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Challenges beyond reaching a 30% of area protection

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The Conference of the Parties of the signatories of the Convention on Biological Diversity agreed in 2022 to protect 30% of terrestrial and marine areas by 2030 (the "30 × 30" target). What challenges emerge or intensify once (if) this 30 × 30 goal is achieved globally? To help practitioners and researchers pre-empt and plan along the path towards 30% protected area (PA) coverage, we draw lessons from a sizable and biodiversity-rich region that has already hit the target on land. Based on experiences and research about PAs in Spain (36% of land and 12% of marine area protected), we identify, illustrate and discuss the socioeconomic and management challenges that emerge with a high proportion of a country's area protected, as well as possible strategies to address them. We structure these challenges in three levels: PA governance and management, PA integrity, and the landscape matrix outside PA boundaries. Important strategies to address these challenges include enhancing engagement, participation and stewardship; increasing institutional resilience and a cross-sectoral approach for socio-environmental goals. Achieving quantitative targets of protection will not be sufficient to conserve the world's biodiversity and, in a leap forward, we envision the governance areas that need the most attention as countries reach (or get close to) sizeable proportions of protection.

The 15th Conference of the Parties of the signatories of the Convention on Biological Diversity agreed to protect 30% of the land and sea area by 2030 (ref. 1, Target 3), hereafter referred to as the 30 × 30 target. Achieving it would be hailed, but it would be insufficient to ensure biodiversity conservation, because the latter will depend on how protection fares. What conservation governance challenges emerge or intensify if countries achieve the 30 × 30 target? Protected areas (PA) globally cover 16% of terrestrial ecosystems and 8% of marine ones[2] or about 12% of the planet. These percentages vary highly across countries, and achieving globally the 30 × 30 goal might seem distant. However, a few countries such as Cambodia, Germany, New Zealand, Panama or Tanzania have reportedly passed this threshold already[3], and are dealing with the benefits and challenges of having such a large proportion of their area protected.

The 30 × 30 target is to be achieved through PAs (implicitly all IUCN categories[4]) and other effective area-based conservation measures (OECM[5]). Key debates around this target can be divided into three strands: (1) whether this quantitative target is enough (e.g. refs. 6, 7), (2) PA pre-establishment decisions such as what areas should be targeted, how to delimit boundaries, corridors, or what protection categories to apply[8–10] and (3) what occurs post-establishment, such as institutional characteristics and dynamics, effectiveness of management and other domains, threats to PA integrity and the broader impact of protection on local, regional and global biodiversity, as well as on ecosystem services and good life quality for peoples within PA influence[11,12]. This piece focuses mainly on the latter: implementation and practical challenges that derive from human-nature interactions across social domains (economic, social, political) once the areas to protect have been selected and gazetted. It contributes to the rich literature about PA effectiveness, although that literature tackles debates across the three strands (e.g. Rodrigues & Cazalis, 2020; Duran et al., 2022) and focuses on assessing PA performance by measuring outcomes.

Countries face heightened socioeconomic and management challenges as they get close to (or beyond) achieving a 30% coverage target. These challenges are distinct from the ones to reach it (such as planning and negotiation of what to protect), and it is important to pre-empt them early on. While the current extent of PAs globally took around 150 years since the establishment of the first National Park of Yellowstone in 1872, now the expectation is to multiply the coverage to achieve 30% of protection in less than a decade. Such coverage increase requires much greater commitment

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from administrations and society in terms of resources, coordination and addressing tensions with other land uses. It also requires more collaboration with other sectoral and landscape planning policies. Some of these challenges already exist when the proportion of area protected is low, but they intensify quantitatively and transform qualitatively when this proportion is larger (e.g. finance and staffing issues, higher institutional complexity, etc.). Among other reasons, less remote and low-threat areas remain available for new protection. For example, in many countries, the initial PAs tend to be located in remote regions (e.g. high-altitude mountains[13]). But when less such spaces are left to protect, and more diverse ecosystems are targeted, the new areas protected tend to be smaller, more fragmented[14], and therefore confront higher pressures, such as the vicinity of urban populations or of conflicting land uses (e.g. intensive farming or mining). So much coverage demands more integrated and holistic approaches than traditional PA planning and management. For instance, it requires a shift from managing PAs as rather isolated islands to considering how the PA can work within the mosaic of land uses across larger regions. We expand more on these arguments throughout this piece.

