Table 1. Social Equity Enablers and Constraints (SEEC) in NbS

SEEC category	SEEC description	SEEC short version	SEC label	# SEC subcategories
1. Socio-cultural	Social (including gender) norms, customs, traditions, worldviews, and value systems (e.g., intrinsic, instrumental, and relational values, and value monism or pluralism), along with historical legacies, and the presence or absence of social justice institutions and support mechanisms (formal or informal). These factors legitimise or contest NbS approaches and reproduce or perpetuate inequities or help redress them.	Social (including gender) norms, customs and traditions, worldviews and values, social justice, and historical legacies.	Value-monism, restrictive social norms, colonial legacies, power asymmetries	4
2. Socio-economic	Livelihoods, survival strategies, access to economic opportunities (including economic mobility and viable alternative livelihoods), and how these interact with macroeconomic and political conditions (e.g., employment trends, inflation, market access, policy or other shocks) to shape who participates, benefits, or experiences costs including unintended consequences of NbS.	Livelihoods and survival strategies, economic structures and economic mobility, and how these interact with macro-economic and political conditions.	Livelihood tensions, lock-ins, and failures	2
3. Governance	(In)compatibilities between informal, customary, and formalised governance systems (including laws, regulations, procedural requirements, institutional arrangements, tenure systems), the level of integrity and trust, approach to gatekeeping, and incentives and readiness for balanced decentralisation and multi-level/actor co-governance that integrate those most vulnerable.	Compatibilities (or incompatibilities) between governance systems, level of integrity and trust, approach to gatekeeping, feasibility of balanced decentralisation (local autonomy with central oversight) and/or equitable multi-level governance.	Inadequate institutions, tokenism, corruption, land insecurity	5
4. Resources	Alignment of external funds with levels of community or implementor access to and control over financial resources (e.g., income, savings, credit, insurance, compensation) and non-financial resources (e.g., assets, land/tools, inputs such as seeds). This factor includes alignment with what is required to innovate and sustain NbS given levels of baseline environmental degradation, poverty, inequality, and the timing and distribution of NbS benefit accrual (including lagged or delayed NbS returns and risk exposure before benefits accrue).	Resource (financial and non-financial) access and control, as well as alignment of external funds to innovate and sustain NbS given complex baseline conditions.	Insufficient resources for benefits given complexities and long return periods	2
5. Information/Knowledge	Biases and bias blind spots relative to critical self-awareness, reflexivity and awareness regarding value pluralism, distributional justice, contextualised safeguarding, and appropriate participation ethics, and the availability and accessibility of methodologies and technologies to support these approaches and processes. In addition, uneven accessibility, availability, and awareness limit the ability of some groups to avoid unintended harms and to adopt, participate in, or sustain NbS.	Access and availability of information relating to NbS and social equity, and existing biases that influence the use of this information.	Insufficient technology, methods, information, recognition, expected volunteerism, unequal participation	4
6. Capability/Capacity	Distribution and adequacy of capacity and capability for meaningful and equitable NbS governance and procedural processes (participation, consent, legal and administrative requirements), including community and implementer capabilities, literacy and education, and social equity and safeguarding expertise to recognise and address epistemic injustices (testimonial and hermeneutical) and to apply methodological and value pluralism drawing on diverse evidence types.	Distribution and adequacy of capacity and capability for meaningful and equitable NbS processes, including addressing epistemic injustices (testimonial and hermeneutical) and incorporating value pluralism.	Methods monism, insufficient capabilities for epistemic justice, inadequate literacy and education	5
7. Funding landscape	Systemic, meso- to macro-level features of NbS finance that shape funding access and terms, including funder criteria, priorities, risk/return expectations, eligibility and compliance (dis)incentives or perverse incentives, time horizons, safeguarding requirements, and intermediaries, partners and service provider processes. These conditions can either reinforce existing inequalities or support equitable outcomes (e.g., privilege project-based or externally driven approaches with short timelines relative to long-term, flexible and patient approaches that tolerate delayed, uncertain and process-based returns with accessible criteria and compliance, and equity-centred funding allocations).	Systemic meso- to macro-level features of NbS finance that determine who accesses funding and on what terms, including priorities, risk/return, eligibility, compliance incentives, time horizons, safeguards, and intermediary or consultant processes.	Biases, contextual ignorance, over-promising, -stating and -selling, problematising local use	4

8. Physical/Environmental	Biophysical and spatial conditions that mediate the feasibility of NbS and the distribution of costs/benefits across groups. These factors affect NbS viability and the feasibility of alternative livelihoods; enable or constrain participation/adoption; and shape safeguarding and monitoring feasibility and risk exposure (e.g., remoteness, terrain, land parcel size/fragmentation, access to water, climate hazards, climate variability, salinity, seasonal wildlife movements).	Biophysical and spatial conditions that can mediate NbS benefits, hinder adoption and participation and disincentivise effective NbS monitoring, evaluation and safeguarding.	Harsh or unconducive environmental conditions differentially influence	5

Table 2. 32 SEC subcategories

SEC category	#	SEC label	SEC long description	SEC short description	Level at which the constraint occurs	Who reinforces or perpetuates this constraint and who should drive the change	Illustrative examples	All coded papers	community_co	implementer_co	funder_co	community_rp	implementer_rp	funder_rp
