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(REVIEW ARTICLE)

Community versus donor and implementer-defined success metrics in climate mitigation and adaptation projects: A systematic literature review of what matters

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Abstract

The definition of mitigation and adaptation project success is sometimes problematic, especially when donor agencies and implementing organizations' metrics are misaligned with those of vulnerable communities they are designed to serve. In evaluating their success, climate change mitigation and adaptation strategies depend on the metrics and indicators used to define and track them. A systematic literature review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to understand what communities may define as project success, as compared to what donors and implementers may define as project success across regions. The review finds a notable difference that donors and implementers tend mainly to focus on output-oriented indicators, such as the number of beneficiaries reached and activities completed, while communities define success in outcomes, process-oriented terms, such as access to resources, services and income stability. Further, the review notes that monitoring and evaluation systems in climate projects are predominantly output-focused, poorly integrated across governance levels and insufficiently participatory, which makes it difficult for them to capture community-level outcomes upon which long-term adaptation sustainability depends. The differences between community and donor metrics are shown to be a governance problem rather than a technical implementation challenge, with donor-dominated project design and less incorporation of Local Knowledge and community co-design and locally defined project success. The review calls for an integrated definition of metrics from both donors and implementers, as well as communities that foster climate project sustainability. It also advocates for the reorientation of climate monitoring and evaluation towards locally led, outcome-oriented and a multi scale indicator framework that empowers the very communities they intend to serve to define and own climate projects.

Keywords: Climate Mitigation and adaptation; Success Indicators; Community-defined metrics; Donor-defined metrics; Implementer-defined metrics; Monitoring and Evaluation

1. Introduction

Climate change has posed challenges and continues to threaten human livelihood and the environment through floods, heatwaves and droughts (Van Der Geest et al., 2019) which has called for urgent action to combat its impacts(UN, 2015). Various mitigation and adaptation strategies have been implemented through projects in vulnerable communities(Badji et al., 2022). However, tracking and assessing climate change adaptation actions, progress and impact requires the use of effective mitigation and adaptation indicators and metrics. When applied appropriately, adaptation indicators and metrics can enhance our understanding of what strategies work and what do not work, why and under which

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circumstances, which may guide the learning process of sustainable mitigation and adaptation efforts(Leiter et al., 2019). Hence, Westoby et al., (2021) adds that given that the impacts of climate change are experienced in local communities, project design and implementation for mitigation and adaptation must be done in places of vulnerability to attain sustainability, even though this is not the case on the ground.

Monitoring & Evaluation (M&E) although limited by resources in most NGOs and public institutions is one of the primary systems in climate project implementation for both external and internal functions that reveals a focus on project outputs, outcomes and impact(indicators and metrics) (Clough, 2018). Evidence shows that (M&E) systems are rarely programmed and implemented across governance levels and sectors leading to lack of knowledge and practice regarding the definition and use of adaptation indicators and metrics from which to effectively learn (Clough, 2018; Goonesekera & Olazabal, 2022). In institutions were indicators or metrics of success are defined, Brown et al., (2018 and Dinshaw et al., (2014) highlights that the M&E of development projects and programmes should to integrate different qualitative(outcomes - yield produced) and quantitative (output - such as number of beneficiaries) methods to monitor and evaluate adaptation as there is no single solution method even though (Donatti et al., (2020) in their study found that only 29% of all projects evaluated presented indicators to track both outputs and outcomes. A large majority of indicators focus on implementation aspects (outputs) with limited attention to outcomes (Goonesekera & Olazabal, 2022). Likewise, Key Performance Indicators (KPIs) are mainly related to adaptation strategies as compared to mitigation strategies (Mosca et al., 2023). Adaptation is more complicated to measure as there is a limited and fragmented set of common indicators to be used to track progress (Donatti et al., 2020; Morecroft et al., 2019). There has, however, been progress in the monitoring and evaluation of both adaptation and mitigation measures, which should integrate the needs of vulnerable communities to avoid conflict between different objectives, with great emphasis on testing the effectiveness of proposed strategies(Morecroft et al., 2019).