Increasing the area protected entails risks and requires investment. Unresolved issues in these aspects during PA establishment permeate through to post-establishment challenges. For example, where indigenous peoples and local communities are cornered by predominantly state-owned-and-managed PAs[15]. Protecting large proportions of land requires remarkable budgets and, often, abandoning land uses that may be economically more productive in the short term, where local communities face opportunity costs. Therefore, scaling up protection to nearly a third of a country's area needs strong justification, e.g. through values beyond those intrinsic to biodiversity, including ecosystem services, Nature's contribution to people and/ or relational ones. For example, in the mid-2000s, the IUCN and several scholars emphasised the need to focus not just on biodiversity, but also on ecosystem services and therefore, human well-being, as one of the PAs main goals[16–18].

We provide an outlook that, far from forecasting, is based on evidence and experience from a country that has achieved a protection of 30% of its land. Most of Spain is considered a global biodiversity hotspot[19] and 36 and 12% of the terrestrial and marine area is protected[20] (and an increase of up to 21% of marine area was approved in 2023). Drawing on experiences and research on PAs in Spain over recent decades, we identify, illustrate and discuss major issues that are better pre-empted before such large proportions of protection are achieved. These are relevant mainly to government-led conservation contexts (the predominant in this country), although many challenges also apply to other governance types, such as community-based conserved areas or private protected areas (see ref. 5).

Toward 30 × 30 at a country level

Spain has a wide range of ecosystems owing to its biogeographical location spanning South Europe and North Africa (including the Canary Islands). Protected area declaration started relatively early (the first National Park was established in 1918), and developed alongside universities' involvement in conservation, increased public awareness and important legislative and institutional changes[21]. There are over 30 types of PA categories in the country, and most of its area is protected as IUCN category V[22]. This includes national parks (16), natural parks (152), natural reserves (291) and over 1800 'Natura 2000' spaces[20]. Importantly, around 12% of Spanish terrestrial area is conserved through 52 Biosphere Reserves, making it the country with the largest number globally (Fig. 1). Biosphere Reserves align

