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# "Rights for Life" scenario to reach biodiversity targets and social equity for indigenous peoples and local communities

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ABSTRACT

Scenarios are a powerful way in which the scientific community can inform future policies for transformative change. Forthcoming scenario work holds promise for the Nature Futures Framework, which through the concept of relational values, seeks to recognize a multiplicity of value positions on human-environment relations, including those of Indigenous Peoples and Local Communities (IPLCs). The objective of this Perspective paper is to propose a novel scenario skeleton titled "Rights for Life", which holds promise to achieve ambitious biodiversity targets in a socially-equitable ways by focusing on the Nature's and IPLCs' rights. We demonstrate, through the case of Arctic reindeer (*Rangifer tarandus tarandus*) herding, that the "Rights for Life" scenario seems to deliver better social equity outcomes than the recently proposed "Half Earth" and "Sharing the Planet" scenarios that have been designed to achieve ambitious conservation and biodiversity targets. The "Rights for Life" scenario is particularly fit for sparsely-populated indigenous homelands and rural regions where local communities depend on culturally important nature-based livelihoods for their well-being. We recommend that future scenarios targeting human-environment relations should not only consider non-western and relational value perspectives, but also recognize the importance of Nature's and IPLCs' rights for ensuring transformative change for equity and the environment. Clear recognition of such rights can function as a basis for new regulations, market-based governance instruments, policies, and participatory governance instruments ensuring that violation of Nature's and IPLCs' rights by societal developments is recognized, avoided, minimized, or at least compensated for.

## 1. Introduction

The current urgency to solve environmental problems has created pressure for strict policy measures. It has been convincingly argued that environmental objectives cannot be achieved only by environmental policies or in protected areas, but transformative change requires a fundamental, system-wide reorganization across technological, economic, and social factors, including paradigms, goals, and values (IPBES, 2019). The necessity of transformative change for environmental sustainability, however, encounters a risk of losing sight of people, development, and social equity. Sarkki et al. (2022) have suggested that even transformative environmental policies that incorporate social equity objectives (e.g. European Green Deal and associated Just Transition Mechanism) run the risk of leaving behind those already in a marginal and vulnerable position. Furthermore, it has been considered that efforts to achieve Sustainable Development Goals may not only leave people behind, but actively relegate people, and to correct this, discussion on redistribution of power needs to take place (O'Brian, 2019). One way to do so would be to engage marginalized people, like indigenous peoples, into goal and target setting for sustainability (Yap and Watene, 2019). The problem of pushing Indigenous Peoples and Local Communities (IPLC) behind is even more acute regarding

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biodiversity targets than with Sustainable Development Goals, as protected areas are located and their enforcement takes place largely in indigenous homelands and in regions where local culturally important nature-based livelihoods are practiced.

The urgency of the current environmental challenges has spurred ambitious conservation targets that may compromise social equity. The most extensive proposal to date has been made by E.O. Wilson Biodiversity Foundation considering that "*The Half-Earth proposal offers [a solution] commensurate with the magnitude of the problem: …only by setting aside half the planet in reserve, or more, can we save the living part of the environment and achieve the stabilization required for our own survival*" (https://www.half-earthproject.org/). This proposal is more ambitious than the Convention on Biological Diversity's (CBD) Aichi Targets set for 2020. The Aichi Target 11 states that "*By 2020, at least 17% of terrestrial and inland water, and 10%of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes*"(https://www.cbd.int/sp/targets/). While the "Half Earth" proposal considers strict protection of 50 % of Earth as necessary, according to the Aichi target 11, the protected areas should be "effectively and equitably managed", giving more space for interpretation and application of conservation in practice.

The social equity impacts of implementing conservation targets are linked, among other things, to how strictly the protected areas are conserved and whether livelihoods and human activities are allowed within protected areas (see Wilshusen et al., 2002; West et al., 2006). It has been estimated that an additional 760 million people would find themselves living in areas with a new conservation status, if the "Half Earth" proposal were implemented (Schleicher et al., 2019). If implemented as "fortress conservation", the "Half Earth" proposal would lead to many IPLCs being displaced "*from their ancestral home and denied access to resources they rely on for their survival*" (Schleicher et al., 2019). At least a quarter of the global land area is traditionally owned, managed, used or occupied by indigenous peoples, and intersects about 40 % of all terrestrial protected areas and ecologically intact landscapes (Garnett et al., 2018). While conservation objectives and socioeconomic objectives for IPLCs can often be synergistic in protected areas (Oldekop et al., 2016), and the IPLCs often use their natural resources sustainably, the IPLCs are not protecting biodiversity per se (Marchand et al., 2016; Brondízio et al., 2021). Therefore, social equity for IPLCs and biodiversity goals are interlinked but distinct objectives.

