



ANIMATION-BASED COMMUNICATION, EDUCATION AND PUBLIC AWARENESS FOR COLLABORATIVE MANAGEMENT IN HOANG LIEN NATIONAL PARK, VIETNAM

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ABSTRACT

Effective communication, education and public awareness (CEPA) are essential for collaborative management of protected areas, particularly in culturally and linguistically diverse contexts where conventional, lecture-based approaches often have limited impact. This paper presents a practice-based case study from Hoang Lien National Park, an ASEAN Heritage Park in northern Vietnam, examining the use of animation-based communication as a CEPA tool to support biodiversity awareness and stakeholder engagement. Between 2023 and 2025, a short, multilingual animation was co-developed using locally relevant storytelling and visual representations of the park's ecosystems and was integrated into training and outreach activities with park staff, teachers, and ethnic minority communities in the buffer zone. Data from pre- and post-training assessments, participant evaluations, focus group discussions and direct observations indicate improved understanding of biodiversity values and climate change impacts, high levels of engagement, and positive perceptions of the approach compared to conventional communication methods. The animation also supported dialogue between park authorities and local communities by providing an accessible basis for discussion. The findings suggest that culturally adapted animation can be a useful and scalable addition to CEPA strategies in protected areas facing linguistic diversity and varying literacy levels, when embedded within facilitated and participatory engagement processes.

Keywords: biodiversity awareness, protected area management, ASEAN Heritage Parks

INTRODUCTION

Protected areas are central to global biodiversity conservation efforts and their effectiveness increasingly depends on the quality of engagement between management authorities and local communities (Bennett et al., 2017; Carlsson & Berkes, 2005; Sterling et al., 2017). Beyond biodiversity protection, contemporary protected area governance is expected to address social equity, cultural heritage and climate resilience, particularly in landscapes where people and nature are closely intertwined (Sangha et al., 2025). In such contexts, communication, education and public awareness (CEPA) practices are widely recognised as foundational mechanisms for fostering shared understanding, trust and collaborative management (Bennett et al., 2017; CBD, 2020; UNESCO, 2017). By integrating storytelling, visuals and emotions, animation

makes complex ecological concepts more accessible and engaging, especially for non-specialist audiences (Dahlstrom, 2014; Sowards et al., 2017). Evidence suggests that locally context-driven, visual and story-based messages are more effective than abstract, text-heavy methods in capturing attention and encouraging engagement (Bennett et al., 2017).

Despite growing awareness of the importance of participatory communication, CEPA activities in many protected areas still rely on traditional methods such as presentations, printed materials and one-way information delivery. These methods prioritise information delivery over participation and often overlook linguistic diversity, varying literacy levels and culturally relevant learning approaches (Bennett et al., 2017; Reed et al., 2018). Consequently, they often have limited impact on stakeholder engagement, perceived

legitimacy and long-term governance (Bennett et al., 2017; Reed et al., 2018; Sterling et al., 2017).

In culturally diverse contexts, animation offers additional advantages by incorporating local languages, symbols and storytelling traditions, thereby connecting scientific and Indigenous Knowledge Systems (Bloomfield & Manktelow, 2021). This could strengthen trust and legitimacy – key elements of cooperative governance (Dahlstrom, 2014; Fischhoff & Scheufele, 2014; Tsang, 2023). Despite this potential, the use of animation as a CEPA tool in protected area management has not been fully studied in the conservation field (Bloomfield & Manktelow, 2021; Sowards et al., 2017).

These limitations are particularly evident in developing countries, especially Southeast Asia, where protected areas often overlap with the territories of Indigenous Peoples and ethnic minority communities (Berkes, 2009; Sikor & Chan, 2007). In such a context, communication must adapt to a multilingual environment, strong oral traditions and diverse knowledge systems. This requires CEPA approaches that are participatory, culturally-driven and emotionally engaging, rather than purely technical (Bennett et al., 2017). However, empirical evidence for such approaches in ASEAN Heritage Parks remains limited (Sterling et al., 2017).

Hoang Lien National Park (HLNP) in northern Vietnam provides a relevant context to address this gap. Designated as an ASEAN Heritage Park, the park is characterised by high biodiversity and significant cultural and linguistic diversity. The park and its buffer zone are home to multiple ethnic minority groups whose livelihoods and cultural identities are closely linked to forest ecosystems. HLNP faces increasing pressures from climate change, tourism development and resource use, underscoring the need for inclusive and effective conservation communication (Hoang & Wesseler, 2024; Sikor & Chan, 2007).