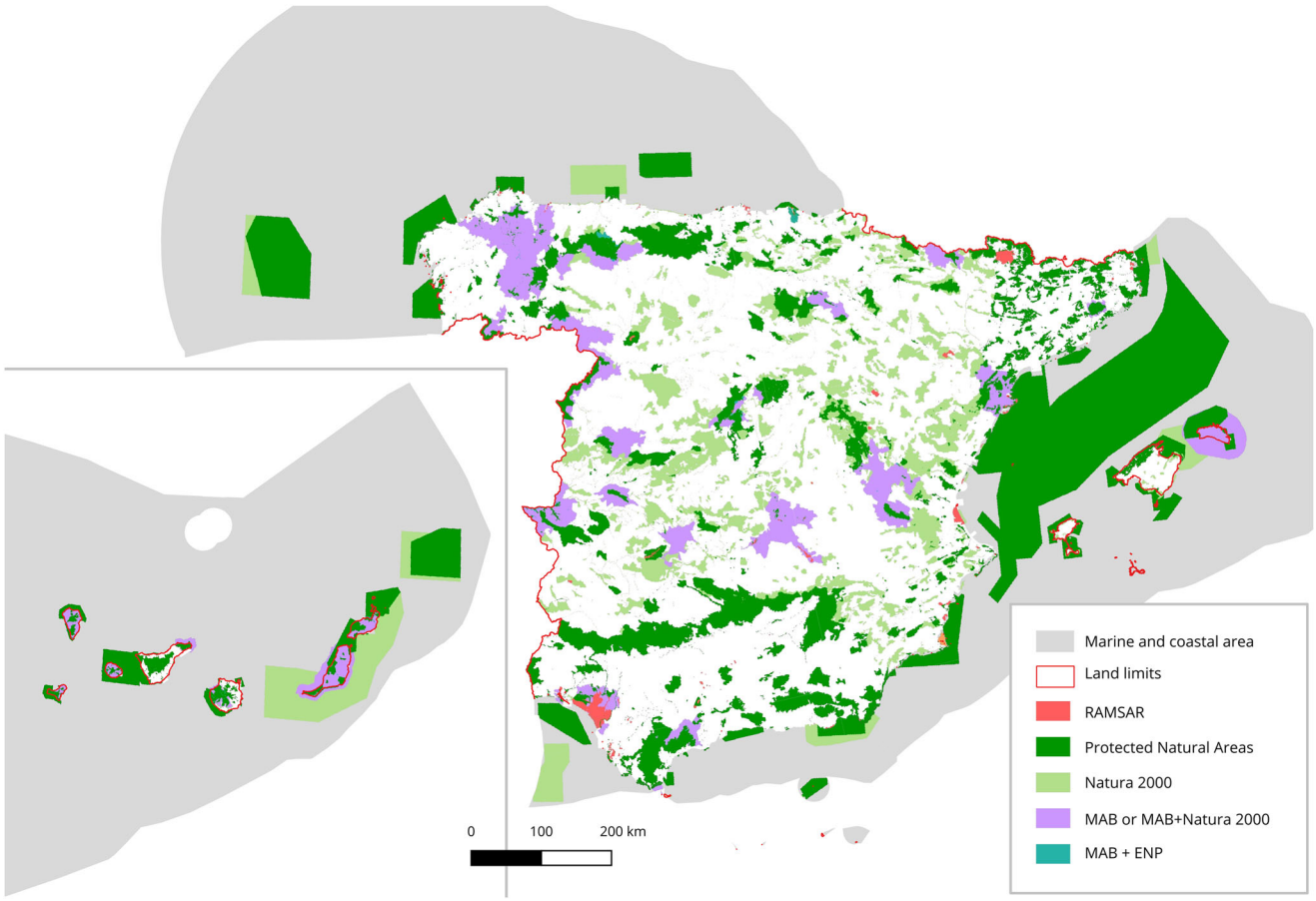

Fig. 1 | Map of land and marine area in Spain, and area covered by protected areas, Biosphere Reserves and Natura 2000 sites. Source: the authors with data from gob.es. Includes areas classified as Natural Protected Areas (ENP, various types, including National Parks and Natural Parks, MAB, OSPAR, RAMSAR, ZEPIM, RAMPE, Natura 2000). Many of them overlap geographically but have been colour-coded by the PA type of most stringency, for simplicity (Ramsar and Protected Natural Areas > MAB and Natura 2000).

