management in Mediterranean watersheds. *Environ Sci Policy* 145, 217–227. doi: 10.1016/j.envsci.2023.04.011
- Samstad, A., Sundberg, L., and Larsson, A. (2019). Assessing stakeholder preferences in urban planning - a multi-attribute utility approach. IEEE International Conference on Industrial Engineering and Engineering Management, 1417–1421.
- Sautter, E. T., and Leisen, B. (1999). Managing stakeholders: a tourism planning model. *Ann. Tour. Res.* 26, 312–328. doi: 10.1016/S0160-7383(98)00097-8
- Sayer, J., Margules, C., Boedihartono, A. K., Dale, A., Sunderland, T., Supriatna, J., et al. (2015). Landscape approaches; what are the pre-conditions for success? *Sustain. Sci.* 10, 345–355. doi: 10.1007/s11625-014-0281-5
- Scerri, K., and Attard, M. (2023). People as planners: stakeholder participation in the street experimentation process using a virtual urban living lab. *J. Urban Mobil.* 4:100063. doi: 10.1016/j.urbmob.2023.100063
- Schaltegger, S., Hörisch, J., and Freeman, R. E. (2017). Business cases for sustainability: a stakeholder theory perspective. *Organ. Environ.* 32, 191–212. doi: 10.1177/1086026617722882



- Schneider, J., Ruda, A., and Blahová, M. (2021). Stakeholders' perception of the impact of the declaration of new protected areas on the development of the regions concerned, case study: Czech republic. *Forests* 12:580. doi: 10.3390/f12050580
- Schweizer, D., van Kuijk, M., and Ghazoul, J. (2021). Perceptions from non-governmental actors on forest and landscape restoration, challenges and strategies for successful implementation across Asia, Africa and Latin America. *J. Environ. Manag.* 286:112251. doi: 10.1016/j.jenvman.2021.112251
- Scolobig, A., and Lilliestam, J. (2016). Comparing approaches for the integration of stakeholder perspectives in environmental decision making. *Resources* 5:37. doi: 10.3390/resources5040037
- Shafaghhat, A., Mir Ghasemi, M., Keyvanfar, A., Lamit, H., and Ferwati, M. S. (2017). Sustainable riverscape preservation strategy framework using goal-oriented method: case of historical heritage cities in Malaysia. *Int. J. Sustain. Built Environ.* 6, 143–159. doi: 10.1016/j.ijbsbe.2017.03.003
- Sharpe, L. M., Harwell, M. C., and Jackson, C. A. (2021). Integrated stakeholder prioritization criteria for environmental management. *J. Environ. Manag.* 282:111719. doi: 10.1016/j.jenvman.2020.111719
- Sterling, E. J., Betley, E., Sigouin, A., Gomez, A., Toomey, A., Cullman, G., et al. (2017). Assessing the evidence for stakeholder engagement in biodiversity conservation. *Biol. Conserv.* 209, 159–171. doi: 10.1016/j.biocon.2017.02.008
- Stoeckl, N., Jarvis, D., Larson, S., Larson, A., Grainger, D., and Corporation, E. A. (2021). Australian indigenous insights into ecosystem services: beyond services towards connectedness – people, place and time. *Ecosyst. Serv.* 50:101341. doi: 10.1016/j.ecoser.2021.101341
- Suldovsky, B., McCreavy, B., and Lindenfeld, L. (2017). Science communication and stakeholder expertise: insights from sustainability science. *Environ. Commun.* 11, 587–592. doi: 10.1080/17524032.2017.1308408
- Susskind, L. (2013). Water and democracy: new roles for civil society in water governance. *Int. J. Water Resour. Dev.* 29, 666–677. doi: 10.1080/07900627.2013.781914
- Taghian, M., D'Souza, C., and Polonsky, M. J. (2015). A stakeholder approach to corporate social responsibility, reputation and business performance. *Soc. Responsibil. J.* 11, 340–363. doi: 10.1108/SRJ-06-2012-0068
- Terkenli, T. S., and Kavroudakis, D. (2017). A stakeholders' analysis of eastern Mediterranean landscapes: Contextualities, commonalities and concerns. *Land* 6:90. doi: 10.3390/land6040090