1. Socio-cultural: Value-monism, restrictive social norms, colonial legacies, power asymetries	1.1	Single worldview valuation systems (value monism)	Single worldview valuation systems (i.e., value-monism) often privileging economic, instrumental, or a narrow set of intrinsic, values while sidelining relational, biocultural, reciprocal values or diverse valuation systems (i.e., value pluralism) in NbS objectives and policy instruments. This narrows problem and solution framing, excluding locally salient priorities, skewing cost-benefit assessments in ways that disadvantage some groups.	Value monism (often economic/instrumental) prioritised over value pluralism, or over relational, biocultural or human-nature reciprocal value systems.	Implementers	Implementers, Funders	In eastern Madagascar, REDD+ and sustainable forest management prioritised global carbon and biodiversity values over local livelihoods, cultural identities, and food security, undermining key nutrition sources for poorer households (Llopis et al., 2021). In eastern South Africa, seemingly collaborative NbS benefit-sharing agreements similarly privileged economic and instrumental values over relational and place-based values, reinforcing historical power relations through monetary payouts without land access (Cundill et al., 2017; Dahlberg & Burlando, 2009).	Hewitson et al., 2021; Llopis et al., 2021; Constant et al., 2020; Rodenburg et al., 2020; Stone et al., 2020; Musavengane 2019; Ward et al., 2018; Cundill et al., 2017; Bollig 2016; Boonzaaier et al., 2016; Dhital et al., 2015; Swemmer et al., 2015; Burgoyne et al., 2014; de Koning et al., 2014; Lewins et al., 2014; Chaderopa 2013; Snyman 2013; Suich 2013; Mbaiwa 2012; Silva et al., 2012; Dahlberg et al., 2009; Scanlon et al., 2009; Van Damme et al., 2009; Frost et al., 2008; Balint et al., 2006; Crane 2006; Kgathi et al., 2006; Jones 2005; Robertson et al., 2005; Mutamba 2004; Wolmer et al., 2003; Kull 2002; Wynberg et al., 2002; Nabane et al., 1997	0	1	0	0	1	1
	1.2	Restrictive or harmful social norms	Social (including gender) norms restrict ability of some to participate in, influence decisions about, or benefit from NbS, affecting adoption and sustained engagement. These norms can also increase opportunity and transaction costs or unintended negative consequences for some.	Restrictive social (including gender) norms limit NbS participation, involvement and benefit access for some groups or result in unintended harmful consequences.	Communities, Implementers	Communities, Implementers	In an agroecological project in Malawi, unaddressed gender norms shaped who controlled knowledge, equipment, decisions, and land, constraining women farmers by excluding them from decision making, limiting crop choices (men focus on cash crops and women focus on food crops), and leaving their farmland access insecure. Here women reported losing access to their land (to those less vulnerable or with more power) after investing substantial labour in restoring soil health due to land previously seen as unproductive now being more productive and fertile (e.g., Nyantakyi-Frimpong et al., 2016). In conservation agriculture NbS, advertising and mainstreaming campaigns by seed or agricultural companies are inherently biased towards supporting men. Men have higher contacts with extension agents, input suppliers and marketers, which gives them an advantage in access to inputs compared to females (Makate, Makate, & Mango, 2019).	Duffy et al., 2021; Hewitson et al., 2021; Zulu et al., 2021; Constant et al., 2020; Guo et al., 2020; Hlengwa et al., 2020; Umar et al., 2020; Makate, Makate, & Mango, 2019; Mashapa et al., 2019; Musavengane 2019; Mutenje et al., 2019; Wekesah et al., 2019; Mugandani et al., 2019; Neudert et al., 2018; Ward, Holmes, Stringer, 2018; Ward, Stringer, Holmes, 2018a; Guerbois et al., 2017; Makate et al., 2017; Toth et al., 2017; Ward et al., 2018; Ajayi et al., 2016; Chinsamy et al., 2016; Nyantakyi-Frimpong et al., 2016; Farnworth et al., 2015; Zuka 2013; Mbaiwa 2012; Ngwenya et al., 2012; Silva et al., 2012; Frost et al., 2007; Nabane et al., 1997	1	1	0	1	1	0
	1.3	Biases dictate regulatory NbS reinforcing inequities	Regulatory and policy biases and blind spots often rooted in colonial legacies and ongoing social injustices shape NbS rules and enforcement in ways that reproduce inequities. This can restrict access to, and use of, land and natural resources, and undermine local livelihood and survival strategies.	Biases and blind spots (including colonial legacies) shape NbS regulation and enforcement, reinforcing deep-rooted inequities in land/resource access and use.	Implementers, Funders	Implementers, Funders	In southeastern South Africa, an NbS rooted in colonial and paternalistic land governance converted privately owned farms into protected areas for ecotourism and downstream ecosystem service supply (e.g., water) while ignoring farm dwellers' tenure rights, cutting off their access to jobs, grazing, firewood, medicines and other essential resources, and thereby reinforcing long-standing racial and economic inequalities in land and resource use (Crane 2006).	Llopis et al., 2021; Makate, Makate, & Mango, 2019; Cundill et al., 2017; Guerbois et al., 2017; Makate et al., 2017; Mutekwa et al., 2017; Boonzaaier et al., 2016; Dhital et al., 2015; Burgoyne et al., 2014; Lewins et al., 2014; Mbaiwa 2012; Dahlberg et al., 2009; Crane 2006; Kgathi et al., 2006; Robertson et al., 2005; Wynberg et al., 2002	0	1	1	0	1	1
	1.4	Asymetries of power bias NbS	Power asymmetries across actors shape whose priorities and knowledge influence NbS including visions, valuations, policies, and implementation. This results in inequitable participation and benefit distribution, reinforces existing inequities, and increases unintended harms or opportunity/transaction costs for the most vulnerable.	Power asymmetries bias NbS visions, valuations, policies, activities or outcomes.	Communities, Implementers, Funders	Communities, Implementers, Funders	In a Zambian agroforestry project, which focused on protecting trees on poorer community lands, violations of regulations by wealthy livestock farmers went unreported by communities as communities were afraid of disrupting social relationships and cohesiveness (Ajayi et al., 2016).	Constant et al., 2020; Musavengane 2019; Mutenje et al., 2019; Neudert et al., 2018; Cundill et al., 2017; Ward, Holmes, Stringer, 2018; Ajayi et al., 2016; Senganimalunje et al., 2016; Dhital et al., 2015; Zuka 2013; Ngwenya et al., 2012; Sommerville et al., 2010; Dahlberg et al., 2009; Crane 2006; Nabane et al., 1997	1	1	1	1	1	1
2. Socio-economic: Livelihood tensions, lock-ins, and failures	2.1	NbS tension with livelihoods and survival	Tensions between NbS objectives and existing livelihood and survival strategies (often land- and natural resource–dependent) of the local community including specific groups, due to inadequate consideration of livelihood needs and trade-offs during NbS design, planning, and implementation.	Inadequate consideration of potential tensions with local land and natural resource based livelihoods and survival strategies.	Communities	Implementers, Funders	In north-eastern Madagascar, forest conservation and REDD+ interventions restricted hunting and agricultural practices by poor and food-insecure households without providing sufficient alternatives and thus contributed to nutritional and livelihood impacts (e.g., Llopis et al., 2020). In southwestern Madagascar, community revenue from NbS focused on reducing emissions from deforestation and forest degradation were not high enough to cover opportunity costs that came from prohibiting slash and burn agriculture and charcoal production despite these being very low to start (e.g., Neudert et al. 2018).	Hewitson et al., 2021; Llopis et al., 2021; Zulu et al., 2021; Du-Pont et al., 2020; Llopis et al., 2020; Rodenburg et al., 2020; Appiah et al., 2018; Bidaud et al., 2018; Djenontin et al., 2018; Neudert et al., 2018; Ward, Holmes, Stringer, 2018b, 2018; Gronau et al., 2017; Guerbois et al., 2017; Mutanga et al., 2017; Mutekwa et al., 2017; Swemmer et al., 2017; Nyantakyi-Frimpong et al., 2016; Senganimalunje et al., 2016; Anderson et al., 2015; Dhital et al., 2015; Farnworth et al., 2015; Burgoyne et al., 2014; Lewins et al., 2014; Aymoz et al., 2013; Manyena et al., 2013; Suich 2013; Groom et al., 2012; Ngwenya et al., 2012; Silva et al., 2012; Dahlberg et al., 2009; Frost et al., 2008; Frost et al., 2007; Kgathi et al., 2006; Jones 2005; Robertson et al., 2005; Wolmer et al., 2003	1	0	0	0	1	1