"Sharing the Planet: bridging humans and nature in shared landscape" has been proposed as an alternative scenario able to meet biodiversity targets in a more socially-equitable way than the "Half Earth". As Kok et al. (2020) point out, this scenario identifies that, "*natural and human systems are integrated to form shared and multifunctional landscapes where nature is conserved for its instrumental as well as relational values*".

A key question for developing and implementing scenarios that can meet biodiversity targets relates to conservation triage, which is defined as "*the process of making difficult decisions regarding priority under severely constrained resources*" (Wilson and Law, 2016). The question of how much and how we must protect nature as to avoid compromising human well-being now and in the future, and not to violate societal responsibilities towards nature, is at the centre of current debates on biodiversity targets.

The concept of relational values can be used to find ways to cope with possible negative social implications of and opposition towards conservation approaches and to recognize the multiplicity of value perspectives – including those of IPLCs (Gould et al., 2019). Located between instrumental and intrinsic values, relational values seek to offer place for recognizing plurality of perspectives that people have on good quality of life and nature (Chan et al., 2018). Relational values can be defined as "*the values that contribute to desirable relationships, such as those among people or societies, and between people and nature, as in Living in harmony with nature*" (IPBES, 2015). Furthermore, it has been argued that "*transformative practices aiming at sustainable futures would benefit from embracing such diversity, which require recognizing and addressing power relationships across stakeholder groups that hold different values on human nature-relations*" (Pascual et al., 2017).

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) initiated the Nature Futures Framework for developing scenarios of positive futures for nature, to help inform assessments of policy options. The Nature Futures Framework seeks to open plurality of perspectives by differentiating three main value perspectives on nature – "Nature for Nature" (intrinsic values of nature), "Nature for Society" (instrumental values) and "Nature as Culture" (relational values) (Rosa et al., 2017; Pereira et al., 2020; Lundquist et al., 2021; Kim et al., 2021). Ongoing and subsequent scenario work of IPBES will elaborate the Nature Futures Framework and discuss its limits and opportunities (IPBES 3 August 2022). Future contributions to the Nature Futures Framework can assess particular short-term policy and management options in terms of their outcomes (e.g. policy screening), and identify broader longer-term goals for policy (policy design and agenda setting) (Kim et al., 2021).

Here, we aim to perform a policy screening on the plausible social equity implications of the "Half Earth" and "Sharing the Planet" scenarios for Arctic reindeer (*Rangifer tarandus tarandus*) herders and propose a novel scenario skeleton called "Rights for Life", including its long-term policy goals and shorter-term governance approaches to reach those goals. We note that while the "Half Earth" and "Sharing the Planet" scenarios have been presented in an extensive format (Kok et al., 2020; Immovilli and Kok, 2020), our "Rights for Life" scenario is at the moment a skeleton, which needs to be elaborated on through future research. Therein, we present starting points for novel narratives and scenario thinking, which can help to identify plausible ways of achieving environmental sustainability while ensuring social equitability for IPLCs.

Next, we outline the two recent nature-centred scenarios of "Half Earth" and "Sharing the Planet". Then, we briefly consider the impact of their implementation on Arctic reindeer herders (especially in Finland). After this, we present rationale, narrative, and governance aspects of the "Rights for Life" scenario, and consider its position vis-à-vis the "Half Earth", "Sharing the Planet" and regarding some positive sustainability scenarios and visions. Finally, we formulate recommendations for science and policy.

## 2. Two nature-centred scenarios

Two recent nature-centred scenarios have been presented by Kok et al. (2020), and Immovilli and Kok (2020) who assessed ambitious nature conservation strategies within a two-degree warmer and food-secure world, and identify two contrasting, ambitious global conservation strategies intended to restore terrestrial and freshwater biodiversity and to provide ecosystem services while also mitigating climate change and ensuring food security. The "Half Earth" scenario marks the resurrection of the exclusive conservation paradigms as represented by calls to protect 50 % of Earth's surface (see Schleicher et al., 2019). It has been observed that "*at least one billion people live in places that would be protected if the Half Earth proposal were implemented within all ecoregions*" (Schleicher et al., 2019) leading to vast social impacts. While it seems that the "Half Earth" scenario represents the "Nature for Nature" perspective and is based on intrinsic values of nature, the Wilson Biodiversity Foundation formulation links also to instrumental values in that it proposes to protect half of Earth for survival of humanity. An identified alternative, the "Sharing the Planet" scenario, seeks to achieve social and environmental objectives together by developing multifunctional landscapes (Immovilli and Kok, 2020). The "Sharing the Planet" narrative considers the "Nature as Culture" value perspective to some extent. In the quantitative analysis of the "Sharing the Planet" and

"Half Earth" scenarios, the "Nature as Culture" value perspective is not covered, because the models do not include that perspective.