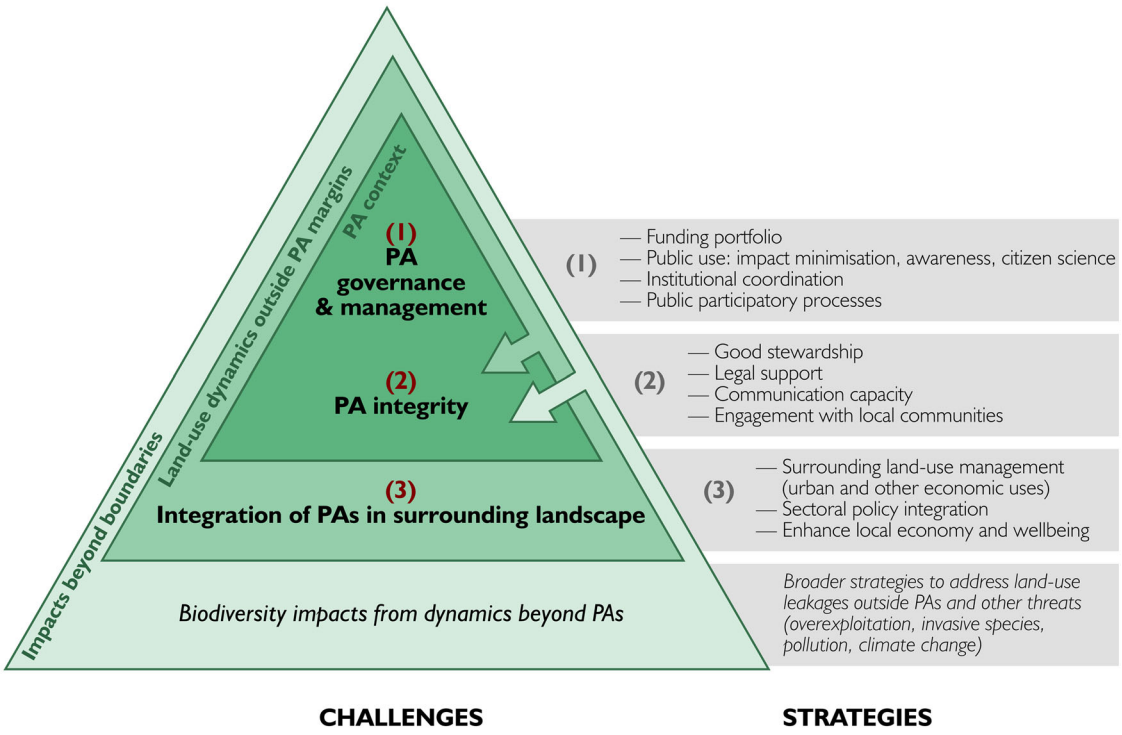

Fig. 2 | Categories of challenges for designated PAs and some strategies to address them. The geographical context of each challenge is indicated diagonally.

with OECM characteristics and therefore count towards the 30 × 30 target[20,23]. Through this remarkable percentage of protection, the country's PA system exemplifies global challenges and a wide range of implementation, effectiveness and governance issues.

Despite being classified as a high-income country, resources for conservation in Spain are severely constrained as a consequence of economic and health crises in recent decades, which have affected PAs in multiple ways (e.g. ref. 24). Overall, 40–68% of species assessed are threatened (particularly in freshwater ecosystems) and 45% of ecosystem services degraded[25]. This context can inform other countries with similarly modest resources and high ambition.

Challenges and responses beyond the 30 × 30 target

We disaggregate in three scales or categories, the key socioeconomic and management challenges that emerge or heighten once a high percentage of area-based protection is achieved (Fig. 2): (1) PA governance and management, (2) maintaining PA integrity when conflicts arise, (3) integration and interaction with the surrounding landscape (boundary areas and landscape matrix). A fourth category relates to dynamics well beyond boundaries, including the effect of global or interregional dynamics on PAs (pollution, climate change) and the displacement of biodiversity impacts outside of PAs[26,27]. The latter is due, for example, to reduced agriculture and forest products from within countries with a high PA coverage, and the associated imports of goods from other countries. We exclude the fourth scale from the detailed discussion due to the complexity and scarcity of the evidence required in the Spanish context. These challenges and responses occur at three geographical levels (Fig. 2 diagonal): within the PA context (challenges 1 and 2), land-use dynamics outside PA margins (3), and trade-offs with other regions' and countries' biodiversity, e.g., emerging from externalising food and material provision (4).

The strategies in Fig. 2 (right) represent ways to address these challenges and are expanded in each subsection below.

PA governance and management

The most immediate scale of challenges occurs within the PA context (both within physical boundaries as within the institution(s) directly involved in its management). We group these challenges and the strategies to address them broadly into four broad themes (Fig. 2): funding, public use, coordination among PA management institutions and participatory processes.

Funding shortages for PA staffing and budget are widespread across continents[28]. Finance shortfalls undermine the capacity and infrastructure necessary for effective conservation, whereas their intermittence or uncertainty can severely affect conservation efforts[29]. Achieving a large coverage of protection in Spain has come at the expense of adequate funding. One reason is that Biosphere Reserves and Natura 2000 sites cover a substantial part of protected territory, but have very limited associated funding[23]. Finance for National Parks (primarily from public sources) has decreased in recent years, from approx. 89 million EUR in 2014 to 66 million EUR in 2016, or 54 EUR/ha on average (from an average of 248 EUR/ha in 2010), with remarkable differences across sites[30]. Research programmes have undergone the strongest cuts between 2002 and 15 (ibid.). Data on finance available for 38% of the Natural Parks estimates budgets of 26 EUR/ha for 2016 (ibid.). Budget cuts have been mainly related to the 2008 financial crisis, but any crises (with contemporary examples like COVID-19, armed conflicts or inflation) may swiftly diminish resources for conservation in this and other contexts. Funding security can be strengthened with diversified financial models[23], such as a portfolio approach that engages a range of funding streams[31].