	2.2	Insufficient economic support for NbS livelihoods	Limited access to economic opportunities and support mechanisms (e.g., markets, employment options, economic and labour mobility, safety nets, credit/insurance, viable alternative livelihoods) needed to enable NbS-compatible livelihoods or buffer short- or long-term losses during transition to NbS. This raises transaction and opportunity costs relative to benefits and reduces adoption/participation for some.	Insufficient economic opportunities and viable livelihood options provided to sustain NbS options.	Communities, Implementers	Implementers, Funders	In rural Zimbabwe, adoption of conservation agriculture was associated with additional labour and input costs, contributing to unequal uptake and benefit capture, with poorer households less able to sustain practices long enough to realise returns (e.g., Makate, Makate, & Mango, 2019). NbS often underappreciated the importance of factors such as roads, markets, storage, economic stability and mobility, and tenure stability) for supporting and sustaining envisaged livelihood changes and that were required to prevent livelihood loss (e.g., Frost et al., 2007; Groom & Palmer, 2012; Senganimalunje, 2016).	Hewitson et al., 2021; Llopis et al., 2021; Zulu et al., 2021; Du-Pont et al., 2020; Llopis et al., 2020; Rodenburg et al., 2020; Makate, Makate, & Mango, 2019; Mutenje et al., 2019; Snapp et al., 2019; Wekesah et al., 2019; Mugandani et al., 2019; Neudert et al., 2018; Ward, Holmes, Stringer, 2018a-b; Guerbois et al., 2017; Toth et al., 2017; Chinsamy et al., 2016; Senganimalunje et al., 2016; Farnworth et al., 2015; Tui et al., 2015; Burgoyne et al., 2014; Snyman 2014; Snyman 2013; Zulu 2013; Groom et al., 2012; Silva et al., 2012; Giller et al., 2009; Frost et al., 2007; Crane 2006; Jones 2005; Robertson et al., 2005; Wolmer et al., 2003; Wynberg et al., 2002	1	1	0	0	1	1

	2.3	NbS livelihood lock-in with macro instability	High dependence ("lock-in") on a single NbS-linked livelihood introduced or promoted, driven by narrow livelihood strategies in NbS design and implementation. When combined with macroeconomic and political instability (e.g., tourism volatility, political crises, market and carbon price fluctuations, unstable development/conservation/climate finance), this reduces resilience and increases vulnerability of affected to shocks and change.	NbS-driven livelihood lock-in, compounded by macroeconomic/political instability, reduces resilience for some.	Communities, Implementers	Implementers, Funders	A REDD+ project promoting agroforestry and reforestation in Mozambique expected future revenues from carbon and cash crops/timber but assessed viability using assumed market conditions while underestimating variability and constraints. The scheme required long-term commitment (effectively "locking in" landholders) requiring landowners to commit to maintaining trees for 100 years while concentrating income within the first seven years for carbon sequestration. This shifted the risk onto the landowners increasing their exposure to uncertainty (Groom & Palmer, 2012).	Hewitson et al., 2021; Stone et al., 2020; Snapp et al., 2019; Appiah et al., 2018; Neudert et al., 2018; Ward, Holmes, Stringer, 2018b; Gronau et al., 2017; Mutanga et al., 2017; Mutekwa et al., 2017; Dhital et al., 2015; de Koning et al., 2014; Gezon 2014; Snyman 2014; Manyena et al., 2013; Snyman 2013; Dahlberg et al., 2009; Frost et al., 2008; Spenceley et al., 2008; Frost et al., 2007; Balint et al., 2006	1	1	0	0	1	1
3. Governance: Inadequate institutions, tokenism, corruption, land insecurity	3.1	Inadequate institutions for co-governance	Governance institutions are not prepared to establish or sustain meaningful deliberative spaces and mechanisms for participatory and co-governance across the NbS cycle (planning, implementation, management, monitoring, and maintenance). As a result, historical injustices are not effectively redressed, value pluralism is not embedded, and social safeguards are weak or applied inconsistently.	Inadequate governance institutions for meanginful participatory and co-governance processes.	Communities, Implementers	Implementers	In Limpopo, South Africa, NbS negotiations and governance failed to account for the area's cultural landscape and locally significant values, practices and sites. Institutions set up for engagements were centred on economic benefits and did not allow for a full understanding of what fences would mean in terms of restricted access to socially, culturally, and economically important resources and sites (e.g., medicinal plant collection, harvesting thatch, ancestral graves). Villagers regarded the mountain as *Thaba ya badimo* ('mountain of the ancestors'), sacred for rainmaking and bringing offerings to the ancestors. Due to the NbS-related access changes, offerings done as 'acts of remembering' in respect of the significance of the mountain, could no longer be performed. This jeopardised the villagers' collective memory as cultural values/practices became distorted, with risk of being lost over time (Boonzaaier & Wels 2016).	Constant et al., 2020; Hlengwa et al., 2020; Queiros et al., 2019; Bidaud et al., 2018; Cundill et al., 2017; Mutanga et al., 2017; Mutekwa et al., 2017; Swemmer et al., 2017; Bollig 2016; Boonzaaier et al., 2016; Chinsamy et al., 2016; Dhital et al., 2015; Swemmer et al., 2015; Burgoyne et al., 2014; de Koning et al., 2014; Snyman 2014; Zuka 2013; Zulu 2013; Groom et al., 2012; Ngwenya et al., 2012; Silva et al., 2012; King 2010; Sommerville et al., 2010; Dahlberg et al., 2009; Van Damme et al., 2009; Crane 2006; Jones 2005; Robertson et al., 2005; Mutamba 2004; Kull 2002; Wynberg et al., 2002	1	1	0	0	1	0
	3.2	Weak readiness for localisation and decentralisation	Limited fiscal, political, administrative, and technical readiness to decentralise decision making and resources to ensure localisation of NbS through equitable multi-level governance. Weak intergovernmental relations reduce the ability to tailor action to heterogeneous local needs and to prioritise and protect the most vulnerable.	Insufficient fiscal, political, and administrative readiness for balanced decentralisation or multi-level governance to support equitable localisation of NbS.	Implementers, Communities	Implementers	In many cases decentralisation on paper to 'the local level' was either far to organisationally complex given existing readiness or merely translated into consolidating authority among local elites or traditional leaders without widening participation or benefit access, particularly where bribery, corruption, and complex local organisational dynamics shape outcomes (e.g., Constant & Taylor, 2020; Frost et al., 2007; Mashapa et al., 2019; Silva & Mosimane, 2012; Ward, Holmes, Stringer, 2018a-b).	Hlengwa et al., 2020; Mashapa et al., 2019; Djenontin et al., 2018; Matseketsa et al., 2018; Neudert et al., 2018; Ward, Holmes, Stringer, 2018a-b; Mutanga et al., 2017; Mutekwa et al., 2017; Bollig 2016; Boonzaaier et al., 2016; Chinsamy et al., 2016; Senganimalunje et al., 2016; Dhital et al., 2015; Swemmer et al., 2015; Lewins et al., 2014; Manyena et al., 2013; Zuka 2013; Zulu 2013; Mbaiwa 2012; Silva et al., 2012; Dahlberg et al., 2009; Van Damme et al., 2009; Frost et al., 2008; Frost et al., 2007; Balint et al., 2006; Jones 2005; Robertson et al., 2005; Wolmer et al., 2003; Kull 2002	1	1	0	0	1	0