We argue that both of these scenarios lack proper consideration of the rights of IPLCs. Considering the extensive past negative impacts of nature conservation and protected areas on IPLCs (e.g. West et al., 2006) it is relevant to address the question of IPLCs' rights also in the future policy measures intended to meet the environmental targets. As the cross-cutting objectives of United Nation's (UN) 2030 Agenda for Sustainable Development are "*to leave no one behind*" and "*to reach those furthest behind first*" (UNDP, 2018), the social equity of conservation can be seen as a global policy priority. Especially so as the forthcoming implementation of the Convention on Biological Diversity's (CBD) Post-2020 Global Biodiversity Framework aims to employ a rights-based approach, recognizing also the principle of intergenerational equity (https://www.cbd.int/article/draft-1-global-biodiversity-framework). Also, IPBES (2019) has recognized the need to enhance social equity for IPLCs, and that among the local indicators developed and used by indigenous peoples and local communities, 72 % show negative trends in nature that underpin local livelihoods and human well-being.

## 3. Reindeer herding and social equity implications of the two scenarios

In this section, we briefly illustrate plausible impacts of the two scenarios on IPLCs by presenting the case of Arctic reindeer herders. Reindeer herding is a culturally important traditional livelihood of indigenous Saami people, whose home region is located in northern Norway, Sweden, Finland, and on the Kola peninsula in Russia. Reindeer herding was chosen to illustrate local social equity questions, because the livelihood is practiced by indigenous communities (in some cases also non-indigenous traditional livelihood practitioners, e.g. in Finland), and it is largely dependent on environmental characteristics of widespread geographical areas. Given the sensitivity of reindeer herding to changes in other land uses and its vulnerability to climate change, for example via changes in snow cover, it serves as an excellent case to illustrate social equity issues linked to changes in biodiversity policies and land use governance, as well as developments in climate change mitigation (Horstkotte et al., 2022a).

We consider reindeer herding as linked to these three value perspectives in varying ways. It has been argued that Saami herders' values are relationally manifested in tight coupling of reindeer herding and indigenous Saami cultural identity (James, 2020). Herding is a traditional and culturally important livelihood also for ethnic Finn herders, even though they do not depend on reindeer herding for their ethnic identity (Sarkki et al., 2021). In addition to relational values, herding also embodies instrumental values. For example, Reindeer Herders' Association (https://paliskunnat.fi/reindeer-herders-association/reindeer-info/reindeer-husbandry-economy/) points out that, in addition to its cultural importance, reindeer herding also has significant economic value to herders (see also Kietäväinen et al., 2013). Furthermore, the economic aspect is connected to cultural identity in that it plays an important role in motivating the next generation to become herders. Intrinsic values of nature for herders are derived from possibilities that the environment offer for reindeer. For example, protected areas offer pasture that is not disturbed by other land uses, but protected areas are also important habitats for predators, and this leads to losses of reindeer to predators, within and in the vicinity of protected areas (Rasmus et al., 2020). Thus, instead of protecting nature for nature, herders often promote co-management of protected areas (see Heikkinen et al., 2010). Herders also consider reindeer as an integral part of northern nature, and thus their intrinsic value perspective is more closely linked to bio-cultural diversity than biodiversity. In conclusion, herders' views come closest to the relational value perspective, but are also interlinked with instrumental and intrinsic value perspectives.

The promise of the "Half Earth" scenario is to secure intrinsic values of nature by expanding protected areas to cover around 50 % of the Earth's surface by 2050 to halt species loss, retain ecological processes, protect wilderness, and separate nature and wilderness from human pressures (Kok et al., 2020). Impacts of the "Half Earth" scenario on Arctic reindeer herders depends on the critical question of whether reindeer herding is considered as part of nature or a threat to it (see Heikkinen et al., 2012). Both possibilities have been identified as plausible in recent Arctic scenario exercises. One option is to conserve the Arctic, similarly to the ways in which the Antarctica is managed, by excluding all other human activities except scientific research (Haavisto et al., 2016). This would entail the exclusion of IPLCs' livelihoods. However, implementation of such a strategy in the Arctic is more complicated due to its history of human colonization. Another option is to consider IPLCs' livelihoods as part of Arctic nature in accordance with the so-called "Romanticism" scenario, and to use policy measures to exclude other human activities (e.g. mining; forestry) than traditional livelihoods and related ecotourism activities from the Arctic (Lazariva et al., 2021). The currently protected areas in the Arctic (e.g. National parks) mostly allow IPLCs' livelihoods benefitting reindeer herders by limiting other forms of land use, but Strict Nature Reserves exclude IPLCs' livelihoods (see Heikkinen et al., 2010). Therefore, protected areas have ambiguous implications for reindeer herding. Negative impacts relate to abundance of large carnivores in protected areas and restrictions on hunting, which are not necessarily possible in protected areas – not even with an exception permits. Positive impacts are related to lands located in protected areas where reindeer are able to graze undisturbed. For example, old forests provide an important refuge during difficult snow conditions. Species conservation targeting large carnivores, such as wolf, bear, lynx, eagle, and wolverine, cause losses for reindeer herders, because these predators kill reindeer. Furthermore, the existing compensation systems to cover predator losses for reindeer herders are often inadequate (Rasmus et al., 2020).