- Tuyen, M. C., Sirisupluxana, P., Bunyasiri, I., and Hung, P. X. (2022). Stakeholders' preferences towards contract attributes: Evidence from Rice production in Vietnam. *Sustain. For.* 14, 1–21. doi: 10.3390/su14063478
- Ureta, J. C., Vassalos, M., Motallebi, M., Baldwin, R., and Ureta, J. (2020). Using stakeholders' preference for ecosystems and ecosystem services as an economic basis underlying strategic conservation planning. *Heliyon* 6:e05827. doi: 10.1016/j.heliyon.2020.e05827
- Uribe, D., Geneletti, D., del Castillo, R. F., and Orsi, F. (2014). Integrating stakeholder preferences and GIS-based multicriteria analysis to identify forest landscape restoration priorities. *Sustain. For.* 6, 935–951. doi: 10.3390/su6020935
- Van Den Born, R. J. G., Verbrugge, L. N. H., and Ganzevoort, W. (2020). Assessing stakeholder perceptions of landscape and place in the context of a major river intervention: a call for their inclusion in adaptive management. *Water Policy* 22, 19–36. doi: 10.2166/wp.2019.073
- Vargas-Payera, S., Martínez-Reyes, A., and Ejderyan, O. (2020). Factors and dynamics of the social perception of geothermal energy: case study of the Tolhuaca exploration project in Chile. *Geothermics* 88:101907. doi: 10.1016/j.geothermics.2020.101907
- Vila Subirós, J., Rodríguez-Carreras, R., Varga, D., Ribas, A., Úbeda, X., Asperó, F., et al. (2016). Stakeholder perceptions of landscape changes in the Mediterranean Mountains of the north-eastern Iberian Peninsula. *Land Degrad. Dev.* 27, 1354–1365. doi: 10.1002/ldr.2337
- Villamor, G. B., Palomo, I., Santiago, C. A. L., Oteros-Rozas, E., and Hill, J. (2014). Assessing stakeholders' perceptions and values towards social-ecological systems using participatory methods. *Ecol. Process.* 3, 1–12. doi: 10.1186/s13717-014-0022-9
- Vo, H., Vracholi, M., Frick, F., Sauer, J., Brucet, S., Benejam Vidal, L., et al. (2023). Socio-economic or environmental benefits from pondscape? Deriving stakeholder preferences using analytic hierarchy process and compositional data analysis. *J. Environ. Manag.* 342:118298. doi: 10.1016/j.jenvman.2023.118298
- Vurro, C., Romito, S., and Benassi, M. (2022). Too good to say goodbye? Effect of stakeholder orientation on the survival of large firms. *Long Range Plan.* 55:102161. doi: 10.1016/j.lrp.2021.102161
- Wagner, M. (2015). The link of environmental and economic performance: drivers and limitations of sustainability integration. *J. Bus. Res.* 68, 1306–1317. doi: 10.1016/j.jbusres.2014.11.051
- Wamsler, C. (2017). Stakeholder involvement in strategic adaptation planning: Transdisciplinarity and co-production at stake? *Environ Sci Policy* 75, 148–157. doi: 10.1016/j.envsci.2017.03.016
- Wondirad, A., Tolkach, D., and King, B. (2020). Stakeholder collaboration as a major factor for sustainable ecotourism development in developing countries. *Tour. Manag.* 78:104024. doi: 10.1016/j.tourman.2019.104024
- Xiao, C. (2023). Why stakeholder theory is “non-exploitative.” *Front. Bus. Econ. Manag.* 9, 207–211. doi: 10.54097/fbem.v9i2.9283
- Young, J. C., Jordan, A., Searle, K., Butler, A., Chapman, D., Simmons, P., et al. (2013). Does stakeholder involvement really benefit biodiversity conservation? *Biol. Conserv.* 158, 359–370. doi: 10.1016/j.biocon.2012.08.018
- Zakaria, Y. A., Iddrisu, T. I., and Arthur, B. K. (2023). Social impact assessment (SIA) of the tamale viaduct project in Ghana: stakeholders management practices, better or worse? *Heliyon* 9:e14249. doi: 10.1016/j.heliyon.2023.e14249