	3.3	Tokenism reinforces corruption and harmful power	Corruption and political interference combined with blind spots and tokenistic approaches produce NbS governance arrangements dominated by powerful actors. This reinforces elite capture, entrenches existing corruption (and generates new rent-seeking behaviour), and concentrates NbS benefits to more powerful groups, while shifting costs and risks to less powerful groups.	Blind spots and tokenistic NbS approaches reinforce corruption and elite capture, concentrating benefits among powerful actors.	Communities, Implementers	Implementers, Funders	In a community woodland management NbS in the Save Valley, Zimbabwe, even though the local government conferred property rights to the local community, authority (woodland resources regulation, monitoring and rules) remained concentrated among traditional leaders and their family clan lineage networks. As a result, the chief and the village chief leaders had unrestricted access to resources, but others – particularly temporary residents – were excluded or burdened with extremely restricted usage rights (Mashapa et al. 2019).	Constant et al., 2020; Hlengwa et al., 2020; Mashapa et al., 2019; Musavengane 2019; Ward et al., 2018; Mutanga et al., 2017; Toth et al., 2017; Ward, Stringer, Holmes, 2018; Ward, Holmes, Stringer, 2018a, 2018; Bollig 2016; Chinsamy et al., 2016; Swemmer et al., 2015; Gezon 2014; Lewins et al., 2014; Snyman 2014; Manyena et al., 2013; Zuka 2013; Zulu 2013; Mbaiwa 2012; Silva et al., 2012; Sommerville et al., 2010; Dahlberg et al., 2009; Frost et al., 2007; Balint et al., 2006; Mutamba 2004; Wolmer et al., 2003; Kull 2002	1	1	0	0	1	1
	3.4	Incompatibilities across governance systems or levels	Tension, conflict and incompatibilities between customary, informal, and formal governance systems (and/or between governance levels) create uncertainty and inconsistent enforcement. For example, where biased legal or corruption impediments affect some systems/levels, frictions can cascade across institutions, undermining measures intended to promote equitable NbS processes and outcomes.	Incompatibility between governence systems (customary, informal, and formal governance) including unnaccounted for biases or corruption in one or more existing governance systems or levels.	Communities, Implementers	Implementers	In a community woodland management NbS in the Save Valley traditional leaders pushed back against local government advocating for greater involvement of local communities in NbS activities. This produced a chaotic institutional setting as villages had to choose to align with either traditional leadership or local government extension agents, while other potential local institutions (beyond traditional leadership) were neglected in NbS (Mashapa et al., 2019).	Hewitson et al., 2021; Zulu et al., 2021; Hlengwa et al., 2020; Mashapa et al., 2019; Musavengane 2019; Matseketsa et al., 2018; Neudert et al., 2018; Ward, Holmes, Stringer, 2018b, 2018; Mutanga et al., 2017; Mutekwa et al., 2017; Bollig 2016; Nyantakyi-Frimpong et al., 2016; Dhital et al., 2015; Lewins et al., 2014; Snyman 2014; Manyena et al., 2013; Zuka 2013; Zulu 2013; Mbaiwa 2012; Ngwenya et al., 2012; Van Damme et al., 2009; Frost et al., 2008; Balint et al., 2006; Wolmer et al., 2003; Kull 2002; Wynberg et al., 2002	1	1	0	0	1	0
	3.5	Land insecurity causes costs or no benefits	Unequal land tenure security and land access determines who can participate in and benefit from NbS and drives unintended consequences (e.g., evictions, appropriation of benefits, or lack of adoption or participation because of investment risk without reliable returns). Landlessness and land scarcity further exclude groups from adoption and benefit capture where NbS requires land access or control.	Land tenure insecurity and unequal land access drive unintended consequences (e.g., dispossession/appropriation of benefits) or create barriers to NbS adoption and participation for some groups.	Communities	Implementers	Conservation agriculture initiatives in Zimbabwe and Zambia showed how insecure tenure, mediated through gendered power relations, reduced women's willingness to adopt practices due to fear of losing land if yields rose. Further, the expectation or promise of higher incomes incentivised men to dispossess the land of women who had adopted conservation agriculture on their subsistence plots, and to take over traditional 'women's crops' (Wekesah et al., 2019).	Zulu et al., 2021; Benjamin 2020; Wekesah et al., 2019; Toth et al., 2017; Nyantakyi-Frimpong et al., 2016; Farnworth et al., 2015; Zuka 2013; Groom et al., 2012; Frost et al., 2008; Crane 2006	1	0	0	0	1	0

4. Resources: Insufficient resources for benefits given complexities and long return periods	4.1	Insufficient finance and resources for benefits	Limited, uneven, or unreliable access to financial resources (e.g., income, savings, credit) and essential non-financial inputs (e.g., seeds, mulch, tools, labour/time) prevents some community members from adopting, participating in, or sustaining NbS long enough to realise benefits. This constraint increases exposure to investment risk and short-term cashflow issues during the transition period before benefits accrue.	Insufficient financial and other resources for some to take risks, adopt, participate in, and sustain NbS until benefits accrue.	Implementers, Communities	Implementers, Funders	In Madagascar, a conservation agriculture study showed that high input costs and limited investment capital constrained farmers' ability to realise benefits. Farmers were encouraged to use cover crops, but reliance on manure alone limited productivity. As a result, gains could only be realised if farmers could access sufficient nutrients and investment capital, through fertiliser or other locally feasible nutrient sources, to establish productive cover crops. These kinds of financial constraints were a major issue when unemployment is high and the NbS only provides limited to no-wage employment, or no large short-term payouts (Andriarimalala et al., 2013).	Branca et al., 2021; Duffy et al., 2021; Kansanga et al., 2021; Zulu et al., 2021; Guo et al., 2020; Llopis et al., 2020; Rodenburg et al., 2020; Makate, Makate, & Mango, 2019; Makate, Makate, Mango, Siziba, 2019; Mutenje et al., 2019; Snapp et al., 2019; Wekesah et al., 2019; Mugandani et al., 2019; Ward, Holmes, Stringer, 2018a; Makate et al., 2017; Toth et al., 2017; Nyantakyi-Frimpong et al., 2016; Senganimalunje et al., 2016; Farnworth et al., 2015; Rusinamhodzi et al., 2015; Tui et al., 2015; Andriarimalala et al., 2013; Zulu 2013; Groom et al., 2012; Ngwenya et al., 2012; Silva et al., 2012; Sommerville et al., 2010; Giller et al., 2009; Spenceley et al., 2008; Frost et al., 2007; Kgathi et al., 2006; Wynberg et al., 2002	1	1	0	0	1	1