This review aimed at providing systematic evidence, which remains limited on how communities define success in climate change mitigation and adaptation projects and how they compare with donors and implementing organisations indicators and metrics. It also provides implications that may impact effectiveness, community ownership and long-term sustainability of climate projects.

2. Methodology

2.1. Study Design

This study employed a systematic literature review methodology through the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) four stage (identification, screening, eligibility and inclusion/exclusion) was applied. This method is preferred for its capacity to provide transparent, rigorous and reproducible results(Alharbi et al., 2024; Islam et al., 2025). A thematic narrative synthesis approach was employed, which enabled systematic identification of convergent themes and claims across the literature (Akramul Kabir, 2024; Thomas & Harden, 2008)

2.2. Identification, Screening and Eligibility

A systematic search on Scopus, Google Scholar, Web of Science and JSTOR of peer-reviewed literature was conducted. The search applied across titles, abstracts, full text and keyword fields for words such as ("climate change adaptation" OR "climate mitigation") AND ("success indicators" OR "monitoring and evaluation" OR "metrics" OR "M&E") AND ("community" OR "beneficiaries") AND ("donor" OR "implementer" OR "project design"). The Database searches and supplementary manual searches yielded a combined total of 4,891 records at the identification stage and 13 records were added through citation tracking of key included studies and review of grey literature. 1,312 duplicate records were removed with 3,632 records subjected to title and abstract screening and 2,974 were excluded on grounds of thematic irrelevance, such as absence of community-level and/or institutional analysis of success definitions. The remaining 658 records were assessed for full-text and 547 were excluded due to insufficient focus on the community-donor metric divergence or similarity, absence of empirical content or/ lack of full-text availability. A final 111 studies were retained for thematic synthesis, and only 54 published between 2015 and 2026 formed the primary base of evidence.

2.3. Inclusion and Exclusion

Studies were eligible for inclusion with criteria such as (i) written in English, (ii) published in a peer-reviewed journal, (iii) addressed measurement, evaluation and /or definition of success in climate change adaptation or mitigation projects, (iv) engaged with community-level perspectives on success or/and examined donor and implementer definitions of project success, (v) employed reproducible methodologies. Studies were ineligible using the following criteria, (i) those that focused on climate impact science without engagement with project success criteria and evaluation from both communities and donors, (ii) addressed M&E in non-climate development settings, (iii) were

conference abstracts and editorial pieces, (iv) inaccessible in full-text format, (v) limited to technical guidance documents without empirical or theoretical analysis.

2.4. Data Extraction

Data were extracted and analysed using evidence on community-defined success indicators, evidence on donor- or implementer-defined metrics, findings on the divergence and/or alignment of community and donor metrics, and factors driving the divergence and/or alignment. Argument thematic synthesis was organized using the content and character of community-defined success indicators and the structure and limitations of donor and implementer metrics.

3. Findings and discussions

Most scholars agree that adaptation success, as defined by communities, is more about the continuity of relationships among people, institutions and place as compared to that of implementors or donors who prioritize technical design and short-term. In other words, there is a disconnect between donor metrics and those of local communities, noting that projects deemed effective by external agencies were often described by communities as exclusionary or unsustainable with different expectations(Mills-Novoa, 2023; Robinson et al., 2026; Totin et al., 2025; Westoby et al., 2020, 2021a). While Szaboova et al., (2023) and Samaddar et al., (2021). argue that indicators such as better housing conditions, healthcare access, access to resources, community skills and training and income changes are defined as success in adaptation and mitigation in climate vulnerable communities reflecting local needs and contexts without much dependence on external agencies. Fraser et al., (2024) contend that donor metrics often focus on quantifiable outputs, such as the number of beneficiaries or activities conducted, thereby overlooking deeper community impacts. Additionally, Stadelmann et al., (2015) observe that donors emphasize numeric metrics such as the number of people reached or activities conducted, as well as wealth saved or health improvements, as a measure of achievements with Tortajada, (2016) adding that NGOs tend to focus on targets rather than the process, which may lack direct links to community well-being. This indicates, divergence in the definition of community indicator success from donor-defined metrics.