Public use is a major challenge particularly for popular PAs with easy access from major urban centres, in terms of management and accessibility of visitors and minimising their impact. An increase in the area protected that human populations can visit does not appear to translate into lower visitor density, and there are signs that the contrary is occurring for the most well-known areas: visitors have increased, for example, in National Parks from 10.1 million in 2009 to 15.4 million in 2017[30]. This aligns with data for over 500 PAs worldwide collected by ref. 32, which indicated a 2.5-fold increase in visitors between 2000 and 2007. Data on visitors to other PA types is, like for funding, patchy and mainly limited to numbers at visitor centres (and only 12% of PA visitors are estimated to visit these centres; ibid.). With adequate management and support, impacts on fauna and the landscape can be mitigated (more on this in the next subsection). For instance, in Sierra de Guadarrama National Park, managers worked with

telephone operators to anonymously measure visitor numbers in different parts of the park, and improve mitigation plans. Public use can also be an opportunity; high visitor numbers can increase income streams and capacity for knowledge generation (through citizen science) as well as strengthen ownership and awareness (through public activities). For example, using digital tools like public participatory GIS to better understand the needs and status of public-use infrastructure (as tested in Ebro Delta Natural Park[33]).

A challenge relevant to certain cases regards the coordination of stakeholders with responsibilities in PA management. Increased protected coverage augments the likelihood that PAs under different authorities become part of a biophysical continuum (like in Picos de Europa National Park, managed by three regional governments). Across such areas that comprise a larger protected region, additional coordination between management agents is key, for example, where different political orientations drive each of the administering governments. Coordination becomes increasingly crucial in themes like environmental criteria and funding for each part of the PA (for areas split across governments) or fire suppression strategies and actions at the food-biodiversity-water nexus (for themes within a PA that are managed by different agencies). An example of retrogression in integration alongside an increase in area is the compartmentalisation of responsibilities. For example, in Asturias, competencies for species (fauna) and for PAs have been separated into different departments. Coordination across themes and institutions can be boosted through transversal actors. For example, EUROPARC-Spain is a branch of the EUROPARC Federation (https://www.europarc.org/) that facilitates cooperation between managers and scientists across PA types, including joint monitoring and knowledge exchange among public institutions administering PAs and between PAs and society. It also provides consultancy and training services, and promotes projects. The National Parks Autonomous Agency also coordinates National Parks' management and promotes science-policy interactions through its research funding programme, for instance, matching research projects with PA managers' evaluation and supervision.

Public participation in PA-related decision-making in Spain started to improve with the establishment of environmental assessments[21]. More PAs gazetted with or closer to human populations could have triggered this. However, it appears more associated with a change in awareness of the importance of participatory processes, than with increased coverage. In fact, the importance of taking into account the opinion of multiple actors is highlighted by evidence suggesting that PA managers and researchers may have different perceptions and priorities to those of users[34]. Numerous procedures have been experimented, several of which have been successful (e.g. Tancat de la Pipa in Albufera Natural Park[35]). The diversity of public participation processes has been classified into types, depending on the responsibility and influence of participating actors, that are adaptable to other contexts: cooperation, consultation, information and prescription (e.g. in Sierra de Guadarrama[36]).

PA integrity

As protected area coverage expands, more PA boundaries tend to be physically closer to populations and to extractive and other economic uses. This proximity increases the risks of threats to protected area integrity. Integrity here refers to maintaining the initially designated PA boundaries and safeguarding biodiversity and ecosystem functions. Two types of external factors can threaten PA integrity, their biodiversity and their socio-ecological functions.