	4.2	Funds don't match complexities or returns	Available funding is misaligned with what is required to address complex baseline conditions (e.g., widespread degradation, poverty, and entrenched inequities) and with the long lead times and uncertainty of NbS returns (environmental, livelihood, and financial). This misalignment, often in scale, flexibility, duration, and allowable costs, can drive unrealistic targets, under-resourced implementation, and overstated outcomes/benefits, while shifting opportunity and transaction costs onto some and increasing the risk of unintended consequences.	Misaligned funds with innovation and investment needs given on-the-ground complexity and delayed or uncertain NbS returns.	Implementers, Communities	Funders	In Zimbabwe, a conservation agriculture initiative failed to grapple with existing levels of poverty and unequal access to finance. As a result poorer households could not absorb start-up costs or manage implementation challenges, contributing to uneven adoption and sharply divergent experiences, captured locally as '*dhiga udye* ' (dig and eat) versus '*dhiga ufe* ' (dig and die) (Mugandani & Mafongoya, 2019). An example from Madagascar showed that although the intervention provided training, equipment, and support for alternative livelihoods, these inputs did not compensate for the losses experienced through restrictions that reduced forest and bushmeat access (Bidaud et al., 2018).	Llopis et al., 2021; Queiros et al., 2019; Bidaud et al., 2018; Neudert et al., 2018; Guerbois et al., 2017; Swemmer et al., 2017; Chinsamy et al., 2016; de Koning et al., 2014; Gezon 2014; Manyena et al., 2013; Suich 2013; Silva et al., 2012; Lapeyre 2011; King 2010; Dahlberg et al., 2009; Crane 2006; Jones 2005; Wolmer et al., 2003; Wynberg et al., 2002	1	1	0	0	0	1
5. Information /Knowledge: Insufficient technology, methods, information, recognition, expected volunteerism, unequal participation	5.1	Insufficient methods-tech for deliberation with uncertainty	Limited availability, accessibility, or awareness of methods, data, and technologies to model, monitor, and learn from coupled social–ecological systems in ways that incorporate diverse value systems (economic, intrinsic, and relational), foreground distributional impacts and the needs of the most vulnerable, and transparently characterise, manage, and communicate uncertainty across evidence types.	Insufficient integrated methodologies and technologies to support deliberation across diverse values/knowledges, prioritise the most vulnerable, and transparently manage uncertainty.	Implementers	Implementers, Funders	In Namibia, a study of eight community conservancies illustrated how an NbS grounded in western-style conservation narrowed recognition of diverse values and vulnerabilities, contributing to dissatisfaction and increased human–wildlife conflict when crops were raided and no compensation was offered. The absence of compensation reduced willingness to join the conservancies and highlighted how the design of the NbS did not adequately account for diverse values attached to the landscape (Silva & Mosimane, 2012).	Queiros et al., 2019; Djenontin et al., 2018; Ward, Holmes, Stringer, 2018a; Gronau et al., 2017; Mutanga et al., 2017; Mutekwa et al., 2017; Chinsamy et al., 2016; Farnworth et al., 2015; Swemmer et al., 2015; Suich 2013; Wellard et al., 2013; Groom et al., 2012; Ngwenya et al., 2012; Silva et al., 2012; King 2010; Scanlon et al., 2009; Spenceley et al., 2008; Balint et al., 2006; Crane 2006; Jones 2005; Robertson et al., 2005; Mutamba 2004; Kull 2002	0	1	0	0	1	1
	5.2	Insufficient info-tech to avoid harm or for benefits	Uneven awareness of, or access to, relevant information and technologies among community members limits the ability of some groups to avoid unintended harms and to adopt, participate in, or sustain NbS long enough to realise benefits (e.g., information asymmetries, digital exclusion, language barriers, or inaccessible formats).	Insufficient awareness of, or access to, information and technologies to avoid harms or realise NbS benefits (including adopting, participating, and sustaining).	Communities	Implementer	In a sustainable agricultural intensification project in Malawi, youth had limited access to information and knowledge around accessing and managing land, which contributed to withdrawal from the NbS. This knowledge deficit increased vulnerability to exploitation in land transactions and constrained sustained participation (Zulu et al., 2021).	Kansanga et al., 2021; Zulu et al., 2021; Guo et al., 2020; Makate, Makate, & Mango, 2019; Mutenje et al., 2019; Wekesah et al., 2019; Appiah et al., 2018; Bidaud et al., 2018; Mugandani et al., 2019; Makate et al., 2017; Toth et al., 2017; Chinsamy et al., 2016; Farnworth et al., 2015; Groom et al., 2012; Silva et al., 2012; Lapeyre 2011; Giller et al., 2009	1	0	0	0	1	0
	5.3	Insufficient recognition of most vulnerable	Biases and blind spots, combined with limited awareness of the importance of value pluralism and distributional justice undermine the identification and prioritisation of the most vulnerable, weakens safeguard assessments, and reduces attention to historical and ongoing injustices.	Insufficient recognition of value pluralism, those most vulnerable, and of the need to contextualise safeguards to past and present injustices.	Implementers, Funders	Implementers, Funders	In conservation agriculture programmes in East and Southern Africa, interventions were frequently designed around the conceptual norm of the male-headed household and male 'primary farmer', limiting recognition of women's constraints, and weakening safeguards against gendered exclusion. In these contexts, women's ability to adopt new practices depended on resources, information, networks, market access, and entitlements to act independently, which were constrained within existing farming institutional and social arrangements (Farnworth et al., 2015).	Constant et al., 2020; Bidaud et al., 2018; Neudert et al., 2018; Ward, Holmes, Stringer, 2018a; Cundill et al., 2017; Mutanga et al., 2017; Dhital et al., 2015; Farnworth et al., 2015; Lewins et al., 2014; Zulu 2013; Ngwenya et al., 2012; Lapeyre 2011; Dahlberg et al., 2009; Robertson et al., 2005; Mutamba 2004	0	1	1	0	1	1
	5.4	Expected volunteerism and unequal participation cost-benefits	Biases and limited awareness of participation ethics and transaction costs lead to "expected volunteerism" in NbS engagement (e.g., workshops, forums, monitoring), where some groups bear disproportionate time and income losses, especially when benefits are delayed, uncertain, or short-lived.	Insufficient awareness of participation ethics and transaction costs, lead to expected volunteerism and unequal cost–benefit burdens in participatory processes.	Implementers, Communities	Implementers, Funders	In Malawi, a co-management approach to forest resources illustrated how committee members faced disproportionate time and physical burdens that competed directly with livelihood activities needed to support their families. Here insufficient attention was paid to the time and labour required to make co-management arrangements function in relation to the benefits received, reinforcing assumptions that community members have abundant free time and labour, and obscuring social and economic costs borne by those involved (Zulu, 2013).	Hewitson et al., 2021; Boonzaaier et al., 2016; Chinsamy et al., 2016; Farnworth et al., 2015; Chaderopa 2013; Zulu 2013; Silva et al., 2012; Giller et al., 2009; Van Damme et al., 2009; Robertson et al., 2005; Wolmer et al., 2003	1	1	0	0	1	1