Community participation to lead and get involved in the planning, design and implementation process (co-designing) of community-based adaptation initiatives or indicators is either absent or limited (not comprehensive) even though projects are framed as participatory, Manda et al., (2024), the study suggests that project designs are largely donor and policy-driven, guided by implementation manuals and predefined funding criteria rather than by Indigenous and Local Knowledge (ILK). Masud-All-Kamal & Nursey-Bray (2022), further highlight that donor preferences dominate the planning of any project. As such, most NGOs do whatever their funders ask them to do by defining and specifying project activities and outcomes to meet donor criteria to receive funds for addressing community needs. In other words, the partner organizations are only responsible for implementing design in the assigned areas by the donor, and they do not influence the design itself. Therefore, project implementers focus on the quantity (target) of work rather than the quality (target) of work or the quality (process). Similarly, Hallegatte & Engle (2019) note that process-based metrics that focus on the quality of a project's design and implementation are more likely to generate resilience indicators.

Even though globally, including Zambia, evidence indicates differences in definitions of success by donors or implementers and community members, Maninga, (2025); Mweemba et al., (2025) suggest that indicators such as access to education (literacy rate), access to alternative non-agricultural income (employment rate), and adoption of improved agricultural practices (fertilizer, manure, herbicide use, improved maize seed, and intercropping), reduced reliance on unclean water sources, increased proportion of households cultivating gardens, and enhanced income generation, travel distance to access water and the creation of a reliable water source for households raising livestock all defined what success between project implementers and community members. These results may be attributed to their methodology (mixed methods-interviews and survey) in which project implementors may have reported such metrics when in fact the case on the ground may have had mixed feelings of both success and failure as reported by beneficiaries. Arguably, research also suggests that in urban areas, even though some public and private institutions collaborate to transform communities with indicators such as providing potable water, education on crisis prevention, tree planting, improving of drainage facilities, building affordable houses, and creating jobs. Initiatives face resistance due to not meeting or targeting the immediate needs of people, such as offering interest-free loans to support during crises and providing financial support(grants), which may not be the focus of the implementors due to donor requirements (Eshun & Denton, 2022).

The gap between community-defined indicators and donor metrics may risk oversimplifying complex adaptation processes, potentially leading to ineffectiveness of climate mitigation and adaptation strategies. Therefore, indicators & metrics for climate change adaptation must be defined across different geographic scales, sectors, and scopes of

practice(Arnott et al., 2016) and because vulnerabilities vary across regions, rural and urban communities need their own defined different indicators to build local capacity(Tyler et al., 2016) even as (Mills-Novoa, 2023) confirms that success is not uniformly defined in their study to access what happens to projects when they end across 10 communities and that criteria ranges as reflected the different nature of the project interventions, political priorities, and socio-cultural dynamics. Additionally, adaptation should be locally led, communities must drive their own agendas, and donors and implementers should become facilitators of resources to empower capacity of communities and help achieve local objectives to be achieved(McNamara et al., 2020). Likewise Makondo & Thomas, (2018; Rahman et al., (2023) and Westoby et al., (2021b) amplifies that local people should determine their own adaptation futures and ensure limited funding resources are utilised in meaningful ways through institutions, social networks, local knowledge and coping mechanisms that has been transmitted from one generation to the other, local realities, local vulnerability contexts and inequalities, local metrics for measuring "success", and local agendas which should be supported or enabled by external agencies(Westoby et al., 2021b). Climate mitigation and adaptation projects may only be sustainable when community members are willing to participate in their activities whose outcomes are defined by their pressing needs, as participation fosters a sense of ownership(Buchori et al., 2022; Nkhuwa, 2024). It is difficult to plan for transformative adaptation solutions if they do not align with local needs and values and a consensus is required on reckoning and negotiating the interests of both donors and communities(Mills-Novoa & Mikulewicz, 2025). A community-driven participatory methodology combining dialogue and mutual understanding for strategic planning may create a widespread buy-in from stakeholders from the community (Cintron-Rodriguez et al., 2021; Conway et al., 2019). Negotiations must in fact, start from donors, the government and partner NGOs to make adaptation initiatives effective and sustainable by doing so, the output-intensive monitoring processes may be integrated with environmental, social, and economic(outcome/impact) indicators which foster sustainability (Coger et al., 2021; Goonesekera & Olazabal, 2022).