The first type are threats to the institution of the PA, which magnify if newly declared PAs are under-resourced[37]. PA integrity can be threatened legally and physically through PA downgrading, downsizing and degazettement (PADDD[38]), whereby the boundaries or zoning of established PAs change, or powerful stakeholders propose to develop activities in principle incompatible with protection, such as mining or intensive tourism. One example was a proposed ski resort in the Montaña Palentina Natural Park, a use that was explicitly not allowed in its Natural Resources Management Plan (an officially approved planning instrument). An attempt to formally downgrade this plan was blocked judicially in 2008 after large social mobilisation, also upon doubts over the proposal's economic viability due to climate change. Downgrading a PA's recognition can also occur, like the recent removal of Doñana from the IUCN Green List. Another type of PADDD is where non-allowed infrastructure has been constructed. For example, in Cabo de Gata-Níjar Natural Park, a non-compliant hotel was built using a legal loophole, and then declared illegal after civil society drove a lengthy judicial process. The infrastructure is yet to be decommissioned, and high demolition and restoration costs suggest that insurance should be required for such projects. A common thread in these examples is the importance of civil society and a functioning judiciary system. In some cases, powerful stakeholders have attempted to persuade local populations of the benefits of proposed developments. In the ski resort example, developers engaged local communities intensively with arguments about potential economic and employment gains for rural communities. Stronger resources and capacity, such as from communication experts, can help PA officers engage through effective, evidence-based counter arguments. Changes to PA boundaries may also be increasingly needed due to climate change.

The second type of threats to integrity are those driven by individuals (PA users) incurring illegal activities (poaching, fire ignition) or actions that, while not illegal, degrade landscape quality. The most obvious are poaching and illegal exploitation of resources within. Poaching is not necessarily linked to goods for sale (i.e. international trafficking), but with high-status leisure activities (hunting tourism) and/or what are framed as wildlife-livelihood conflicts (e.g. an ongoing controversy involving wolves and cattle in Picos de Europa). Fundamentally, these entail non-compliance with the activities allowed in the PA. Activities not necessarily illegal but that degrade PA quality tend to derive from intense tourism causing increased erosion, littering, unintentional fire risk or impacts on animal behaviour (e.g. on mating). For example, days of higher visitor affluence have been associated with animals moving to more remote areas (Griffon vultures in Bardenas Reales[39]). Here again, a communicative strategy that worked is illustrated by an example of a public-use worker from Sierra Nevada, who participated in blogs of sports communities (ski, BTT) to communicate more sustainable ways of practising.

Overall, strategies to address these threats include good legal support (with the precondition of strong judiciary systems), as well as enhancing communication capacity (Fig. 2) as illustrated above. More fundamentally, these can be addressed by engaging local communities and promoting good public stewardship (Fig. 2), because these ultimately support the mitigation of negative impacts and increase defences against PADDD (then supported by judicial processes). Appropriate engagement with local communities can also help managers understand illegal activities. Facilitating this endeavour in the most conflictive cases requires safeguards to navigate anonymity and social relations in what often are small communities (as in the case of poaching in Picos de Europa). Alternative strategies have worked in some cases, such as employing local people (and even poachers) as nature-guides and incentivising them to touristic sights of iconic, protected species. Diversified governance modes, inspired by community-based PAs (with numerous examples in, e.g. Nepal and Cambodia), can be designed to strengthen ties between PAs and local populations.

Integration of PAs into the surrounding landscape

At a wider scale, land-use dynamics outside PA margins (the intermediate nested polygon in Fig. 2) can be nearly as important for the PA as those inside[40]. Appropriate PA policy extends governance to boundary areas or zones of interaction between the PA and the broader landscape matrix[41]. We refer to areas that border or surround a PA and areas of interacting landscapes, rather than to official buffer areas such as those in Biosphere Reserves (which may be counted toward area targets and considered within the PA context in Fig. 2). Often, the environment in the landscape matrix is not sufficiently respected, or nearby activities compromise conservation goals and even cause severe damage within. Notorious examples are found in wetland PAs such as Mar Menor, a highly eutrophicated RAMSAR and Natura 2000 site[42], Tablas de Daimiel[43] and Doñana National Parks. In the

latter, an extractive industry nearby caused a dramatic spill with a high concentration of heavy metals[44], and aquifer exploitation for the farming industry along the only non-buffered zone is leading to dramatic degradation of the hydrological system within[45]. The extinction from this PA of the Eurasian hobby (*Falco subbuteo*), a non-demanding species, might indicate the disappearance of many others, seemingly linked to large-scale drivers from outside (intensifying farming practices and climate change[46]). The immediacy of the PAs to intensive agriculture—and shared hydrological systems—cause these damages. The more PAs are declared in a country, the more difficult it is to avoid such ecological connections between PAs and intensive land-use covers.