Previous CEPA activities in the park largely relied on standardised training materials and lecture-based approaches (Bennett et al., 2017; Reed et al., 2018). Stakeholder consultations prior to this study indicated that these methods were often perceived as overly theoretical, insufficiently engaging, and poorly adapted to local realities, particularly for community members with limited Vietnamese language proficiency. Similar challenges have been documented in other protected areas, where communication approaches fail to resonate with local audiences and reinforce perceptions of top-down management (Kirschke & Kosow, 2025).

This paper presents a case study of an animation-based communication initiative implemented in HLNP as part of a broader CEPA and capacity-building programme. The paper is intended as a practical contribution for protected area managers, CEPA practitioners, and educators working in culturally and linguistically diverse contexts. It examines how a culturally adapted, multilingual animation was designed, implemented and used in real management settings, and what outcomes were observed in terms of understanding, engagement and dialogue among park staff, teachers and local communities. The paper examines what worked and did not work, and why, and reflects on the conditions under which animation-based communication can add value to existing CEPA approaches. By documenting applied experience from an ASEAN Heritage Park, the study aims to provide transferable lessons to inform the design and integration of innovative, inclusive CEPA tools in protected areas facing similar communication and governance challenges, and is one of the first empirical, practice-based evaluations of animation-based CEPA tools in an ASEAN Heritage Park context.

METHODS

Research design

The study was implemented between December 2023 and May 2025 in HLNP and its buffer zone. A mixed-methods approach was employed, combining descriptive quantitative data from training assessments with qualitative insights from participant feedback, focus group discussions and direct observation.

Given the project timeframe, the study focused on short-term and intermediate CEPA outcomes, including improved understanding, engagement and willingness to participate in collaborative conservation efforts.

Study area and context

HLNP is located in Lao Cai Province in northern Vietnam, within the Hoang Lien Son mountain range near the border with China (Figure 1). The park covers approximately 29,845 hectares and encompasses steep mountainous terrain, diverse forest ecosystems, and elevations ranging from low montane areas to the summit of Mount Fansipan, the highest peak in Indochina. Owing to its outstanding ecological significance, HLNP was designated as an ASEAN Heritage Park, reflecting its regional importance for biodiversity conservation and ecosystem services.

The park and its surrounding buffer zone are home to several ethnic minority groups, notably the H'Mong, Dao, Giay and Tay. These communities maintain close socio-cultural and economic relationships with forest