The promise of the "Sharing the Planet" scenario is that diverse people can live in and use landscapes in a way that does not exceed environmental limits. This scenario allows plural ways of connecting with nature and achieving good quality of life (see Kok et al., 2020). However, despite being based on local adaptation and collaborative governance, the "Sharing the Planet" scenario may not be able to secure rights of IPLCs, who commonly depend on large areas of land for their culturally important traditional livelihoods and ways of life. The ever-intensifying multiple uses of the land in IPLCs' home regions require a set of small compromises with various other land users, resulting in cumulative detrimental impacts on the opportunities of IPLCs to practice their livelihoods, as shown by the case of reindeer herding in Fennoscandia (Horstkotte et al., 2022b; Stoessel et al., 2022). Therefore, it has been proposed that reindeer herders in Fennoscandia could be recognized as rights-holders to enhance social equity of multiple land uses for herders (Sarkki et al., 2021). The importance of addressing the rights of reindeer herders has been observed also in relation to application of the CBD's Akwé: Kon Guidelines in Saami people's home region in northern Fennoscandia. Markkula et al. (2019) showed that the transformative capacity of the voluntary guidelines and their implications for social equity were limited in a situation, where Saami reindeer herders' rights are not settled in Finland's national legislation.

## 4. The "Rights for Life" scenario

### 4.1. Rationale for a new scenario skeleton

The previous section presented insights into the policy screening regarding the "Half Earth" and "Sharing the Planet" scenarios against the objective of social equity for reindeer herders. These insights justify the need for further development of positive nature-centred scenarios that can also meet social equity objectives for IPLCs. We propose the "Rights for Life" scenario skeleton, which is informed by the overall policy objective of ensuring environmental sustainability in a socially-equitable ways for IPLCs. This overall long-term objective can be

broken down into three sub objectives, relating differently to each value perspective. The sub objectives are: renewing biocultural diversity, ensuring balanced use of ecosystem services, and sustainable livelihoods. The shorter-term governance options for the "Rights for Life" scenario diverge from those related to the hierarchical "Half Earth" and the collaborative "Sharing the Planet" scenarios. The "Rights for Life" scenario can be advanced by hybrid governance approaches including participatory co-management approaches, mitigation hierarchy, and recognition of IPLCs as rights-holders. These governance approaches are used to recognize and secure Nature's and IPLCs' rights.

### 4.2. The "Rights for Life" scenario narrative

We propose the "Rights for Life" scenario skeleton logic to secure Nature's and IPLCs' rights. On the one hand, Nature's rights, the idea of extending legal personhood to nature, is a prominent alternative to mainstream environmental governance (Rawson and Mansfield, 2018). Explicit recognition of the rights of Nature enables use of market-based policy instruments to internalize externalities related to the use of natural assets (Dasgupta, 2021). On the other hand, the "Rights for Life" scenario can support community agency, access, and decision-making, and ensure that IPLCs' rights are neither separated from conservation goals nor from efforts to reconcile past injustices (Armitage et al., 2020). Rights-based approaches require that policies, strategies, plans, and budgets target social equity objectives and that duty-bearers shape, deliver, and improve policies aimed at curbing inequalities and upholding standards of human well-being (UNDP, 2018).

When nature and IPLCs have explicitly recognized rights, innovative market-based instruments are easier to implement, because previous public goods and environmental and social externalities can no longer be ignored, but instead, impacts on the clearly recognized rights are regulated and guided through incentives and compensations. Thereby, the rights of Nature and IPLCs cannot be violated as free externalities by societal development, including production, consumption, and nature conservation, and policy guidance ensures that market actors play by the rules where they have responsibilities to avoid negative impacts on these rights or to compensate for violations if negative impacts on these rights occur. The "Rights for Life" scenario is particularly applicable to indigenous homelands and remote areas inhabited by local communities practicing traditional and culturally-important livelihoods.

### 4.3. Governance in the "Rights for Life" scenario

The key premise of the "Rights for Life" scenario is that in order to ensure environmental sustainability and social equity for IPLCs, the rights of IPLCs need to be formally institutionalized in policy and legal frameworks. Without such institutionalization, the negative impacts of economic development on nature and IPLCs are likely to be considered as free externalities (c.f. Chan et al., 2020; Dasgupta, 2021).