Increased urban pressure in the surroundings of PAs can also degrade their ecosystem functions. Between 1990-2018, urbanisation in PA surroundings in Spain nearly doubled[47]. Causes include a park-view effect and ongoing development pathways in the region. The latter is unrelated to the PA presence, although plausibly a threat that motivated protection in the first instance.

Challenges in both cases emerge from tensions between conservation and other land uses. Strategies to address them span from concrete to softer measures (Fig. 2). Firstly, managing surrounding land uses to ensure these do not pose a threat to the ecosystem within the PA. For example, more formalised zoning around the PA can mitigate damaging interaction between contiguous protected and unprotected areas, even if the latter are not gazetted PA (which would then count toward area protection targets). The three-ring system of Biosphere Reserves (core, buffer and transition[48]) can inspire the sort of regulation to be applied to areas surrounding PAs. Another model is example of Sierra Nevada Natural Space. This encompasses a National Park covering the summits surrounded by a Natural Park, in a smart combination of PA categories. Without a buffer or intermediate area, the matrix would have a much stronger impact on the core. Even if the rings around a PA are not protected in some way, they must be considered intermediate areas from a managerial viewpoint.

Secondly, a holistic approach regarding the landscape matrix is to integrate conservation with policies in other sectors (e.g. forest, farming and fishing management policies, climate and energy policies), and with broader nature-oriented policies—what's sometimes called 'environmentalisation' of non-environmental policies[35]. Policies for climate, health, ecological restoration and green-infrastructure in the remaining 70% of the area, which aim to bring about socio-environmental benefits elsewhere, can also protect and enhance biodiversity. An example is the European Nature Restoration Law of 2022, with quantitative indicators for urban or agricultural ecosystems, like a target of 10% of tree canopy in urban areas by 2050.

Thirdly, to ensure that actions in the surrounding landscape take into account the PA, a further strategy is to promote how the PA can enhance or mitigate broader matters occurring at the matrix. These benefits are not necessarily obvious; a large study of the socioeconomic impacts of PAs in Andalucia found that perceived social and economic impacts were contested[49]. Monitoring and highlighting positive socioeconomic impacts benefiting the local population can improve this perception. Enhancements to the local economy through tourism and sustainable industries can also attract or retain the population in the immediacy of remote PAs, which mitigates or reverts ongoing rural depopulation, which is of concern in many countries[50]. This can be a joint conservation policy. The depopulation of rural areas can reduce biodiversity because traditional practices are abandoned that maintain cultural landscapes and higher levels of (agro) biodiversity, such as *dehesas* (traditional agroforestry). PAs in Spain known to enhance the socioeconomic welfare of the local population, have also been found to be more competitive as tourist destinations[51].

Contributions of PAs to the surrounding population other than economic development can also be used to boost perception. For example, PAs can provide access to a healthy environment regardless of socioeconomic status, hence contributing with a public good to a justice agenda. In Andalusia, well-being has increased significantly in municipalities within PAs relative to outside[52], and PAs created a label for local produce ('*Marca Parque Natural*'), further contributing to enhancing local livelihoods and identity. These are all elements that, if given enough prominence, can strengthen a PA's position within the governance of the surrounding territory.

Outlook

What are the take-home messages for country strategies? The challenges identified above do not only apply once a country reaches a high percentage of protection, but should be considered along the pathway towards it. The scales at which challenges emerge and the strategies to address them (Fig. 2), provide a high-level structure for national strategies to ensure that achieving the 30 × 30 target does reduce biodiversity loss. Actions to be selected and adapted to each case include innovative funding mechanisms for diversification (1 in Fig. 2, governance), emphasis on public participation and legal and communication capacity (2, integrity) and stronger governance of the landscape matrix with conservation integrated in other sectoral policies (3, surrounding landscape).