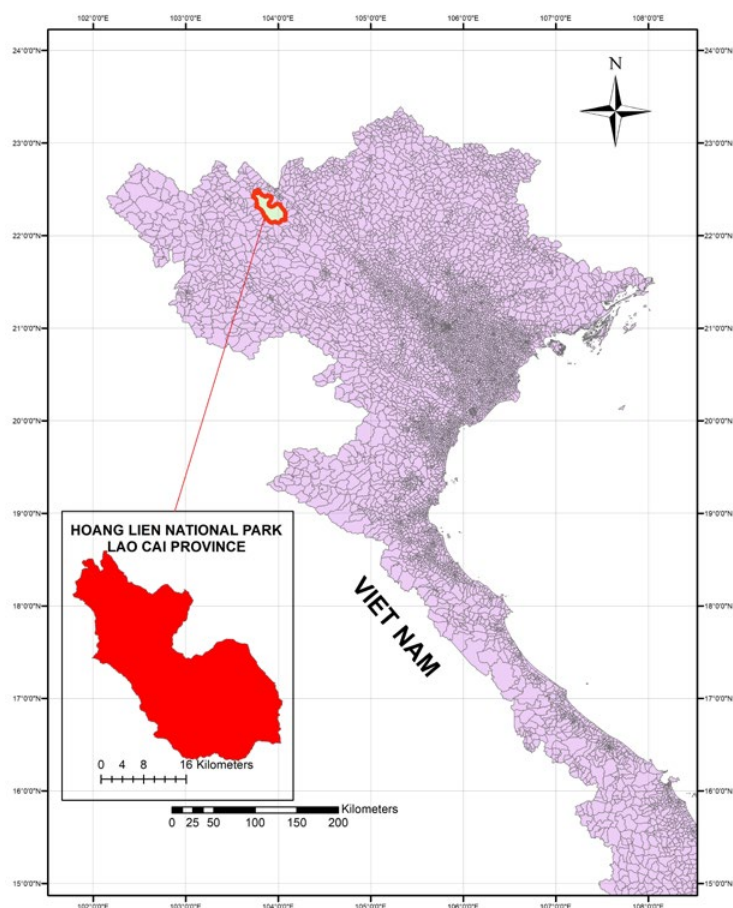


Figure 1. Study location. Acknowledgement: This work was supported by the funding from ASEAN Centre for Biodiversity: [Grant Number 2023 VNM HLNP 28].

ecosystems through traditional agricultural practices, collection of non-timber forest products, and cultural rituals linked to natural landscapes. Livelihood options in the buffer zone remain limited, and many households are classified as poor or near-poor, with increasing dependence on natural resources and vulnerability to environmental and economic shocks.

Management of HLNP faces the dual challenge of conserving biodiversity while addressing the livelihood needs and aspirations of local communities. While community-based forest protection groups and ecotourism initiatives have contributed to improved relations in recent years, tensions persist due to restrictions on resource use and limited participation of local people in decision-making processes. These challenges are further compounded by climate change, which has intensified extreme weather events, affected agricultural productivity, and increased pressures on forest ecosystems (Dudley, 2008; Ervin et al., 2010).

Communication and engagement between park authorities and local communities have historically relied on conventional training and awareness-raising

activities, often delivered through lectures, printed materials and technical language. Stakeholder consultations conducted prior to this study indicated that these approaches were frequently perceived as overly theoretical, insufficiently engaging and poorly adapted to local contexts. Language barriers posed a particular challenge, as many community members have limited proficiency in Vietnamese and rely primarily on oral communication.

Teachers and local educators were identified as potential multipliers for conservation awareness, however they reported limited access to engaging and locally relevant teaching materials on biodiversity and climate change. Park staff similarly highlighted constraints in communication skills and tools when working with diverse stakeholder groups. These gaps underscored the need for alternative CEPA approaches capable of addressing linguistic diversity, varying literacy levels and culturally embedded ways of learning.

Development of the animation-based CEPA tool

An animation-based communication tool was developed and implemented as part of a broader capacity-building and community outreach initiative in HLNP between 2023 and 2025. The animation was integrated into a series of training and awareness-raising activities targeting three main stakeholder groups: (i) park management staff and personnel from associated conservation and tourism units; (ii) primary and secondary school teachers; and (iii) local households living in the park's buffer zone. The tool was developed through an iterative and participatory process involving conservation practitioners, educators, and representatives from HLNP. The design process was guided by three core principles: cultural relevance, accessibility, and clarity of conservation messages (Dahlstrom, 2014; Fischhoff & Scheufele, 2014).

The animation aimed to communicate (i) the natural and cultural values of HLNP, (ii) observed and projected impacts of climate change on local biodiversity, and (iii) the importance of collective action and collaboration in conservation. Storytelling techniques were used to translate scientific concepts into relatable narratives, drawing on local ecological symbols and culturally familiar elements. Key characters were inspired by emblematic species and landscapes of the park, serving as narrative anchors to convey conservation messages.

To address linguistic diversity and literacy constraints, the animation was produced in multiple language formats: a H'Mong-language version with Vietnamese

Table 1. Overview of the animation-based CEPA

Component	Description
Study period	December 2023 – May 2025
Protected area	Hoang Lien National Park (ASEAN Heritage Park)
Target groups	Park staff; teachers; buffer-zone community members
Number of participants	90 (53 men, 37 women)
Animation format	7-minute animated film
Languages	H'Mong (with Vietnamese subtitles); Vietnamese (with English subtitles); Vietnamese
Key themes	Biodiversity values; climate change impacts; collaborative conservation
Delivery mode	Animation screening followed by facilitated discussion
Complementary materials	Posters, leaflets, discussion prompts

subtitles, a Vietnamese-language version with English subtitles, and a Vietnamese-only version (Table 1). The narrative structure and visual symbolism are intentionally designed to reflect the local cultural context, supporting both understanding and intercultural coexistence among different ethnic groups.