The Nature Futures Framework scenarios seek to explore the impacts of alternative policy and management options in nature conservation and sustainable development, to help inform assessments of policy options across multiple scales (Rosa et al., 2017; Pereira et al., 2020; Kim et al., 2021; https://ipbes.net/scenarios-models). This framework seeks to overcome limitations in scenario field by incorporating shared values and policy objectives related to nature conservation to identify desirable futures for nature and people with multiple alternative pathways to reach there (Lundquist et al., 2021). We contribute to understanding of governance aspects in positive nature-based future scenarios by considering what kinds of governance approaches could be used to achieve the "Rights for Life" scenario in a way that is able to balance between the value perspectives of "Nature for Nature", "Nature for Society", and "Nature as Culture".

In Fig. 1, we consider that instead of advocating policy objectives linked to only one of the three value perspectives (e.g. intense use of natural resources for instrumental reasons, full protection of nature for intrinsic reasons, and providing IPLCs full self-determination in their home areas across the globe for recognizing relational values), it may be more constructive to consider policy objectives as being located between the three general value perspectives. Fig. 1 outlines three policy objectives and three linked governance approaches for reaching the "Rights for Life" scenario.

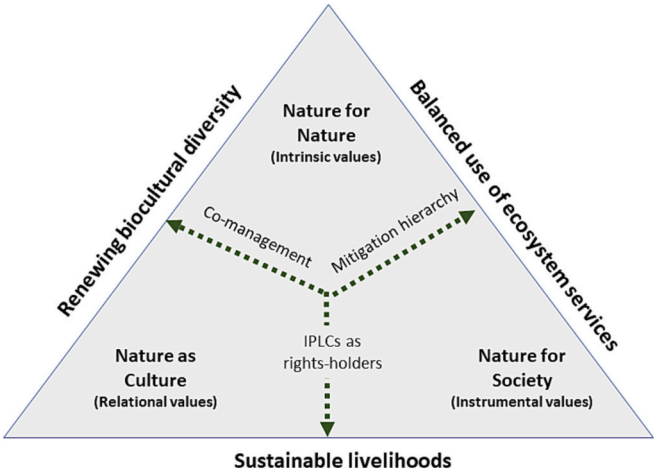


**Fig. 1.** Three Nature Futures Framework value perspectives, and objectives and governance approaches for achieving the "Rights for Life" scenario. The three value perspectives are displayed in the corners of the triangle. The objectives of the "Rights for Life" scenario are outlined along the sides of the triangle and the suggested governance approaches in the middle of the triangle. To ensure effective and balanced implementation of the proposed governance approaches, a general policy framework that recognizes Nature's and IPLCs' rights is needed.

We consider how and what kinds of governance approaches can help to reach the three objectives of the "Rights for Life" scenario including; i) balanced use of ecosystem services, ii) sustainable livelihoods, and iii) renewing biocultural diversity.

First, unbalanced use and degradation of ecosystem services is a key sustainability challenge (IPBES, 2019). While we locate "ecosystem services" between intrinsic and instrumental values of nature in Fig. 1, we recognize that they are also linked to relational values (Arias-Arévalo et al., 2017; Klain et al., 2017). We propose that the mitigation hierarchy decision-making framework can inform and guide governance and policy (Kiesecker et al., 2010; Phalan et al., 2018; Arlidge et al., 2018). The mitigation hierarchy is designed to address impacts on biodiversity and ecosystem services through first seeking to avoid impacts wherever possible, then minimizing or restoring impacts, and finally by offsetting any unavoidable impacts (Phalan et al., 2018). It has been applied also in connection to climate change (Cook-Patton et al., 2021). The framework is increasingly used to inform policy design for example regarding spatial planning (Bull and Strange, 2018; Jones et al., 2022). Adopting the mitigation hierarchy as a policy framework can enhance the rights of nature by ensuring that land use solutions do not lead to net loss of biodiversity values, and also enables the possibility of nature value trading and offsetting biodiversity values where negative impacts cannot be avoided.

In connection to the "Rights for Life" scenario, the mitigation hierarchy can be particularly useful in informing policy design for making sure that use of "Nature for Society" does not result in net losses to biodiversity. Legal recognition of Nature's rights (Chapron et al., 2019) can enable and justify the use of the mitigation hierarchy in policy, and provides rationale for market-based governance instruments. When Nature's rights are institutionally formalized, they can be protected more effectively by policy informed by the mitigation hierarchy. However, difficulties may arise especially with offsetting the negative impacts. Offsetting may exacerbate environmental harm because it erodes ethical barriers based on moral objections to the destruction of

biodiversity by allowing negative impacts as long as they are compensated for (Ives and Bekessy, 2015). In addition, net gain or loss for biodiversity is difficult to measure. Despite these challenges, the mitigation hierarchy is a promising decision-making framework to help to avoid negative impacts on biodiversity (Droste et al., 2022), especially if it is applied under a general policy framework that grants rights for Nature. It can be assumed that without clear and institutionally formal recognition of Nature's rights, the mitigation hierarchy will remain an indicative framework with limited impacts.