6. Capability/Capacity: Methods monism, insufficient capabilities for epistemic justice, inadequate literacy and education	6.1	Insufficient capabilities to participate in governance	Limited, unevenly distributed capacity among local community members – especially marginalised groups – to engage meaningfully in NbS governance and procedural engagements (e.g., participatory forums, consent processes, legal/administrative requirements) create comparative disadvantages. This can reinforce power asymmetries and reduce community influence over NbS design, planning, and implementation.	Insufficient capabilities of local community members to participate in governance.	Communities	Implementers	In forest governance in KwaZulu-Natal, South Africa, weak traditional leadership and low levels of organisational experience, education and legal literacy constrained users' ability to engage effectively in the created participatory channels. This contributed to widespread rejection of regulation methods for forest resource use, reinforcing mistrust and limiting local leverage in shaping governance arrangements (Robertson & Lawes, 2005). In a community-based wildlife management initiative in Zimbabwe's Zambezi valley, women's illiteracy, limited English proficiency, and practical constraints on travelling to off-site training reduced their ability to fulfil committee roles and engage external actors (Nabane & Matzke, 1997).	Zulu et al., 2021; Hlengwa et al., 2020; Umar et al., 2020; Wekesah et al., 2019; Appiah et al., 2018; Bidaud et al., 2018; Mutanga et al., 2017; Bollig 2016; Chinsamy et al., 2016; Gezon 2014; Lewins et al., 2014; Manyena et al., 2013; Zulu 2013; Mbaiwa 2012; Ngwenya et al., 2012; Silva et al., 2012; Lapeyre 2011; Spenceley et al., 2008; Robertson et al., 2005; Wolmer et al., 2003; Nabane et al., 1997	1	0	0	0	1	0

	6.2	Insufficient capabilities for procedural processes	Implementers lack the multi-dimensional capacity needed to design and facilitate equitable procedural processes (e.g., participation and consent). This includes the ability to recognise and address epistemic injustices and to create partnerships, alliances, and engagement and governance forums that are inclusive, accessible, and responsive to diverse knowledge systems and community capabilities.	Insufficient capabilities of implementers to achieve procedural processes that recognise and address epistemic injustices.	Implementers	Implementers	In co-managed inland fisheries in Malawi, tensions between elites, traditional leaders, and government actors reduced political and local support for participatory processes. The implementers limited ability to anticipate and navigate conflicting institutions and narratives, and to define 'community' in ways that reflect local social organisation, undermined equitable engagement (Lewins et al., 2014).	Constant et al., 2020; Hlengwa et al., 2020; Appiah et al., 2018; Bidaud et al., 2018; Mutanga et al., 2017; Bollig 2016; Senganimalunje et al., 2016; Swemmer et al., 2015; Gezon 2014; Lewins et al., 2014; Manyena et al., 2013; Mbaiwa 2012; Silva et al., 2012; Dahlberg et al., 2009; Robertson et al., 2005; Wolmer et al., 2003; Nabane et al., 1997	0	1	0	0	1	0
	6.3	Literacy and education levels expose or restrict	Uneven education and literacy levels can restrict participation, employment, and benefit access in NbS for some. These disparities can also increase unintended harms and raise opportunity and transaction costs (e.g., inability to access information, comply with requirements or criteria, or negotiate terms).	Limited education and literacy of local community members expose them to costs or restrict them from benefits.	Communities	Implementers	In a mine-related biodiversity offset in Madagascar, low literacy and education constrained communities' ability to demand accountability for safeguards and standards. This included people being unaware of their rights or unable to engage effectively in negotiation (Bidaud et al., 2018).	Branca et al., 2021; Benjamin 2020; Guo et al., 2020; Umar et al., 2020; Makate, Makate, & Mango, 2019; Makate, Makate, Mango, Siziba, 2019; Wekesah et al., 2019; Makate et al., 2017; Mutanga et al., 2017; Farnworth et al., 2015; Gezon 2014; Lapeyre 2011; Dahlberg et al., 2009; Spenceley et al., 2008; Robertson et al., 2005	1	0	0	0	1	0
	6.4	Insufficient capabilities in equity theory and practice	Limited expertise in social equity concepts and practice among implementers undermines the design and delivery of effective safeguards. This includes weaknesses in identifying vulnerability and marginalisation, running deliberative processes that appropriately centre affected groups, integrating diverse knowledge systems, and translating equity commitments into implementable NbS policies.	Insufficient capabilities in social equity theory and practice for social safeguard policies and to engage with those most vulnerable.	Implementers	Implementers	A biodiversity offset in Madagascar, which involved stopping all harvesting activities from a protected area, and instead introducing alternative livelihood projects, illustrated how safeguards can fail when implementers do not adequately account for the relative importance of displaced livelihoods, or the feasibility of proposed substitutes, leaving communities exposed to substantial livelihood disruption (Bidaud et al., 2018).	Duffy et al., 2021; Zulu et al., 2021; Bidaud et al., 2018; Matseketsa et al., 2018; Ward, Holmes, Stringer, 2018b; Bollig 2016; Swemmer et al., 2015; Ngwenya et al., 2012; Van Damme et al., 2009; Mutamba 2004; Wolmer et al., 2003; Kull 2002; Nabane et al., 1997	0	1	0	0	1	0
	6.5	Insufficient capabilities for methods pluralism	Limited capacity to apply methodological pluralism constrains the ability to elicit, compare, and integrate diverse evidence and valuation approaches (economic, intrinsic, and relational). This can weaken deliberation, obscure trade-offs, and reduce transparency about uncertainty when communicating decisions across actor groups.	Insufficient capabilities for methodological pluralism that centres on value pluralism and diverse evidence types	Implementers	Implementers, Funders	In a KwaZulu-Natal participatory forest management NbS, implementors struggled to develop alternative livelihoods and incentives that completely catered for local livelihood values. As a result, the demand for forest resources continued along with community perceptions of illegitimacy and mistrust (Robertson & Lawes, 2005).	Cundill et al., 2017; Bollig 2016; Dhital et al., 2015; Swemmer et al., 2015; Wellard et al., 2013; Zulu 2013; Dahlberg et al., 2009; Van Damme et al., 2009; Balint et al., 2006; Robertson et al., 2005	0	1	0	0	1	1