The animation lasted approximately seven minutes, balancing content richness with attention spans identified during preliminary consultations.

Despite efforts to ensure diverse participation, the proportion of men participating remains slightly higher (59 per cent). This reflects local dynamics, where men are more frequently involved in formal training activities. However, this imbalance is acknowledged as a limitation, particularly considering the significant role women play in household-level decision-making regarding the use of natural resources.

Data collection

Data collection focused on capturing changes in understanding, engagement and perceptions related to the animation-based CEPA intervention. *Community perception surveys are a robust approach to understanding local attitudes and tailoring communication strategies (Parker et al., 2022).* Four main data sources were used:

Simple assessment tools were administered before and after training sessions to gauge changes in participants' understanding of biodiversity values, climate change impacts and conservation concepts. Pre- and post-training assessments consisted of short, structured tools with 6–8 questions covering key concepts on biodiversity values, climate change impacts and conservation roles. Depending on participant literacy, assessments were administered either orally or in simple written form using a three-point self-assessment scale (“do not understand”, “partly understand”, “understand well”). End-of-training evaluation forms used similar structured

questions and open-ended prompts to capture perceptions of clarity, engagement and usefulness of the animation compared to previous communication approaches.

Focus group discussion (FGD) participants were purposively selected to represent different stakeholder groups and gender balance, and each discussion lasted approximately 60–90 minutes. FGDs with community members were conducted primarily in H'Mong with support from local facilitators, while those with teachers and park staff were conducted in Vietnamese. Qualitative data from FGDs and observation notes were coded thematically by the research team, with coding categories discussed and refined jointly to ensure consistency and shared interpretation. Given the practice-based aim of the study, analysis focused on identifying clear patterns and recurring themes rather than exhaustive qualitative saturation.

Researchers documented observations during training sessions, noting participant engagement, interaction patterns, and responses to the animation and facilitated discussions. These observations provided contextual insights that complemented self-reported data.

Data analysis

Quantitative data from pre- and post-training assessments and evaluation forms were analysed using descriptive statistics, focusing on changes in reported understanding and perceived effectiveness across stakeholder groups. Given the exploratory and practice-based nature of the study, no inferential statistical tests were applied.

Qualitative data from FGDs and observations were analysed using thematic analysis (Clarke & Braun, 2017). Transcripts and notes were coded inductively to identify recurring themes related to comprehension, engagement, cultural relevance and implications for collaborative management. Themes were then compared across stakeholder groups to identify convergences and differences in perceptions.



Figure 2. Teachers' training workshop using animation screening. Credit: Authors.

RESULTS

Participant profile and stakeholder coverage

The animation-based CEPA intervention reached 90 participants across three key stakeholder groups involved in protected area management and conservation outreach in HLNP. These included 30 park staff, 20 teachers and 40 community members from buffer zone villages of Hoang Lien commune. Participants represented a mix of genders and age groups, with ethnic minority participants constituting all community participants and a substantial proportion of teachers and park staff.

Community participants were predominantly from H'Mong ethnic groups and were largely dependent on small-scale agriculture and forest-related livelihoods. Many reported limited formal education and relied primarily on oral communication in their daily lives.

Teachers and park staff generally had higher education levels but reported limited access to engaging, locally adapted materials for biodiversity and climate change communication.

Perceived effectiveness of animation-based communication

Across all stakeholder groups, participants rated the animation-based approach as more effective and engaging than previous communication methods used in the park.

Participants consistently reported that the visual storytelling format made information easier to understand. Community members emphasised that seeing familiar landscapes, species and cultural elements helped them grasp abstract concepts such as biodiversity loss and climate change. Teachers and park staff noted that animation reduced reliance on technical language and facilitated clearer explanations.

The animation was described as holding participants' attention more effectively than lectures or printed materials. Participants reported higher levels of discussion and interaction following the animation screening, particularly during community training sessions (Figure 2). Observations during training confirmed increased participation, with more questions and shared reflections compared to sessions relying solely on verbal explanations.

The use of local symbols, culturally resonant narratives and multilingual formats was highlighted as a key strength. Community participants, especially those with limited Vietnamese proficiency, reported that the H'Mong-language version enabled them to fully understand conservation messages without relying on translation. Teachers and park staff similarly valued the ability to switch between language versions depending on audience needs.