When developing the "Rights for Life" scenario, we considered the opportunity of applying and modifying the mitigation hierarchy to secure not only Nature's but also IPLCs' rights. However, we abandoned the idea because, given the heterogeneity and diversity within the social systems, it is not possible to identify net loss or gain towards a culture, tradition, or social system. We use objective of "renewing" instead of "conserving", or "restoring", biocultural diversity, since we consider that also IPLCs have the right to develop instead of being considered to be frozen in the past. Further, offsetting negative impacts would be meaningless as IPLCs do not have alternative homelands elsewhere.

Second, the cumulative impacts of resource development and increasing human activities threaten the concretization of IPLCs' rights in practice by reducing opportunities for IPLCs to practice their nature-based livelihoods (Tollefson and Wipond, 1998; Stoessel et al., 2022). As IPLCs do not protect nature per se, but often use it in sustainable way, we locate the objective of sustainable livelihoods between relational and instrumental value perspectives (Fig. 1). Sustainability of natural resource use can be enhanced by learning from IPLCs' culturally specific and often eco-centric relationships with nature (Gratani et al., 2016). To enhance IPLCs' possibilities to practice their culture through nature-based livelihoods, we propose to recognize IPLCs as rights-holders, instead of stakeholders equal to other actors (e.g. land users in the region) (Wiessner, 2011; Larsen et al., 2017; Sarkki et al., 2021). This is because the *stakeholder* concept does not recognize historical power asymmetries, structural oppression, and discrimination towards IPLCs (see Banerjee, 2000; von der Porten and de Loë, 2014). The concept of *rights-holders* suggests that specific groups, such as IPLCs, who rely upon traditional livelihoods, derive particular rights beyond those of the stakeholder that need to be better highlighted in land use governance (Wiessner, 2011; Larsen et al., 2017). Granting the status of a rights-holder can be an important step towards recognizing the rights of the actors the furthest behind who are entitled to affirmative governance measures. Recognizing the rights of IPLCs to their homelands can improve social equity of planning, licencing, and compensation mechanisms (Gregory et al., 2020). Granting the status of a rights-holder to IPLCs and implementing it in land use practice would enhance possibilities for IPLCs' livelihoods, and justify why IPLCs should be able to significantly influence land use projects, and be entitled to compensations from natural resource use in their home areas.

Third, nature conservation and protected areas may have significant negative impacts on IPLCs, if their implementation and governance is characterized by "fortress conservation" based on the idea of separating nature and culture (Wilshusen et al., 2002; West et al., 2006; Rai et al., 2021). Therefore, we suggest that the "Rights for Life" scenario seek to protect biocultural diversity instead of nature separated from people (Maffi, 2007). The objective of renewing biocultural diversity is located between the relational and intrinsic value perspectives (Fig. 1). However, it is also linked to the instrumental value perspective in that IPLCs often depend on nature for their material well-being and economy. We use objective of "renewing" instead of "conserving" or "restoring" biocultural diversity, since in our view, IPLCs also have the right to develop instead of being conceived of as 'frozen' in the past. We propose that well-designed co-management arrangements would be used as governance approaches to enhance the co-existence of IPLCs and protected areas. For reaching social equity in and around protected areas, IPLCs' rights need to be secured by clear laws and regulations, and effective participation of IPLCs in the co-management process needs to be fulfilled not only on paper, but also in practice, to ensure socially-equitable implementation of co-management arrangements (Pourcq et al., 2015; Tauli-Corpuz et al., 2020). An extensive review paper found out that "*Positive conservation and socioeconomic outcomes were more likely to occur when PAs [Protected Areas] adopted co-management regimes, empowered local people, reduced economic inequalities, and maintained cultural and livelihood benefits*" (Oldekop et al., 2016). Therefore, protected areas can have, albeit not necessarily, positive outcomes for both social equity goals and environmental objectives. This is related to synergistic positive outcomes in that IPLCs often have strong ties to lands and forests they depend on, and many IPLCs have developed locally adapted institutions that are positively associated with high biodiversity.

### 4.4. Comparing the "Rights for Life" to other scenarios

Here we distinguish the "Rights for Life" scenario from the "Half Earth" and "Sharing the Planet" scenarios, and also situate it in relation to some other related scenarios and visions. Fig. 2 distinguishes the "Rights for Life", "Sharing the Planet" and "Half Earth" scenarios in terms of key aspects that have particular significance for achieving social equity objectives for IPLCs.