7. Funding landscape: Biases, contextual ignorance, over-promising, -stating and -selling, problematising local use	7.1	Biases create external funding dependencies	Biases and blind spots in NbS finance (priorities, eligibility rules, and success metrics) under-emphasise structural change for equity (e.g., long-term institution-building, rights/tenure, redistribution, accountability). This incentivises project-based interventions, and creates dependence on external funders and intermediaries (e.g., NGOs).	Biases and blindspots ignore systemic equity change needs, and create dependencies on external resources and actors.	Funders, Implementers	Funders	In forest co-management in Malawi, top-down bureaucratic inefficiencies and decision making disrupted co-management processes, delayed benefit generation, and undermined momentum and trust. The instability of support, along with one-off handouts (e.g., training allowances, enterprise start-up grants) became a perverse motivation, or the end rather than the means, to sustained co-management benefits. For example, it was found that nearly three in four residents involved believed that an external actor was responsible for their personal development. Further, participatory forest management processes were time consuming, costly, complicated – predominantly for illiterate communities, and more of a checklist than meaningful. The resulting forest management plans were too general, harvesting routines unclear, and distributional factors related to trade-offs and benefits not addressed (Zulu, 2013).	Hlengwa et al., 2020; Appiah et al., 2018; Matseketsa et al., 2018; Cundill et al., 2017; Mutanga et al., 2017; Chinsamy et al., 2016; Dhital et al., 2015; Tui et al., 2015; Lewins et al., 2014; Manyena et al., 2013; Zulu 2013; Groom et al., 2012; Lapeyre 2011; Dahlberg et al., 2009; Frost et al., 2008; Spenceley et al., 2008; Frost et al., 2007; Wolmer et al., 2003	0	1	1	0	0	1
	7.2	Contextual ignorance due to external experts	Over-reliance on international/external experts in NbS design, implementation, and monitoring weakens contextual understanding and reduces responsiveness to local histories, power relations, and equity priorities. This is particularly problematic where NbS is framed as poverty reduction in settings shaped by deep-rooted historical injustices.	Over-reliance on international and external experts weakens or distorts contextual understanding of what equitable NbS requires.	Funders, Implementers	Funders, Implementers	In a Malawi co-management case, expatriate technical experts and consultants strongly influenced the project's setup, resulting in participatory processes that were insufficient for building grounded knowledge of local histories, power relations, and equity priorities (Zulu, 2013).	Hlengwa et al., 2020; Queiros et al., 2019; Neudert et al., 2018; Guerbois et al., 2017; Swemmer et al., 2017; Dhital et al., 2015; Farnworth et al., 2015; Gezon 2014; Chaderopa 2013; Suich 2013; Zulu 2013; Lapeyre 2011; King 2010; Giller et al., 2009; Frost et al., 2007; Jones 2005; Robertson et al., 2005; Wolmer et al., 2003	0	1	1	0	1	1
	7.3	Deep-rooted power relations dictate framings	Funding-driven framings, shaped by unequal historical and contemporary power relations, define problems and solutions in ways that problematise current local resource use while neglecting historical and ongoing injustices across scales, and privilege value monism (often economic/instrumental valuation) over plural or relational values or locally salient priorities.	Funding-driven framings rooted in unequal power relations problematise local resource use while ignoring historical and ongoing injustices across scales.	Funders, Implementers	Funders	In Madagascar, entrenched anti-fire dominant discourses among elites, the state, and external agencies framed grassland and woodland burning as backward and inherently destructive. This narrative undermined the legitimacy of local management, made policy-makers reluctant to devolve rights that would empower communities to use fire sustainably, and diverted the NbS away from community fire management to regulating community use of forests. These framings derived from colonial and post-colonial governance, where burning was criminalised through rhetoric to delegitimise and restrict local burning practices (Kull, 2002). Additionally, in the co-management of protected forests in Malawi, NbS framings placed administrative and time burdens on predominantly poor communities and positioned local livelihood practices as the degradation problem, while broader drivers of deforestation and uneven power relations were less visible in design and implementation (Zulu, 2013).	Cundill et al., 2017; Guerbois et al., 2017; Boonzaaier et al., 2016; Dhital et al., 2015; Burgoyne et al., 2014; Chaderopa 2013; Dahlberg et al., 2009; Van Damme et al., 2009; Crane 2006; Jones 2005; Wolmer et al., 2003; Kull 2002	0	1	1	0	0	1

	7.4	Culture of overpromising and overstating outcomes	Incentives (driven by biases and blindspots) in the NbS funding landscape (competition for funds, reporting pressures, and simplistic metrics) encourage overpromising and over-claiming of social outcomes without resourcing the process requirements for equity (contextualisation, and meaningful safeguards, partnership, participation, learning). This can drive unintended harms and transaction/opportunity costs onto local actors, leaving any realised NbS benefits marginal or short-lived.	Incentives promote a culture of overpromising and overstating social outcomes undermining the extent of support required for equitable and contextualised change.	Funders, Implementers	Funders	In a forest co-management case in Madagascar, NGO staff reported funding delays, difficulties identifying and reaching the households most affected, and a mismatch between planned livelihood benefits communicated externally and what community members wanted. Restrictions on forest-based activities focused on long-term global and local benefits, but immediate local costs were not mitigated. Shifting livelihoods from forest-based activities toward agriculture and weaving also raised concerns given changing extremes, particularly cyclones (Ward, Holmes, Stringer, 2018b).	Queiros et al., 2019; Ward, Holmes, Stringer, 2018b; Guerbois et al., 2017; Swemmer et al., 2017; de Koning et al., 2014; Suich 2013; Zulu 2013; Lapeyre 2011	0	1	1	0	0	1
8. **Physical/Environmental:** Harsh or unconducive environmental conditions differentially influence	8.1	Harsh topography and environment differentially influence	Rugged terrain, remoteness, poor soils, and harsh climatic conditions – and their uneven spatial distribution – constrain NbS feasibility (including NbS-linked alternative livelihoods). This can increase transaction and opportunity costs and reduce benefits for some groups, resulting in inequitable cost–benefit outcomes.	Ruggedness, remoteness, poor soils, and harsh climatic conditions reduce NbS viability and worsen cost–benefit outcomes for some.	Implementers, Communities	Implementers, Funders	In a conservation agriculture NbS in Zambia and Malawi, climatic conditions (i.e., semi-arid versus sub-humid sites) mediated economic returns and mitigation benefits. Sub-humid areas showed higher levels of mitigation benefits, while semi-arid areas showed higher economic returns from increases in crop productivity. Unless accounted for, these differences can have implications for benefit distribution (Branca et al., 2021).	Branca et al., 2021; Du-Pont et al., 2020; Bidaud et al., 2018; Toth et al., 2017; Rusinamhodzi et al., 2015; Gezon 2014; Zulu 2013; Frost et al., 2008; Wolmer et al., 2003	1	1	0	0	1	1