Overall, participants across all groups expressed strong support for continued use of animation-based tools in future awareness-raising and training activities.

Table 2. Summary of key outcomes by stakeholder group

Stakeholder group	Main outcomes observed	Illustrative implications
Park staff	Improved confidence in communication; better engagement	Use animation in routine outreach
Teachers	Enhanced understanding; high teaching potential	Integrate into school curricula
Community members	Improved awareness; reduced resistance	Use as entry point for dialogue

Differences in responses across stakeholder groups

While all groups responded positively to the animation-based approach, differences emerged in how participants perceived and intended to use the tool.

Park staff viewed the animation primarily as a strategic communication tool to support outreach, training and engagement with communities and visitors. Many reported increased confidence in communicating conservation messages and expressed intentions to integrate the animation into routine training and public awareness activities (Table 2).

Teachers emphasised the animation's potential as an educational resource. They highlighted its suitability for short classroom sessions and extracurricular activities and noted that students were likely to respond positively to the visual and narrative format. Some teachers, however, indicated the need for supplementary teaching guides to maximise educational impact.

Community members focused on the animation's role in improving understanding and trust. Participants reported that the animation made conservation messages feel less directive and more relatable, reducing perceptions of top-down instruction. Several participants noted that the animation helped them better understand why conservation rules exist and how environmental changes affect their livelihoods. These differences reflect the varied roles and expectations of stakeholder groups but also illustrate the flexibility of animation-based communication as a CEPA tool.

Contribution to collaborative management and dialogue

Beyond individual learning outcomes, the animation-based intervention contributed to improved dialogue and collaboration between stakeholders. Park staff and community participants reported that the animation created a shared reference point for discussion, making conversations about conservation more open and less confrontational. Facilitated discussions following animation screenings revealed increased willingness among community members to share concerns, ask questions and discuss practical challenges related to conservation and livelihoods.

Teachers and park staff highlighted that the animation helped bridge gaps between scientific knowledge and local experience, fostering mutual respect and understanding. In several training sessions, discussions extended beyond biodiversity awareness to broader issues of climate resilience, sustainable livelihoods and community participation in park management. While these outcomes do not constitute direct evidence of behavioural change, they indicate positive intermediate CEPA outcomes that support collaborative management processes.

Observed limitations and challenges

Despite the overall positive reception, several limitations and challenges were identified. First, while awareness and understanding improved, translation into immediate action was limited among some community participants, particularly where livelihood constraints and external pressures persisted. Second, the effectiveness of facilitated discussions depended on the skills of trainers and the availability of local translators, highlighting the importance of complementary capacity building. Finally, participants noted that animation alone is insufficient and should be embedded within a broader CEPA strategy that includes follow-up activities, practical demonstrations and institutional support.

DISCUSSION

Animation-based communication as an effective CEPA tool

This study demonstrates that animation-based communication can serve as an effective CEPA tool for protected area management in ethnically and linguistically diverse contexts. Across all stakeholder groups including park staff, teachers and local communities, the animation improved understanding of biodiversity values and climate change impacts, enhanced engagement and facilitated more constructive dialogue (Berkes, 2009; Carlsson & Berkes, 2005). These outcomes align with the core objectives of CEPA, which emphasise not only information transfer but also participation, mutual learning and empowerment (Dahlstrom, 2014; Green et al., 2004; Tsang, 2023).

Conventional CEPA approaches in protected areas often rely on technical language and unidirectional communication, which can alienate non-specialist

audiences and reinforce power imbalances between authorities and communities. Research has emphasised the value of accessible, culturally grounded, and participatory approaches to environmental knowledge communication (Carlsson & Berkes, 2005; Reed et al., 2018; Sterling et al., 2017). Consistent with these perspectives, the animation used in this study translated scientific concepts into accessible narratives grounded in local cultural and ecological contexts. This supports previous findings that visual storytelling can improve comprehension and retention of environmental information, particularly where literacy levels are uneven and oral traditions are strong (Dahlstrom, 2014).