While the "Rights for Life" is a novel scenario skeleton proposed in the present paper for the first time, there are some existing scenarios working in logics, which are quite close to the "Rights for Life". Pereira et al. (2020) propose seven visions to ground forthcoming positive nature-centred scenarios. The "Rights for Life" is distinct from these seven visions, but relates to them by highlighting biocultural diversity, diverse knowledge systems and governance that recognizes IPLCs' rights to territories, resources, and knowledge; and by highlighting that new forms of governance lead to inclusion of externalities regarding economic activities and to incentives for sustainable and natural resource use able to sustain richly diverse cultures, societies, and nature.

We can position the "Rights for Life" also in relation to the so-called archetypes of exploratory scenarios (van Vuuren et al., 2012; Hunt et al., 2012). The Archetypes are called Economic optimism, Reformed markets, Global sustainable development, Regional sustainability, Regional competition, and Business-as-usual (Sitas et al., 2019). The "Rights for Life" falls within the "Regional sustainability" scenario archetype. The "Rights for Life" has also connections to some Arctic scenarios that fall under the "Regional Sustainability" scenario archetype (see Nilsson and Sarkki, 2022). Table 1 outlines the "Regional sustainability" archetype (Sitas et al., 2019), and Arctic scenarios called "Shangri-La" (Haavisto et al., 2016), and "Equitable Frontier" (Brigham, 2007), and the "Rights for Life" in terms of their main objectives, their links to the three value perspectives, and key governance aspects.

The conclusion of the comparison of the "Rights for Life" to some existing scenarios is that related futures have been envisioned also in other scenario exercises. We consider that key novelty in the "Rights for Life" relates to the governance aspects to ensure Nature's and IPLCs rights that we have connected to the scenario.

## 5. Recommendations for science and policy

Two key recommendations can be derived from the "Rights for Life" scenario. The first recommendation is linked to future policy-relevant scenario exercises conducted by applying the Nature Futures Framework and the three value perspectives. Recent and growing interest in relational values to complement intrinsic and instrumental value perspectives is a necessary, but only a first, step towards securing IPLCs' well-being and socially-equitable transformative change. It has been argued that "*because of their somewhat unique combination of groundedness and moral relevance, positive relational values may offer important opportunities for the evolution of values that may be necessary for transformative change towards sustainability*" (Chan et al., 2018: A1). While transformative value change is important, the case of Arctic reindeer herders implies that considering and respecting IPLCs' knowledge and ways of