Based on the strategies discussed, we identify three key transversal areas to pre-empt or overcome challenges at the three levels (nested polygons in Fig. 2): multi-actor engagement, participation and stewardship; sources of PA institutional resilience; and a cross-sectoral approach for socio-environmental goals beyond biodiversity conservation.

Smooth multi-level communication and participation engaging a wide variety of actors—through formal and informal networks, with trust as a key pillar[53]— is part of strategies to address challenges at all levels 1–3. First, engagement with policymakers, regulators, planners and managers can better inform policy and planning decisions to align with the specific needs of areas protected. Second, engagement with communities inside PAs and in the landscape matrix can raise awareness about PA benefits, increase public acceptability, improve public use, co-responsibility and co-stewardship. It can also empower local actors and civil society to contribute to ongoing protection, supporting monitoring, knowledge generation and addressing threats to PA integrity. Third, engagement with the private sector can attract further resources and build capacity, motivated by three simultaneous upwards trends: search and requirements to improve firms' Environmental, Social and Governance (ESG) profile; green finance investments; and awareness of the importance of healthy ecosystems for firms' operations, of which PAs are often strategic repositories.

Securing and diversifying the sources of institutional resilience of PAs strengthens their position to confront potential threats to their funding, capacity or integrity (addressing mainly challenges at scales 1 and 2). For example, having international projection or being an important player in international networks can safeguard a protected area from PADDD attempts. Relying on multiple sources of funding can also buffer or mitigate funding cuts, and the appeal of boosted impact via matching funding reduces the risk that one funding source stops funding altogether.

Beyond and above ecosystem conservation and as discussed for the third challenge, ensuring that PAs contribute to other sustainability goals increases their chances to become political and budget priorities. This can support PA acceptance in lower-income contexts where the social foundation for a safe and just space for humanity is yet to be reached[54]. For example, justifying the value of PAs as spaces of multiple gains in health, education, work and social equity can be straightforward. If well managed, PAs can also contribute to food, responsible production and consumption, and even non-polluting energy and innovation—nearly all of the Sustainable Development Goals.

PAs are necessary but not sufficient to address biodiversity loss. They should be considered as tools to achieve integrated landscape planning and broader sustainability goals, which together form a solid basis to conserve biodiversity. Of the five major drivers of biodiversity loss (land/sea use change, overexploitation, pollution, invasive species and climate change[55]), PAs target the main one —land-use changes degrading habitats and ecosystems. Yet protecting nearly a third of a country can spur food, energy and material imports from other regions and countries. This can intensify land use elsewhere. While further research is needed to understand these

linkages, national strategies to avoid biodiversity loss should already consider how to mitigate potential trade-offs between area protection and such spillovers beyond PA boundaries (within the country or abroad; the outer polygon in Fig. 2). For example, reducing demand through shifting diets[56] and reducing environmental throughputs in the economy. Of the other drivers of biodiversity loss, PAs also mitigate overexploitation and, to a lesser extent, pollution and invasive species within their own boundaries. However, threats from pollution and invasive species largely depend on human activity around the PA and beyond, which require further integrative policies outside of the scope of area-based protection.

The Kunming-Montreal Global Biodiversity Framework is an ambitious achievement, particularly in relation to the 30 × 30 target. Once the formal target is achieved, the pathway to conserve biodiversity and ecosystem services continues. It continues by developing other mechanisms that support resilient and sustainable landscapes, which can respond to shocks and maintain ecosystem functions despite uncertainty[25]. The specific examples and strategies discussed here, from a biodiversity-rich country with a very high level of protected area coverage yet modest resources for conservation policy, can inform the path other countries are called to follow to achieve the 30 × 30 target.

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Author contributions

All authors contributed to conceptualisation. A.Z. and I.P. wrote the original manuscript draft. M.M. edited the manuscript draft. A.Z. prepared figures. All authors reviewed the manuscript.

Competing interests

The authors declare no competing interests.

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