Beyond accessibility, animation contributes to intercultural learning by integrating symbols, stories and perspectives with local significance into conservation communication. The use of culturally familiar narrative structures allows participants from different ethnic groups to relate conservation messages to their own experiences and knowledge systems (Dahlstrom, 2014; Green et al., 2004). Visual elements reduce reliance on written explanations, enabling communication to overcome language barriers and facilitating mutual understanding among stakeholders with diverse linguistic backgrounds (Bennett et al., 2017; Bloomfield & Manktelow, 2021). In this sense, animation serves not only as a communication tool but also as a vehicle for intercultural dialogue and a bridge of knowledge (Berkes, 2009; Sowards et al., 2017; Tsang, 2023).

The effectiveness of the animation did not stem solely from its visual appeal, but from its cultural adaptation and multilingual design. The use of the H'Mong language and locally meaningful symbols enabled community participants to engage directly with conservation messages, rather than receiving them through intermediaries. This suggests that animation-based tools can help address long-standing challenges in CEPA related to language barriers and cultural disconnects (Dahlstrom, 2014; Green et al., 2004; Tsang, 2023).

Changes in understanding of biodiversity and climate change

Park staff (n = 30), 100 per cent reported improved understanding after training, with 67 per cent stating they could understand and apply the knowledge, and 33 per cent reporting improved conceptual understanding. No participants reported difficulty in understanding the content after the training. Teachers (n = 20), 55 per cent reported confidence in applying the knowledge to teaching, while 45 per cent reported improved understanding but needed further support. Teachers consistently highlighted the animation as a useful

teaching aid that simplified complex ecological concepts and stimulated student interest. Community participants (n = 40), over 80 per cent reported a clear understanding of the key messages after the intervention, compared to less than 30 per cent before training. No participants reported a lack of understanding, suggesting that the animation effectively communicated core concepts even in low-literacy contexts.

Implications for collaborative protected area management

Beyond awareness-raising, the animation-based intervention contributed to improved dialogue and perceptions of collaboration between park authorities and local communities (Berkes, 2009; Sowards et al., 2017). This suggests that animation can act as a boundary object, facilitating communication between different knowledge systems, languages and cultural contexts, while maintaining a common point of reference for discussion (Da Silva et al., 2024).

Protected area governance increasingly recognises the importance of collaborative management approaches that involve local communities as partners rather than passive recipients of conservation rules (Sangha et al., 2025). However, meaningful collaboration requires mutual understanding and trust, which are often undermined by communication gaps (Baldauf, 2020). By providing a non-confrontational and relatable medium for discussing conservation issues, the animation helped create a more open space for dialogue.

The observed increase in community willingness to ask questions and share concerns suggests that animation-based CEPA tools may help reduce perceptions of top-down management. While the study did not assess long-term governance outcomes, these intermediate CEPA effects, such as improved communication, trust and shared understanding, are widely recognised as necessary precursors to effective collaboration and compliance in protected area management (de Koning et al., 2016).

These findings suggest that animation-based communication not only improves comprehension but also reshapes the way stakeholders interact. By shifting from information transmission to interactive learning, this approach aligns with participatory communication models that emphasise dialogue, collaborative learning and social learning processes (Reed et al., 2018). This reinforces the role of CEPA not only as an awareness-raising tool but also as a mechanism for enhancing governance processes.

Table 3. What worked, what did not, and why

Aspect	What worked	What did not work	Explanation
Animation content	Visual storytelling; local symbols	Some concepts still abstract	Requires facilitation
Language	H'Mong version highly effective	Translation time-consuming	Needs local support
Engagement	High participation	Limited immediate action	Livelihood constraints
Facilitation	Interactive discussion	Uneven facilitation quality	Staff capacity varies

Education, multipliers and scaling potential

Teachers emerged as a particularly important stakeholder group in this study, highlighting the potential of animation-based tools to support conservation education beyond the boundaries of the protected area. Teachers reported that the animation simplified complex concepts and stimulated interest, making it suitable for classroom use and extracurricular activities. This reinforces the role of educators as key multipliers in CEPA strategies (Ballard et al., 2024; UNESCO, 2017).

Integrating animation-based communication into formal and informal education systems can extend the reach and longevity of conservation messages. In the context of ASEAN Heritage Parks, where resources for continuous outreach are often limited, such tools offer cost-effective opportunities for scaling. Once developed, animations can be reused, adapted and shared across different contexts with relatively low additional costs.