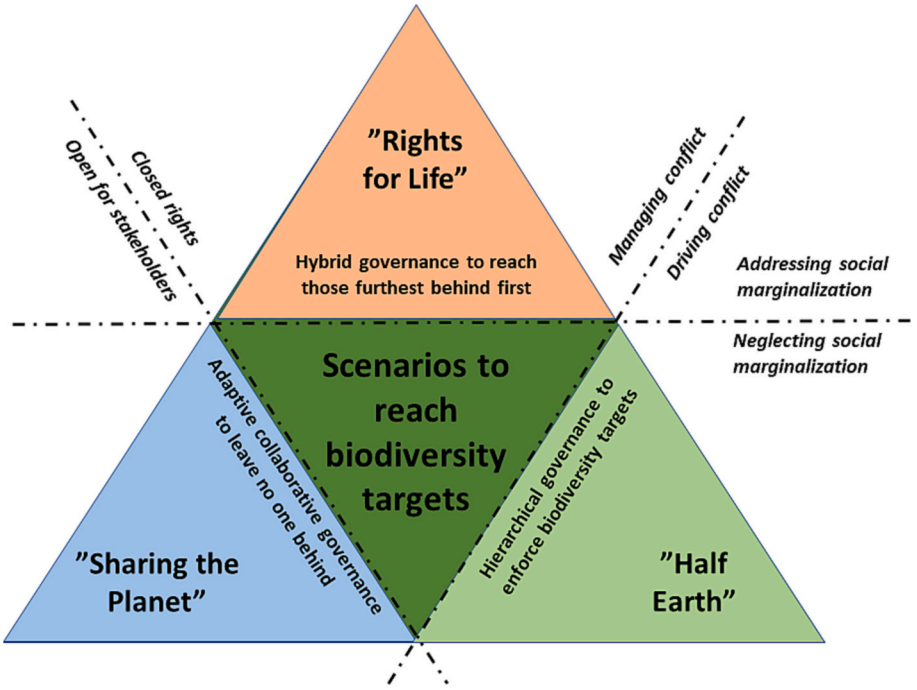


**Fig. 2.** Distinguishing the "Rights for Life", "Sharing the Planet" and "Half Earth" scenarios. The dashed lines across the triangle separate the scenarios by commonalities and contrasting elements. First, the "Half Earth" seeks to secure Nature's rights by excluding human activities, and the "Rights for Life" grants rights for nature while also being explicit about securing basic human rights for IPLCs. The "Sharing the Planet" scenario is more open for stakeholders to negotiate rights in a collaborative setting. Second, the "Half Earth" is likely to be a major driver for conflicts due to its hierarchical top-down attempt to protect 50 % of the Earth, and leave the other half for competing economic activities. The "Sharing the Planet" scenario seeks to manage conflicts by collaboration, and the "Rights for Life" by being clear on to whom rights are given. Third, the "Rights for Life" scenario seeks to address social marginalization by explicit attention to rights of IPLCs. The "Sharing the Planet" scenario is characterized by stakeholder negotiation aiming for consensus, possibly leading to the inability of conservation governance to reach those furthest behind, such as minorities and IPLCs. The "Half Earth" is likely to lead to social marginalization of minorities and IPLCs in both the protected half, and the half of intensified production and land use.

**Table 1**
Comparing the "Rights for Life" scenario to "Regional Sustainability" scenario archetype and two Arctic scenarios.

| Scenario title → Key themes | Scenario archetype: Regional sustainability (Sitas et al., 2019) | Arctic scenario: "Shangri-La" (Haavisto et al., 2016) | Arctic scenario: "Equitable Frontier" (Brigham, 2007) | The "Rights for Life" scenario |
|---|---|---|---|---|
| Main objective | Local sustainability. | Balance between environmental, social and economic sustainability. | Social equity and environmental well-being and informed by international sustainability paradigm. | Sustainable livelihoods, renewal of biocultural diversity and balanced use of ecosystem services. |
| Nature for Nature | Environmental protection proactive; slow development of environmental friendly technologies. | Investments in clean technology. Environmental sustainability is enhanced by focus on climate and nature's carrying capacity. | New areas are added to existing Arctic national parks, enhancing both the environment and the tourism industry. | Protected areas increase and regulations for land use become clearer. |
| Nature for Society | Economic development medium; technological development medium to rapid. | Natural resources are managed sustainably. Environmentally friendly tourism. | Resource exploitation continues, but is practiced within broad social and environmental concerns. | Land use and resource use continue, but seek to avoid, minimize, restore, and offset the negative impacts on biodiversity. |
| Nature as Culture | Local sustainability emphasised. | All land claim agreements (between IPLCs and other Arctic actors) have been settled. IPLCs' well-being high. | Sustainable practices benefit fishing, forestry, and reindeer herding, while oil production plummets. | IPLCs livelihoods flourish both within protected areas, and on areas employed by other land uses. |
| Governance | Trade barriers, local actors are the ones doing decisions. | Public deliberation for sustainability. Regional and international regulation is clear, equal, and uses of incentive-based policies and license systems. | Revenue sharing from industries (e.g. tourism, transportation, and minerals extraction) for IPLCs. Collaborative models for resolving complex sustainability challenges and conflicts. | Use of mitigation hierarchy, co-management, and recognition of IPLCs as rights-holders as governance tools within a larger policy framework that clearly recognizes IPLCs rights. Benefit sharing and Free Prior and Informed Consent to secure IPLCs rights. |

relating to nature does not yet mean that their rights are protected. In fact, it has been considered that failure to recognize IPLCs' rights "*in designing and implementing biodiversity policy disregards the existence of their different ways to relate with nature*" (Reyes-García et al., 2022). The recognition of IPLCs' knowledge and relational values by "Nature as Culture" perspective may not suffice to reach social equity goals without strong explicit recognition of IPLCs' rights when implementing transformative policies. Therefore, explicit recognition of IPLCs' rights together with the relational value perspective can ground identification of novel transformative policy options to halt biodiversity loss in a socially-equitable way.

Our second recommendation targets policy. Recognition of IPLCs' and Nature's rights explicitly in policies and laws enables transformation towards sustainability. A key challenge for transformation to sustainability is to internalize negative social and environmental externalities into production and consumption so that meeting demands of the developed world does not take place at the cost of the environment, and marginalized actors, such as IPLCs (see Chan et al., 2020). Clear recognition of rights in policy and governance can help to internalize negative externalities, so that violation of Nature's and IPLCs' rights is recognized, avoided, or at least compensated for. Without clear recognition of rights, the negative impacts on nature and IPLCs remain as hidden and free externalities, as there are no clear legal, regulatory, and incentive-based rules that would ensure that negative impacts on the environment and IPLCs are no longer free (i.e. internalizing negative externalities). Transformative change requires revision of the rules of

the game, so that treating negative impacts of development on nature and IPLCs as free externalities will no longer be possible. A first step to achieve a change in the rules is to secure a clear recognition of Nature's and IPLCs' rights by policy.

## Declaration of competing interest

The authors declare that they do not have any conflict of interest regarding this paper. It is their original work, and they have not submitted it elsewhere.

## Data availability

No data was used for the research described in the article.

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