4. Conclusion and implication

The literature presents divergent views on what donors and implementers measure as the success of climate projects, compared with what communities or beneficiaries deem successful. This reflects governance irregularities in the structure of international climate finance and project implementation, where donor agencies define the criteria of success, implementing organizations manage projects to meet donor funding and communities receive interventions or strategies whose design, logic and evaluation frameworks have been predetermined mainly by donors and implementers. Even though community participation in climate projects is mainly absent, limited, or sometimes tokenistic or superficial, it is framed as participatory while remaining guided by implementation guidelines and funding criteria. This misalignment undermines projects sustainability which compromises the transformative potential of climate strategies, erodes community trust and ownership.

It is also worth noting that because vulnerabilities, capacities and priorities vary across regions, sectors, community types and socio-cultural contexts, adaptation indicators must be locally grounded and participatorily defined by affected communities. Therefore, predetermining and practicing standardized and output-focused donor metrics across diverse implementation contexts may risk generating misleading adaptation strategies, that compromise their effectiveness. It is from local community and project contexts that M&E frameworks can be developed to capture meaningful adaptation outcomes and impacts that determine which intervention strategies address immediate and long term needs rather than abstract adaptation targets in vulnerable communities, as most projects deemed successful by implementing agencies are frequently described by communities as unsustainable and disconnected from local realities and needs.

Communities that are empowered to define their own climate adaptation agendas, articulate their own metrics of success, and govern their own monitoring processes are more likely to generate strategies that cater to local needs, are socially inclusive, and are sustainable beyond project closure. This has important implications for adaptive governance and for the conditions under which institutional bottom-up decision-making can generate more durable climate resilience than top-down-designed projects. This review also demonstrates that M&E systems should integrate both qualitative outcome indicators and quantitative output metrics and that adaptive climate project management(agile) frameworks may be more appropriate to the uncertainty of climate change. This contributes to the theoretical literature on the relationships among monitoring, learning and adaptation effectiveness.

This should lead international donor agencies and multilateral climate finance institutions to reconsider reporting requirements, fund disbursement criteria and project approval frameworks redesigned to encourage outcome and impact measurement, reward community co-design processes and create space for locally defined success indicators alongside donor-specified metrics and must facilitate community-led agendas by providing resources and technical support. For implementing organizations this requires project design methodologies that begin with participatory vulnerability and priority assessments that include Indigenous and Local Knowledge and community dialogue and

mutual understanding. Implementing organizations must resist the pressure to define project activities and metrics primarily to satisfy donors and develop institutional cultures and donor negotiation strategies that preserve space for community-responsive project designs.

Governments must review and integrate multi-scale M&E frameworks into National Adaptation Plans to accommodate different indicator sets across various regions and sectors. The National M&E systems must bridge the gap between international reporting and the locally led adaptation success criteria that transform communities. This can be done by collecting data on livelihood and well-being outcomes and institutional reforms to ensure that community feedback informs the national adaptation strategy.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that they are not aware of any competing financial interests or personal relationships that may have influenced the work described in this document.

Statement of ethical approval

This study is a review of published literature and did not involve human or animal subjects. Therefore, ethical approval was not required.

Statement of Informed Consent

Due to the nature of this work (secondary analysis of peer-reviewed published data), informed consent is not applicable.

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