However, teachers also noted the need for complementary materials, such as lesson plans and discussion guides. This underscores that animation should not be viewed as a standalone solution, but as part of a broader CEPA toolkit that supports different learning styles and institutional contexts.

Addressing climate change communication in protected areas

Community participants’ improved understanding of climate-related impacts suggests that animation can support more grounded and locally relevant climate communication (Parker et al., 2022). By linking climate change to familiar landscapes and livelihoods, the animation made abstract concepts more tangible. This is consistent with research showing that place-based climate communication enhances relevance and engagement (Bloomfield & Manktelow, 2021; Tsang, 2023).

Improved understanding does not automatically translate into adaptive action. As observed in this study, livelihood constraints and structural factors limit communities’ capacity to respond to climate risks, regardless of awareness levels. This highlights the need

to integrate CEPA with broader livelihood support, adaptation planning and policy measures (Rakotobe et al., 2023).

What worked, what did not, and why

Several factors contributed to the success of the animation-based approach in this case. These included its cultural relevance, multilingual design, short and focused format, and integration into interactive sessions. The animation worked particularly well as a conversation starter, lowering barriers to participation and enabling more inclusive dialogue.

However, awareness gains did not consistently translate into immediate action among community participants, reflecting broader livelihood and institutional constraints. The quality of outcomes also varied depending on facilitation skills and local support (Kirschke & Kosow, 2025) (Table 3). These findings reinforce that animation-based communication is not a substitute for participatory governance or livelihood interventions, but rather a complementary tool that can strengthen communication within existing management frameworks (de Koning et al., 2016; Rakotobe et al., 2023).

Contribution to conservation practice

This study contributes to conservation practice by providing empirical, practice-based evidence on the use of animation as a CEPA tool in protected area management. It moves beyond theoretical discussions of communication by demonstrating how culturally adapted animation can be designed, implemented and integrated into real-world conservation contexts.

By documenting both strengths and limitations, the study supports more informed decision-making by protected area managers and practitioners. It also highlights the value of documenting and publishing applied conservation experiences, which are often underrepresented in peer-reviewed literature despite their practical significance.

While this study is grounded in the specific socio-cultural and institutional context of HLNP, many of the conditions shaping its outcomes are shared by other ASEAN Heritage Parks, including high cultural and linguistic diversity, increasing tourism pressures and

growing exposure to climate-related risks. Context-specific elements of the intervention include the choice of language, cultural symbols and locally meaningful narratives, all of which must be adapted to the histories and identities of individual parks and communities.

The process of co-developing animation-based CEPA tools, grounded in local consultation, multilingual delivery and facilitated dialogue, is transferable across protected areas facing similar communication challenges. In parks where staff must engage with multiple stakeholder groups and balance conservation objectives with livelihood and tourism concerns, animation can provide a flexible entry point for discussion and learning (Parker et al., 2022). While language and cultural content must be locally adapted, the design principles, implementation process and integration of animation into broader CEPA strategies can be applied across ASEAN Heritage Parks and protected areas beyond the region, provided adequate facilitation capacity and institutional support are in place (Rakotobe et al., 2023).

CONCLUSIONS AND MANAGEMENT IMPLICATIONS

This study demonstrates that animation-based communication can play a valuable role in strengthening CEPA in protected areas characterised by cultural and linguistic diversity. Using HLNP as a case study, the research provides practice-based evidence that culturally adapted animation can improve understanding of biodiversity values and climate change impacts, enhance stakeholder engagement, and support more constructive dialogue between park authorities and local communities.

The findings suggest that animation is particularly effective in overcoming common barriers to conservation communication, including language differences, uneven literacy levels and limited familiarity with technical concepts. By combining visual storytelling with locally relevant narratives and multilingual formats, the animation enabled diverse stakeholder groups to engage more directly with conservation messages.

From a management perspective, several implications emerge. First, protected area authorities should consider integrating animation-based tools into formal CEPA strategies, rather than treating them as stand-alone products (CBD, 2020; Reed et al., 2018). Animation can complement existing approaches, such as community meetings, school-based education and visitor interpretation, by providing a consistent and accessible communication resource.

Second, cultural and linguistic adaptation should be prioritised in the design of CEPA tools. The effectiveness of the animation in this study was closely linked to its use of local languages, symbols and storytelling traditions. Protected area managers working in ethnically diverse settings should allocate time and resources for participatory design processes that involve local stakeholders from the outset.