	8.2	Climate extremes reduce viability differentially	Climate-related extremes (e.g., droughts, floods, heatwaves, storms) reduce NbS performance and undermine expected livelihood benefits. Where exposure are uneven, some groups experience reduced returns and heightened risks, with costs outweighing benefits.	Climate-related extreme events reduce NbS viability and expected benefits for some groups.	Implementers, Communities	Implementers, Funders	In Zimbabwe, a micro-credit scheme intended to support investments in dryland conservation agricultural technologies produced unintended consequences when excessive rainfall and waterlogging caused widespread first-year failures, followed by a lack of rainfall that undermined the next season's returns. This left participating households with substantial debt and little livelihood improvement (Frost et al., 2007).	Hewitson et al., 2021; Neudert et al., 2018; Ward, Holmes, Stringer, 2018b; Rusinamhodzi et al., 2015; Aymoz et al., 2013; Dahlberg et al., 2009; Frost et al., 2007	1	1	0	0	1	1
	8.3	Biodiversity and natural resources mediate outcomes	The availability, quality, and accessibility of natural resources, species, and ecosystem functions (including seasonal wildlife movements) reduce NbS effectiveness and livelihood viability, reducing NbS benefits and creating unintended harms (e.g., crop/livestock losses) for some.	Unequal biodiversity and natural resource availability/access reduces NbS benefits or drives unintended consequences for some.	Implementers, Communities	Implementers, Funders	In Menabe, Madagascar, a community-managed forest initiative linked payments disbursed to forest condition and relative performance across community groups. However, those families with smaller forest areas and poor biodiversity always gained fewer benefits as they could not compete against those with larger forests and higher biodiversity. Families and individuals living close to the forest areas experienced high opportunity costs as they could not expand their agricultural land into the forest areas. They therefore had to put more time into alternative options which reduced their time available to compete, and thus reduced the benefits they received (Sommerville et al., 2010).	Hewitson et al., 2021; Neudert et al., 2018; Mutanga et al., 2017; Dhital et al., 2015; Sommerville et al., 2010; Frost et al., 2008	1	1	0	0	1	1
	8.4	Harsh topography and environment disincentivise safeguards	Remoteness and ruggedness disincentivise implementers to conduct meaningful social including safeguard baseline or monitoring assessments, and are used to justify reduced engagement with marginalised or hard-to-reach groups, weakening safeguards and accountability.	Remoteness and ruggedness disincentivise meaningful social safeguard assessment, monitoring, and engagement with the most vulnerable.	Implementers, Communities	Implementers, Funders	In Madagascar, difficult access to remote sites across rugged terrain was associated with rare site visits and unreliable monitoring, limiting the ability to assess environmental and social impacts in practice (Bidaud et al., 2018).	Bidaud et al., 2018; Ward, Holmes, Stringer, 2018b; Dhital et al., 2015; Wolmer et al., 2003	1	1	0	0	1	1
	8.5	Disease and illness modulate benefits	The prevalence and distribution of disease and ill-health reduces time and labour capacity to adopt, participate in, or sustain NbS. Health burdens can therefore limit benefit realisation and exacerbate inequities.	The prevalence and uneven distribution of disease and ill-health reduces benefits for some and can limit NbS adoption and participation.	Implementers, Communities	Implementers, Funders	In an agroecology project in Malawi, HIV-affected households experienced persistently reduced ability to realise full benefits because caregiving demands and illness episodes constrained consistent engagement and labour allocation, even where some interventions could, in principle, reduce physical labour requirements (Nyantakyi-Frimpong et al., 2016).	Nyantakyi-Frimpong et al., 2016	1	1	0	0	1	1
Total number	***32***								21 66	27 84	7 22	2 6	28 88	22 69

Table 3. Emerging themes of recommendation for enabling social equity in NbS

#	Emerging theme	Description	Illustrative citations
1	Represent multidimensional and plural values and value systems	Represent reciprocal, relational, cultural, spiritual, symbolic, biocultural, and local livelihood and socio-economic values in NbS benefit sharing, rather than only privileging economic or instrumental values (or a subset of these values) that are important to local survival and livelihoods. Here there is also a need to better reflect the priorities of vulnerable social groups including women, youth, and other overlooked groups.	Boonzaaier et al., 2016; Constant et al., 2020; Cundill et al., 2017; Hewitson et al., 2021; Scanlon et al., 2009; Silva et al., 2012; Ward et al., 2018
2	Integrate diverse forms of knowledge and information as evidence	Across NbS phases, integrate and recognise Indigenous Knowledge and Local Knowledge, qualitative social science (including participatory and arts-based methods), and transdisciplinary approaches and evidence into the mainstream scientific platforms dominated by natural science.	Constant et al., 2020; Llopis et al., 2020; Llopis et al., 2021; Swemmer et al., 2017; Van Damme et al., 2009
3	Focus on locally relevant finance, incentives, safety nets, and land security	Focus on locally appropriate incentives, financial support, insurance, safety nets, affordable alternatives, and land security to prevent poorer households from experiencing NbS transition costs and risks.	Branca et al., 2021; Crane 2006; Du-Pont et al., 2020; Frost et al., 2007; Groom et al., 2012; Neudert et al., 2018; Rodenburg et al., 2020; Senganimalunje et al., 2016; Sommerville et al., 2010; Suich 2013; Ward et al., 2018; Zulu 2013
4	Create safe multi-actor networks and spaces around trade-offs and synergies	Create safe spaces for diverse local and external actors to deliberate priorities, trade-offs, and differing understandings of what counts as equitable.	Ajayi et al., 2016; Crane 2006; Dhital et al., 2015; Farnworth et al., 2015; Frost et al., 2007; Mashapa et al., 2019; Mutanga et al., 2017; Mutekwa et al., 2017; Queiros et al., 2019; Rodenburg et al., 2020; Swemmer et al., 2015; Ward et al., 2018
5	Use facilitation to foster capability, collaboration, trust, and transparency	Use transparent facilitation, sustained communication, capability building for co-governance, and support for accountable and legitimate local institutions.	Balint et al., 2006; Chinsamy et al., 2016; Dahlberg et al., 2009; Frost et al., 2007; Gezon 2014; Hlengwa et al., 2020; Manyena et al., 2013; Mutamba 2004; Robertson et al., 2005; Scanlon et al., 2009; Snyman 2014; Suich 2013; Zulu 2013
6	Focus on poverty and vulnerability	NbS should explicitly integrate poorer and more marginalised groups through pro-poor design, targeted financial support or incentives, in some cases a focus on social empowerment and development first, and by ensuring costs and risks are not shifted onto those most vulnerable.	Kgathi et al., 2006; Frost et al., 2008; Mbaiwa 2012; Makate et al., 2017; Makate et al., 2019; Spenceley et al., 2008; Ward et al., 2017