Third, capacity building for facilitators and educators is essential. The animation proved most effective when embedded within interactive sessions that encouraged discussion and reflection. Investment in communication and facilitation skills among park staff and partner organisations can significantly enhance the impact of such tools.

While this study focused on short-term CEPA outcomes, it highlights the potential of animation-based communication to contribute to longer-term conservation objectives when combined with supportive policies, livelihood interventions and participatory governance mechanisms. Future research could explore the long-term effects of animation-based CEPA on behaviour change, compliance with conservation regulations and ecological outcomes.

In conclusion, animation-based communication offers a flexible, inclusive and scalable CEPA tool for protected area management. For ASEAN Heritage Parks and other protected areas facing similar challenges, investing in culturally adapted visual storytelling can enhance conservation communication, strengthen collaboration and support more resilient and socially inclusive conservation outcomes.

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RESUMEN

La comunicación, la educación y la sensibilización del público (CEPA) son esenciales para la gestión colaborativa de las áreas protegidas, especialmente en contextos cultural y lingüísticamente diversos, donde los enfoques convencionales basados en charlas suelen tener un impacto limitado. Este artículo presenta un estudio de caso basado en la práctica del Parque Nacional de Hoang Lien, un Parque del Patrimonio de la ASEAN situado en el norte de Vietnam, en el que se analiza el uso de la comunicación mediante animaciones como herramienta de CEPA para fomentar la sensibilización sobre la biodiversidad y la participación de las partes interesadas. Entre 2023 y 2025, se desarrolló conjuntamente una breve animación multilingüe utilizando narraciones relevantes para el contexto local y representaciones visuales de los ecosistemas del parque, que se integró en actividades de formación y divulgación dirigidas al personal del parque, al profesorado y a las comunidades de minorías étnicas de la zona de amortiguación. Los datos procedentes de evaluaciones previas y posteriores a la formación, valoraciones de los participantes, debates en grupos focales y observaciones directas indican una mejor comprensión de los valores de la biodiversidad y los impactos del cambio climático, altos niveles de participación y percepciones positivas del enfoque en comparación con los métodos de comunicación convencionales. La animación también favoreció el diálogo entre las autoridades del parque y las comunidades locales, al proporcionar una base accesible para el debate. Los resultados sugieren que la animación adaptada culturalmente puede ser un complemento útil y escalable de las estrategias de CEPA en áreas protegidas que se enfrentan a la diversidad lingüística y a distintos niveles de alfabetización, cuando se integra en actividades facilitadas y participativas.

RÉSUMÉ

Une communication, une éducation et une sensibilisation du public (CEPA) efficaces sont essentielles à la gestion collaborative des aires protégées, en particulier dans des contextes marqués par une grande diversité culturelle et linguistique où les approches conventionnelles, axées sur les exposés, ont souvent un impact limité. Cet article présente une étude de cas fondée sur la pratique, menée dans le parc national de Hoang Lien, un parc du patrimoine de l'ASEAN situé dans le nord du Vietnam, qui examine l'utilisation de la communication par l'animation comme outil CEPA pour favoriser la sensibilisation à la biodiversité et l'engagement des parties prenantes. Entre 2023 et 2025, une courte animation multilingue a été élaborée conjointement à partir de récits adaptés au contexte local et de représentations visuelles des écosystèmes du parc ; elle a ensuite été intégrée à des activités de formation et de sensibilisation destinées au personnel du parc, aux enseignants et aux communautés ethniques minoritaires de la zone tampon. Les données issues des évaluations avant et après la formation, des retours des participants, des discussions en groupes de réflexion et des observations directes indiquent une meilleure compréhension des valeurs de la biodiversité et des impacts du changement climatique, un niveau d'engagement élevé et des perceptions positives de cette approche par rapport aux méthodes de communication conventionnelles. L'animation a également favorisé le dialogue entre les autorités du parc et les communautés locales en fournissant une base accessible pour la discussion. Les résultats suggèrent qu'une animation adaptée à la culture locale peut constituer un complément utile et évolutif aux stratégies de CEPA dans les aires protégées confrontées à la diversité linguistique et à des niveaux d'alphabétisation variables, lorsqu'elle est intégrée dans des activités animées et participatives.

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